DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop S2-25-26
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State Demonstrations Group

February 21, 2024

Henry Lipman
State Medicaid Director
Office of Medicaid Business and Policy
New Hampshire Department of Health and Human Services
129 Pleasant Street
Concord, NH 03301-6521

Dear Dr. Henry Lipman:

The Centers for Medicare & Medicaid Services (CMS) completed its review of the Summative Evaluation Report, which is required by the Special Terms and Conditions (STCs), specifically STC #78 "Evaluation Reports" of New Hampshire's section 1115 demonstration, "Building Capacity for Transformation (BCT)" (Project Number 11-W-00301/1, approved from January 5, 2016 through December 31, 2020). The demonstration was approved on January 5, 2016 and was effective through December 31, 2020. This Summative Evaluation Report covers the entirety of the demonstration period, as well as a pre-demonstration baseline period (2013 – 2015). CMS determined that the Evaluation Report, submitted on June 30, 2022 and revised on April 14, 2023, is in alignment with the CMS-approved Evaluation Design and the requirements set forth in the STCs, and therefore, approves the state's Summative Evaluation Report.

This report highlights the progress that was made towards many of the demonstration's goals of integrating behavioral and physical health care, increasing quality of care, and reducing overall costs of care. Compared to the pre-demonstration period, regression analysis with significance testing shows that most quality performance measures improved over the demonstration period. Additionally, survey responses and key informant interviews suggest that beneficiaries experienced some improvements in the integration of behavioral and physical health care, which was likely aided by the increases in behavioral health provider capacity documented in the report. The state also faced some challenges with implementing parts of the demonstration, such as health information technology and alternative payment models, and the report contains valuable recommendations for future demonstrations to mitigate those challenges. We look forward to future analysis from the state's other ongoing demonstrations on the continued progress the state is making in the provision of behavioral health care.

The approved Evaluation Report may now be posted to the state's Medicaid website within 30 days. CMS will also post the Summative Evaluation Report on Medicaid.gov.

We appreciated our partnership on the Building Capacity for Transformation (BCT) section 1115 demonstration and look forward to our continued partnership on the ongoing New Hampshire section 1115 demonstrations. If you have any questions, please contact your CMS demonstration team.

Sincerely,

Danielle Daly -S

Digitally signed by Danielle Daly -S
Date: 2024.02.21 11:45:01 -05'00'

Danielle Daly
Director
Division of Demonstration Monitoring and Evaluation

cc: Joyce Butterworth, State Monitoring Lead, CMS Medicaid and CHIP Operations Group

CATHERINE CUTLER INSTITUTE

Summative Evaluation Report

by the Independent Evaluator for the New Hampshire Delivery System Reform Incentive Payment (DSRIP) Program

June 2022

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Acknowledgments

Suggested Citation:

List of Acronyms

42 CFR Part 2	Regulations to protect patient records created by federally funded programs for the treatment of substance use disorder (SUD)
AAP	American Academy of Pediatrics
ABD	Acquired Brain Disorder
ACA	Affordable Care Act
ACG	Adjusted Clinical Groups
ACP	American College of Physicians
ACS	Ambulatory Care Sensitive
ADT	Admission-Discharge-Transfer
ADHD	Attention-deficit/hyperactivity disorder
AHRQ	Agency for Healthcare Research and Quality
AOD	Alcohol and Other Drugs
APM	Alternative Payment Model
AUD	Alcohol Use Disorder
BH	Behavioral Health
BRFSS	Behavioral Risk Factor Surveillance System
CAHPS®	Consumer Assessment of Healthcare Providers and Systems, a registered trademark of the Agency for Healthcare Research and Quality (AHRQ)
CBO	Community-Based Organization
CCSA	Comprehensive Core Standardized Assessment
CDC	Centers for Disease Control and Prevention
CHAN	Community Health Access Network
CMHA	Community Mental Health Agreement
CMHC	Community Mental Health Center
CMS	Centers for Medicare & Medicaid Services
CMT	Collective Medical Technologies (vendor)
COC	Continuity of Care
COPD	Chronic Obstructive Pulmonary Disease
CPI	Consumer Price Index

CSS	Community Support Services
CTI	Critical Time Intervention
CVD	Cardiovascular Disease
CY	Calendar Year
DD	Developmental Disabilities
DHHS	Department of Health and Human Services
DID	Difference-in-Difference
DSRIP	Delivery System Reform Incentive Payment
DY	Demonstration Year
ED	Emergency Department
EHR	Electronic Health Record
EMR	Electronic Medical Record
ENS	Electronic Notification System
EQRO	External Quality Review Organization
ER	Emergency Room
FAR	Frontier and Remote
FDA	Food and Drug Administration
FFS	Fee for Service
FORHP	Federal Office of Rural Health Policy
FPL	Federal Poverty Level
FQHC	Federally Qualified Health Center
FTE	Full Time Equivalent
GLM	Generalized Linear Model
HCBS	Home and Community Based Services
HDL	High-Density Lipoprotein class of cholesterol
HEDIS®	Healthcare Effectiveness Data and Information Set, a registered trademark of NCQA
HIT	Health Information Technology
HIPAA	Health Insurance Portability and Accountability Act
HPSA	Health Professional Shortage Area

HSAG	Health Services Advisory Group
IDN	Integrated Delivery Network
IOP	Intensive Outpatient Services
LCME	Local Care Management Entity
LDL	Low-Density Lipoprotein class of cholesterol
LDL-C	Test of Low-Density Lipoprotein in the blood to determine risk of cardiovascular disease
LOS	Length of Stay
LTSS	Long-Term Services and Supports
IMD	Institute for Mental Disease
MAT	Medication Assisted Treatment
MAeHC	Massachusetts eHealth Collaborative
MCM	Medicaid Care Management
MCO	Managed Care Organization
MDCT	Multidisciplinary Care Team
MED	Morphine Equivalent Dose
MM	Beneficiary (Member) Months
MMIS	Medicaid Management Information System
MOM	Maternal Opioid Misuse
MUA	Medically Underserved Area
MY	Measure Year
NCQA	National Committee for Quality Assurance
NH	New Hampshire
NHH	New Hampshire Hospital
NHHPP	New Hampshire Health Protection Program
NPI	National Provider Identifier
NPPES	National Plan and Provider Enumeration System
NQF	National Quality Forum
OUD	Opioid Use Disorder
PAP	Premium Assistance Program

PDMS	Participant Directed and Managed Services
PCP	Primary Care Provider
PHE	Public Health Emergency
PMPM	Per Member (Beneficiary) Per Month
PQI	Prevention Quality Indicators
PSM	Propensity Score Matching
QHP	Qualified Health Plan
QI	Quality Improvement
RFP	Request for Proposals
RPHN	Regional Public Health Networks
SAMHSA	Substance Abuse and Mental Health Services Administration
SAS	Statistical Analysis Software
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SDoH	Social Determinants of Health
SED	Serious Emotional Disturbances
sFTP	Secure File Transfer Protocol
SIM	State Innovation Model
SMI	Serious Mental Illness
SPSS	Statistical Package for the Social Sciences
STC	Special Terms & Conditions
SUD	Substance Use Disorder
USPSTF	United States Preventative Services Task Force
UTI	Urinary Tract Infection

Table of Contents

1. Executive Summary

1.1 Overview of the Demonstration

Delivery System Reform Incentive Payment (DSRIP) programs are part of the broader Center for Medicare & Medicaid Services (CMS) Section 1115 Waiver programs and provide states with significant funding to support system transformation efforts. CMS approved New Hampshire's Building Capacity for Transformation Section 1115(a) Medicaid Demonstration Waiver in 2015. The Demonstration was approved for a five-year intervention period (calendar years 2016-2020), with the first year dedicated to capacity building and planning. The overall vision of the DSRIP Demonstration was to improve the care for New Hampshire's Medicaid Beneficiaries with behavioral health disorders by addressing workforce and infrastructure shortages, improving care transitions, and integrating physical and behavioral health. DSRIP featured funding of $150 million in incentive payments over the five-year Demonstration period, performance-based funding distributions, and support for transition to alternative payment models (APMs). Funding for project planning and capacity building, not typically covered by standard Medicaid, was a feature of the Demonstration, and the State was required to participate in a variety of statewide and community-driven projects.

1.2 Summary of the Goals of the Demonstration

New Hampshire sought to transform the delivery of care to Medicaid Beneficiaries in the state by: 1) improving care transitions; 2) promoting integration of physical and behavioral health; 3) building mental health and substance use disorder treatment capacity within the state, and 4) preparing for alternative payment models (APMs). As part of the Demonstration, seven (7) regional Integrated Delivery Networks (IDNs) were developed to design and facilitate projects in a defined geographic region aimed at achieving these goals. Per the Special Terms and Conditions (STCs) of the CMS waiver, by the end of the Demonstration period, the goals were for New Hampshire's Medicaid Beneficiaries with co-occurring physical and behavioral health issues to experience: higher quality of care; lower costs of care; reduced rates of avoidable re-hospitalizations; shorter wait times for inpatient psychiatric care; and increased access to outpatient care at community mental health centers.

1.3 Overview of the Summative Evaluation Report

All DSRIP Demonstrations are required to implement an evaluation conducted by an independent evaluator. In October 2018, the New Hampshire Department of Health and Human Services (DHHS) contracted with the Catherine E. Cutler Institute for Health and Social Policy at the University of Southern Maine ("Cutler Institute") to conduct its DSRIP Demonstration evaluation. This evaluation utilized a mixed-methods design to gain a multi-dimensional and robust understanding of the Demonstration's process and performance measures.

An Interim Report was developed by the evaluator and accepted by CMS on October 19, 2020. This Summative Report builds from the process evaluation included in the Interim Report, which included qualitative data through the mid-fourth year (2019) of the Demonstration.

This summative report details:

- Findings on outcomes from analysis of performance metrics calculated from administrative data, including sub-population analyses on persons with behavioral health diagnosis/es and selected chronic conditions, as well as a comparative analysis of outcomes by IDN; and
- Qualitative data analysis and findings (built from and expanded upon the Interim Report process evaluation), which offer contextual information about the Demonstration's implementation and operations, including successful strategies and challenges of the Demonstration's tenet initiatives, as well as sustainability of efforts and changes brought on by the Demonstration.

1.4 Research Questions & Hypotheses

The DSRIP Demonstration evaluation was guided by five overarching research questions and corresponding hypotheses designed to explore the effectiveness of the Demonstration through a set of short-term and intermediary performance measures collected at appropriate times both during and post- Demonstration. (A full mapping of the research questions, domains, hypotheses, and measures is found in Sections 3.2, 3.3, and 3.6 of this report).

There were over fifty evaluation measures included in the study design. Each measure was examined to determine whether it supported its associated hypothesis. There were three possible criteria for whether a measure supported a hypothesis.

- **Yes** – *the analysis fully supports the hypothesis.* For the Medicaid claims-based measures, a measure analysis fully supports the hypothesis that there was significant change in the Demonstration period. For the process measures using qualitative data, the analysis supports the hypothesis that there were strong indicators of positive change from the majority of stakeholders and, if applicable, they were supported by documentation/reporting.
- **Partially Supported** – *the analysis partially supports the hypothesis or there was mixed feedback from stakeholders on the measure.* For example: there may have been positive change during the Demonstration Pandemic period (2020), but not during the Demonstration period (2016-2019), the population overall had worse outcomes during the Demonstration period but the behavioral health population had a better outcome compared to the non-behavioral health outcome, the unmatched behavioral health population saw a positive outcome while the matched population did not, or qualitative had mixed or conflicting results. Partially supported results indicate a mixed result and should be interpreted with caution.
- **No** – *the analysis does not support the hypothesis.* Significant changes were not seen through analysis and/or qualitative data did not support the measure.

The following table summarizes the high-level results of the evaluation of the New Hampshire DSRIP Demonstration regarding meeting waiver goals: showing if the goal(s) were supported by hypotheses, and how many of the hypotheses' assigned measures

supported, partially supported, or did not support each hypothesis. See Appendix G for a more detailed summary of the data and analyses utilized to determine whether measures had statistically significant findings that contributed to support of hypotheses.

Waiver Goal: Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs		
Research Question 1 - Hypotheses	Analysis Supports Hypothesis	# Measures by Supporting Status
H1.1 Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care;	Yes	3 Yes 7 Partially 8 No
H1.2 Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care;	Yes	1 Yes 3 Partially 1 No
H1.3 Population health will improve;	Partially Supported	1 Yes 1 No
H1.4 The total cost of care will be lower for Medicaid Beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders;	No	1 Yes 1 Partially 6 No
H1.5 The rate of avoidable hospital re-admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower;	No	2 No
H1.6 The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders will be lower; and	Partially Supported	1 Partially
H1.8 Average length of stay for inpatient psychiatric care at New Hampshire Hospital will be lower.	No	1 No
Note: Hypotheses 1.7, 1.9, and 1.10 were removed from the study. See Appendix E for more details.		
Research Question 1: Results support waiver goal		

Waiver Goal: Improve Health Care Integration and Coordination for Beneficiaries		
Research Question 2 - Hypothesis	Analysis Supports Hypothesis	# Measures by Supporting Status
H2.1 Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP demonstration	Yes	4 Yes 8 Partially
Research Question 2: Results support waiver goal		

Waiver Goal: Improve Capacity of the State's Behavioral Health Workforce		
Research Question 3 - Hypothesis	Analysis Supports Hypothesis	# Measures by Supporting Status
H3.1 Capacity to deliver evidence-based behavioral health treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.	Yes	1 Yes
Research Question 3: Results support waiver goal		

Waiver Goal: Improve New Hampshire's' Health Information Technology (HIT) Ecosystem		
Research Question 4 - Hypotheses	Analysis Supports Hypothesis	# Measures by Supporting Status
H4.1 HIT infrastructure among the IDNs will improve as a result of the Demonstration statewide and IDN specific project activities.	Yes	1 Yes
H4.2 HIT strategies implemented during the DSRIP demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.	Yes	1 Yes
Research Question 4: Results support waiver goal		

Waiver Goal: Transition to Alternative Payment Models (APMs)		
Research Question 5 - Hypothesis	Analysis Supports Hypothesis	# Measures by Supporting Status
H5.1 DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.	No	1 No
Research Question 5: Results do not support waiver goal		

Sections 3.2, 3.3, and 3.6 of this Summative Evaluation Report detail the research questions, hypotheses and associated domains and measures.

1.5 Summary of Key Findings

The Summary of Key Findings focuses on documenting early observations and implications for practice from the process evaluation, including highlighting both successes and ongoing challenges to implementation. In addition, lessons learned throughout the NH DSRIP Demonstration are presented to help inform other Demonstration projects.

1.5.1 Successes of the DSRIP Demonstration

Below is a summary of key successes of the DSRIP Demonstration documented as part of the summative evaluation.

- *More effective care collaborations between providers led to increased integrated care for Beneficiaries with behavioral health needs.* The development of new relationships between health care providers and community-based organizations created the ability to address the needs of Beneficiaries with behavioral health diagnoses in a more patient-centered and efficient manner. Furthermore, the development of multi-disciplinary care teams (MDCTs) to address highest-needs populations enhanced care integration. IDNs and partners reported through surveys and interviews their perceptions that care transitions improved, more appropriate and immediate referrals were being made; and patients were receiving more integrated behavioral health services.

- *Health Information Technology Software implemented as part of the Demonstration enhanced the capacity of health systems and providers to communicate with one another, facilitated care coordination, and improved the quality and timeliness of the care provided to Beneficiaries.* The implementation of software applications helped providers connect Beneficiaries with appropriate services in a timely manner. Examples of access-related successes include same-day appointments as a result of event notifications and connections between providers and organizations that created additional appointment availability.

- *Summative findings indicate that the Demonstration helped enhance the State's behavioral health workforce through targeted recruitment and retention activities, updating policy and licensure requirements, and supporting professional development activities.* Qualitative findings of increased staff capacity, though interrupted and disrupted in the Demonstration's final year due to the COVID-19 pandemic, indicate that IDNs and their partners increased responsiveness to the behavioral health care needs of Beneficiaries while at the same time increasing their capacity to address social determinants of health.

- *The Demonstration enhanced access to services for individuals with behavioral health care by increasing awareness of available services in the state.* Enhanced collaboration across partner organizations helped to increase provider awareness of the resources available in their region. In addition, enhanced communication and referral processes increased their ability to engage patients with available resources more efficiently.

⬥ *Screenings for social determinants of health (SDoH) increased awareness of the need for coordinated care.* Formalizing screenings for SDoH during the Demonstration brought attention to the need for continued collaboration and communication between health care and social services partners for appropriate referrals and triage of the needs of the highest-risk populations.

⬥ *The overall health composite rating from the Beneficiary Experience Survey indicates the majority of Beneficiaries rate their health care positively and despite a pandemic, ratings improved over time.* On a scale of 0-1-, the state mean was 8.06 in Wave 1, 8.13 in Wave 2, and 8.15 in Wave 3.

⬥ *Findings from performance measures indicate improvements to care integration*.

⬥ *Over the course of the Demonstration, there was a reduction in emergency department (ED) visits, and avoidable ED visits*.

1.5.2 DSRIP Demonstration Challenges

Below is a summary of some of the Demonstration challenges documented as part of the summative evaluation.

⬥ *While findings indicate that enhancements to the HIT infrastructure facilitated care coordination and integration during the Demonstration period, there remain issues with reliability of HIT systems to deliver timely and accurate communications between providers and organizations*. In addition, not all organizations and providers implemented the software packages and there remain significant issues with inter-operability, which limited the utility of some of the software applications for data sharing and communication. Large gaps still exist within the State's HIT infrastructure.

⬥ *The reporting requirements associated with the Demonstration were a challenge for participating organizations.* Quality data tracking and reporting is largely predicated on the feasibility and perceived utility of the selected metrics; feedback indicates that the reporting requirements were burdensome and, in some cases, lacked utility. Challenges reported: not having the time to support collecting, compiling, and recording data on performance metrics; gathering and compiling data from multiple sources using a mix of data collection methods; and staffing (e.g. allocating staff time for monitoring data; staff training). The outright disruptions of 2020 and the allowance to not report on performance metrics meant many partner organizations did not submit performance data in the final year of the Demonstration.

⬥ *Although IDNs made excellent progress in facilitating data sharing across their partner organizations, regulations and evolving privacy laws remain a challenge to data sharing*. The complexity of interpreting privacy regulations coupled with the constantly evolving nature of privacy and security laws slowed down efforts to expand data sharing arrangements among organizations and project partners. Any future endeavors could face similar challenges.

⬥ *Staff turnover and provider shortages hindered the ability of IDNs and their project partners to expand access to behavioral health services in New Hampshire.* While

the Demonstration provided resources to increase the capacity of the behavioral health care workforce, workforce shortages in the state remain a significant barrier to behavioral healthcare access. Workforce issues also contributed to limited available providers, fewer treatment options and locations, as well as long wait times.

⬥ *The IDNs' potential to be leveraged as a facilitator to sustainable payment reform was underutilized as the State attempted to shift to APMs .* At the end of Demonstration Year 4, most partners did not understand or fully see their own role within the future shift to APMs. While these findings could be partially attributed to delayed Demonstration implementation, the State's delay in leveraging IDNs throughout the Demonstration coupled with the COVID-19 pandemic disruption in 2020 resulted in a missed opportunity to be much further down the road with APMs. (Notably, by 2019, New Hampshire DHHS had shifted its APM transition focus away from the IDNs to the NH Medicaid Managed Care Organizations after determining that achieving its APM goal was not feasible within the Demonstration's construct and time frame.)

1.6   Recommendations for Other States

New Hampshire's DSRIP program required considerable time and resources from stakeholders at almost every juncture of implementation. IDNs were formed, in many cases, from disparate partners who had never collaborated before, which required substantial time and energy during their formation, application development, and project planning stages. As such, there were different starting points for each IDN based on the composition and governance of each regional entity with variation on levels of effort to "get everyone to the table."

1.6.1 Recommendations for System Transformation Demonstrations

Below are strategies to consider for similar initiatives in both the planning and early stages of implementation, as well as operationalizing and course-correcting after implementation, based on the process evaluation findings:

⬥ *Pre-planning and assessing implementation readiness prior to submitting an 1115 application is essential to maximizing the full duration of an 1115 Demonstration.* Early understanding of IDN guidelines and expectations will allow organizations to determine the feasibility of applying to be an IDN and can help facilitate pre-planning efforts prior to the implementation of the 1115 Demonstration. In addition, collaborating with stakeholders during the waiver application planning phase to establish criteria for IDNs prior to Demonstration approval will expedite IDN selection and implementation of IDN networks after the onset of the Demonstration.

⬥ *Collaboration is fundamental to promoting systems transformation and the implementation of integrated models of care.* Establishing and maintaining collaborative partnerships are necessary to creating comprehensive systems of care and improving access to care for individuals with complex health care needs. Establishing clinical-community linkages is also critical for establishing and

expanding the infrastructure necessary to support integrated models of care that address physical, behavioral and social needs.

⬥ *Address challenges and communicate strategies around workflows and resources as early as possible in the implementation process, as they are critical to successes and further collaboration.* It is essential that states implementing large Demonstration projects engage stakeholders as early as possible in the process. Consistent and frequent communication from leadership on programmatic goals and the value of the initiative can play a pivotal role in helping to overcome implementation challenges.

⬥ *Strategize around confidentiality and data sharing issues during the Demonstration design phase, and as early as possible in the implementation. Issues around confidentiality and data sharing are complicated and can lead to substantial delays in program implementation.* Clear guidance on privacy laws and data sharing is essential to implementing data sharing protocols. Identifying and gaining consensus on mechanisms for data sharing early in the Demonstration is critical to establishing efficient systems and ensuring application inter-operability across partners to support comprehensive data sharing.

⬥ *Early engagement of stakeholders in the identification of performance measures can help facilitate more robust reporting.* External clinical input into the Demonstration process is key to facilitating high-quality data reporting and ensuring that data reporting requirements are specific, measurable, realistic and relevant.

⬥ *Provide resources to support data analytics.* System transformations and incentive payment models rely heavily on data from an already stressed and overburdened system. Allowing for, or even requiring, state resources to support data analytics would allow providers and stakeholders to better understand and utilize real-time data to see and make changes as needed during a Demonstration of this scope.

⬥ *Communicate as much as possible throughout the Demonstration about mechanisms for transitioning to Value Based Payment and/or Alternative Payment Models.* Frequent, clear and concise communication as well as providing training and resources for organizations and providers are necessary to support successful transitions to APMs.

⬥ **Align with existing systems.** Building on existing infrastructure can help to facilitate system transformation efforts. It is critical for newly formed collaborative partners to leverage existing resources, including HIT and workforce capacity, within the partnership.

1.7 Conclusion

This Summative Evaluation Report focuses on the successes and challenges faced by New Hampshire as they implemented and operationalized their Section 1115(a) Medicaid Demonstration Waiver, *New Hampshire Building Capacity for Transformation* (New Hampshire Delivery System Reform Incentive Payment (DSRIP) Program). The NH DSRIP program made improvements in integrating physical and behavioral health, building mental

health and substance use disorder treatment capacity, and improving care transitions for Medicaid Beneficiaries experiencing mental health and/or substance use disorders or substance misuse.

New Hampshire's DSRIP program succeeded in demonstrating progress towards waiver goals; some were more successful than others (integration of care, workforce development). While all waiver goals were not fully achieved in the 5-year time frame (APMs), the cultural shifts around partnership collaborations, screening for social determinants of health, HIT infrastructure improvements, and workforce capacity built in the first four years of the Demonstration held steady during the extreme disruptions that reverberated over the Demonstration's final year due to the COVID-19 pandemic.

There are continued opportunities for investment in and improvement to the health care delivery system. The Demonstration succeeded in creating networks that remain in place, although no longer officially supported via IDN structure, with engaged stakeholders who have expressed willingness to continue to build on the successes of the Demonstration. The sustainability and growth of these networks as well as any future initiatives undertaken by them will continue to require significant time and investment. The magnitude of the Demonstration's mission to redesign the system of care for some of New Hampshire's most at-risk populations speaks to the enormity of any task at hand moving forward with an initiative of such size and scope. None the less, promising practices and lessons learned from the DSRIP program create a pathway where the state can make concentrated and continued efforts to affect change especially in areas where more time is needed to see improvements.

2.   General Background Information

2.1 New Hampshire Medicaid Program: Context for Report

The New Hampshire (NH) Medicaid program provides health care coverage to eligible individuals ("Beneficiaries"), with the common goal of improving public health. At the end of the DSRIP Demonstration in December 2020, 142,828 individuals were enrolled in NH's Standard Medicaid program, with an additional 69,443 adults enrolled in the Granite Advantage Medicaid Expansion program.[1] Of those in the Standard Medicaid program, 68.3% were children (0-18) and 31.7% were adults (19+).[1] Due to federal and state eligibility requirements, the majority of individuals served by NH Medicaid are either low-income and/or live with some sort of disability. Unless otherwise indicated (i.e., where total population is used as a reference), this report solely focuses on New Hampshire Medicaid Beneficiaries.

2.2 Addressing Health Care Delivery for Medicaid Beneficiaries with Behavioral Health (BH) Disorders in New Hampshire

Almost 4% of New Hampshire's total 1.4 million residents experience severe mental health conditions.[2] For decades, the State of New Hampshire (NH) has worked to reform care to better serve people with any behavioral health disorder (includes mental health and/or substance use disorders). In the 1980s, New Hampshire began developing a community-based mental health system in an effort to eliminate unnecessary institutionalization of persons with behavioral health disorders.[3] However, throughout the 1990s and into the 21st century, both inpatient and community mental health provider capacity began declining.[4] Soon after, in 2008, New Hampshire released its comprehensive stakeholder-driven Ten-Year Mental Health Plan which identified key recommendations to improve the State's mental health infrastructure.[5] A grave national recession hindered the implementation of many of the recommendations included in that report, particularly those related to allocating increased funding to support capacity-building efforts in the state.[3] As the recession wore on, both New Hampshire Hospital (NHH), the sole state-run psychiatric hospital, and the Community Mental Health System faced multiple challenges as the State grappled to meet the mental health care needs of the population as demand for services outweighed supply.

In 2014, on average, anywhere from 11-31 adults were waiting for admission to NHH, and almost 1 out of 3 people waited for more than 24 hours in the emergency department before a bed became available.[4] The number of inpatient psychiatric beds at NHH, as well as those at residential and community-based programs declined, while the state experienced a rising population with subsequent growing demands for behavioral health care.[3] Patients also faced long wait times for outpatient services; in 2014, new adult patients waited an average of 26 days for an appointment with a behavioral health counselor and 49 days to see a provider with prescribing authority.[6] Additionally, a landmark settlement agreement signed in 2014, the Community Mental Health Agreement (CMHA),[7] required the State to provide community-based services and supports to people with serious mental illness (SMI) in lieu of providing care in institutional settings such as NHH or the Glencliff House, a state-operated psychiatric nursing facility.

The State's mental health service capacity was further constrained by limited treatment options for persons with substance use disorders (SUD). As the State's infrastructure sought to meet the increasing demands for treatment, the national opioid epidemic descended on New Hampshire at an alarming rate. Overdose deaths involving opioids more than doubled between 2013 and 2014 alone.[8] Moreover, in 2014, less than 10% of adults in New Hampshire with an alcohol use disorder (AUD) received treatment and approximately 16% of adults with other SUDs received treatment.[9] In the same year, NH Medicaid expanded to include coverage of over 50,000 newly eligible adults and included coverage of SUD services to that group. However, these efforts placed new demands on providers with already limited capacity; of the adults in the new expansion group, one in six had extensive mental health or substance use needs.[10]

In Fiscal Years 2011 and 2012, over 33% of NH Medicaid Beneficiaries had a behavioral health diagnosis (mental health and/or substance use disorder diagnosis), an increase of almost 1,000 from the previous year. Limited integration of behavioral and physical health services coupled with shortages in the number of health care workers further constrained the State's ability to meet the needs of people with behavioral health disorders.[11] As is the case in other rural states, New Hampshire had difficulties with shortages and turnover in its behavioral health workforce; recruiting and retaining the necessary qualified workforce was paramount to achieving any progress in the integration of care for persons with behavioral health needs. Historically lower Medicaid reimbursement rates in NH translated to lower salaries, particularly in the Community Mental Health Centers (CMHCs) that predominantly serve Medicaid Beneficiaries. This further exacerbated workforce difficulties in a state that contends with provider shortages, particularly in its more rural northern regions, along with workforce migration in its southern region to higher-paid positions in the greater Boston area.[5]

Such was the landscape when, in April 2014, New Hampshire proposed its Building Capacity for Transformation Section 1115(a) Medicaid Demonstration Waiver aiming to integrate care and better serve the behavioral health needs of the NH Medicaid population.[12] The Demonstration would be implemented in tandem with other efforts aimed at enhancing the State's behavioral health infrastructure for the first time in nearly a decade. The re-investment effort included a number of key strategies including, but not limited to: a plan to begin covering substance use disorder (SUD) services for all Beneficiaries by 2016; the expansion of the population eligible to participate in the Medicaid program; implementing a newly signed Community Mental Health Agreement (CMHA); and, leveraging the renewed legislative commitment to funding behavioral health services in the state to expand access to care for behavioral health conditions.

By design, Medicaid Demonstration Waivers, authorized under Section 1115 of the Social Security Act, give states the ability to test programs aimed at improving the delivery and payment of Medicaid services not typically reimbursable under federal guidelines.[13] New Hampshire's Building Capacity for Transformation Waiver would be funded as the Delivery System Reform Incentive Payment (DSRIP) project.[14] Nationally, DSRIP Demonstrations endeavor to advance the triple aim of improving population health, enhancing the quality of care for patients, and reducing costs of care. Specifically, the NH DSRIP Demonstration aims to reform Medicaid delivery through incentive payments given to networks of providers that meet specific quality metrics aimed at lowering costs while improving patient outcomes.

2.3 Overview of New Hampshire's DSRIP Goals and Objectives

New Hampshire's Building Capacity for Transformation Demonstration Waiver, funded as the Delivery System Reform Incentive Payment Demonstration (hereinafter "DSRIP Demonstration *or* Demonstration"), is part of a statewide multi-pronged approach to address barriers to providing behavioral health services.

The Demonstration was approved by the Centers for Medicare and Medicaid Services (CMS) on January 5, 2016. With this waiver, New Hampshire sought to transform its behavioral health care delivery system by integrating physical and behavioral health, expanding provider capacity, and reducing gaps in patient treatment during care transitions. Through its systems transformation and infrastructure building efforts, the DSRIP Demonstration aimed to improve quality and access to care; care coordination; and health outcomes for New Hampshire Medicaid Beneficiaries with behavioral health disorders.

Under the DSRIP Demonstration, the state made performance-based funding available to seven regionally based Integrated Delivery Networks (IDNs) that serve Medicaid Beneficiaries with behavioral health needs. The IDNs provided support to the providers within their network to:

(1) facilitate integrated models of care designed to address the full range of Beneficiaries' needs;

(2) expand capacity to address emerging and ongoing behavioral health needs in appropriate settings; and,

(3) reduce gaps in care during transitions between settings by improving coordination across providers and linking Medicaid Beneficiaries with community supports.

The NH DSRIP Demonstration, approved through December 31, 2020, covered a five-year period (calendar years 2016, 2017, 2018, 2019, 2020).

Figure 2.3—1: NH DSRIP Driver Diagram

Aims	Primary Drivers	Secondary Drivers
Integrate Behavioral Health and Physical Health	Breakdown of silos of care among primary care, SUD, and mental health providers	Implementation of Integrated Care Models
	Adoption of SAMHSA-defined levels of integrated care	
Increase Care Transitions Coordination	Health Information Technology established or enhanced to support care planning, management, and information sharing	Implementation of standard assessment, treatment, management and referral protocols
	Reduction in gaps in care during transitions across care settings for individuals with behavioral health disorders	Reduction in wait times
	Increased access to behavioral health care and community-based social services throughout the state	
Expand Provider Capacity	Trained allied health and peer workforce to coordinate the full continuum of substance use and mental health services	Implementation of effective community based behavioral health prevention, treatment, and recovery models
	Expanded capacity to address behavioral health needs in appropriate settings	Provision of incentives for high-need services
Reduce Costs	Reduction in unnecessary use of inpatient and ED services, and the cycling of justice-involved individuals between jail and community	
	Adoption of Alternative Payment Models	

The overarching goal of the NH DSRIP Demonstration was to centrally support the development and maintenance of an integrated care delivery system through the regional implementation of seven IDNs (each serving approximately equal rates of Medicaid Beneficiaries with behavioral health disorders) in order to improve Beneficiaries' health while at the same time reducing the total cost of caring for this population. To achieve that goal, the NH DSRIP Demonstration deployed a number of strategies (Figure 2.3—1). These included:

1. **Workforce Capacity:** Increase community-based behavioral health service workforce capacity through the education, recruitment, and training of a professional, allied health, and peer workforce with knowledge and skills to provide and coordinate the full continuum of substance use and mental health services.

2. **Access:** Increase access to behavioral health care and appropriate community-based social support services throughout all of NH's regions.

3. **Technology:** Establish robust technology solutions to support care planning and management and information sharing among providers and community-based social support service agencies.

4. **Incentives:** Incentivize the provision of high-need services, such as medication-assisted treatment for SUDs, peer supports, and recovery services.

5. **Recovery Models:** Increase the state's use of evidence-based recovery models that will reduce unnecessary use of inpatient and emergency department (ED) services, hospital readmissions, and the cycling of justice-involved individuals between correctional settings and the community due to untreated behavioral health disorders.

6. **Integration:** Promote the integration of physical and behavioral health provider services in a manner that breaks down silos of care among primary care and behavioral health providers, following existing standards (i.e., State Innovation Model (SIM) planning process; SAMHSA-defined standards for Levels of Integrated Health Care).

7. **Care Transitions:** Enable coordinated care transitions for Beneficiaries in various care settings (e.g., CMHC, primary care, inpatient hospital, corrections facility, SUDs clinic, crisis stabilization unit) to ensure that the intensity level and duration of transition services are fully aligned with an individual's documented care plan.

8. **Alternative Payment Models (APMs):** Ensure that IDNs participate in APMs that move Medicaid payment from predominantly volume-based to primarily value-based payment over the course of the Demonstration period.

Throughout the Demonstration period, each IDN was required to implement six projects to address the needs of Medicaid Beneficiaries with behavioral health disorders. For each project, the IDNs were tasked with developing detailed plans and focused milestones. IDN project performance was assessed by DHHS based on milestones and metrics that tracked project planning, implementation progress, clinical quality and utilization indicators, and progress toward transition to APMs.

IDNs were expected to be made up of multiple community-based social service organizations including hospitals, county facilities, primary care providers, and behavioral health providers (both mental health and substance use disorder). These organizations were responsible for collaborating on the design and implementation of projects to build behavioral health capacity, promote integration of primary care and behavioral health, facilitate smooth transitions in care, and prepare for alternative payment models.

Figure 2.3—2: Map of IDN Regions in New Hampshire

IDN	Region
IDN1	Greater Monadnock, Greater Sullivan County, Upper Valley Region 29,493 attributed Beneficiaries
IDN2	Capital Area Region 19,057 attributed Beneficiaries
IDN3	Greater Nashua Region 25,486 attributed Beneficiaries
IDN4	Greater Derry, Greater Manchester Regions 49,256 attributed Beneficiaries
IDN5	Central NH, Winnipesaukee Regions 17,404 attributed Beneficiaries
IDN6	Strafford County, Seacoast Region 32,871 attributed Beneficiaries
IDN7	North Country, Carroll County Region 19,118 attributed Beneficiaries

Source: NH DHHS Dataset (2019). Total Beneficiaries attributed December 31, 2017.
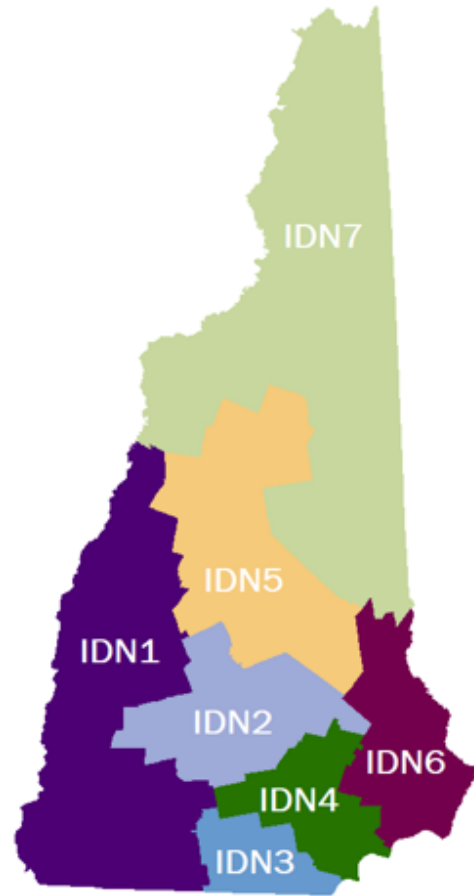
New Hampshire DHHS proposed seven (7) service regions for the DSRIP Demonstration (Figure 2.3—2), each comprised of one or more regional public health networks. The Demonstration sought to enable each IDN to improve care for Medicaid Beneficiaries with diagnosed and undiagnosed behavioral health conditions in and around its service region. IDNs were expected to provide support to their partners to facilitate the provision of a full spectrum of services and related social supports to address the complex care needs of Beneficiaries with behavioral health conditions. In order to assess IDN performance on Demonstration quality metrics and determine funding allocations, the Demonstration was designed so that each Medicaid Beneficiary was attributable to one IDN based on where they received care. More information on the IDN attribution is included in Section 4, Methodology.

2.4 Development of Integrated Delivery Networks

Under the DSRIP Demonstration, New Hampshire made process-based incentive payments to providers to form seven (7) regionally-based IDNs that serve Medicaid Beneficiaries through fee-for-service (FFS) or Medicaid Care Management (MCM) programs. Consistent with the NH DSRIP program's Centers for Medicare and Medicaid Services Special Terms and Conditions (STCs), these provider networks formed regional coalitions that then applied collectively for funds as a single IDN. The IDNs were intended to serve as the vehicle to foster partnerships between behavioral health providers and other health care providers within their region to achieve the state's vision for system transformation including establishing financial relationships, creating mechanisms for data sharing, and instituting formal business relationships between project partners. Specifically, per the STC, IDNs received incentive payments for their "performance on projects to increase integration across providers and community social service agencies; expand provider capacity; develop new expertise; and improve care transitions."[15] As mandated in the STCs, as part of the application process IDNs were to:

- Identify a proposed geographic catchment.

- Designate a lead applicant/provider (IDN Administrative Lead) and several partners. The Administrative Lead was responsible for ensuring all partners met the requirements of the IDN, including reporting to the state and CMS.

- Establish a clear business relationship between all providers within an IDN; develop a joint budget and funding distribution plan; and, establish methods for distributing funds.

- Implement a data agreement to share/manage data on IDN performance.

The IDN applications, approved by CMS and released by NH through a formal Request for Proposals (RFP) process in May 2016, allowed for flexible governance structure while requiring a primary governing body that reflected representation from organizations of various types within the IDN. At a minimum, the IDN Administrative Lead would maintain oversight over financial, clinical, data, and information technology governance, as well as community engagement. To be approved, an IDN needed to meet a threshold of at least 15,000 attributed Medicaid Beneficiaries, with at least 50% of attributed care provided as identified through claims analysis (as opposed to geographic location).

IDNs received approval in July 2016 (note, all starting points within the IDN Project Plans were required to be after January 1, 2017). In August 2016, NH DHHS approved the IDN contracts. In the following month, September 2016, the IDNs received their first payments (statewide total: $19.5M) and NH DHHS initiated its first monthly IDN meetings. There were four (4) IDN lead organization types: a hospital or its parent organization; a county administrator; a public health organization; and a not-for-profit Rural Health Network (Table 2.4-1).

Table 2.4-1: IDN Regions

IDN	Regions	Administrative Lead	Lead Organization Type
1	Greater Monadnock, Greater Sullivan County, Upper Valley Region	Mary Hitchcock Memorial Hospital	Hospital Facility
2	Capital Area Region	Concord Hospital	Hospital Facility
3	Greater Nashua Region	Southern New Hampshire Health	Parent org. for Hospital Facility
4	Greater Derry, Greater Manchester Regions	Catholic Medical Center	Hospital Facility
5	Central NH, Winnipesaukee Region	Lakes Region Partnership for Public Health	Public Health Organization
6	Strafford County, Seacoast Region	Strafford County	County Government
7	North Country, Carroll County Region	North Country Health Consortium	Non-profit Rural Health Network

Source: NH DSRIP Program Overview Documents

Per the STCs, the State not only developed and oversaw the application process for the IDNs but they hired an Independent Assessor to review and make recommendations on IDN project plans and their approval. The State was also mandated to establish statewide resources to support the IDNs. New Hampshire provided IDNs with technical assistance and the opportunity to participate in a learning collaborative designed to foster the sharing of lessons learned and help facilitate the spread of best practices across IDNs (Waiver Special Terms and Conditions [STC] 36.a.iv). As part of that effort, concurrently in the fall of 2016 while IDN implementation was initiated, meetings began for the Health Information Technology (HIT) Taskforce as well as the Workforce Taskforce.

2.5 Project Valuation

As mandated in the STC 29, IDNs earned payments for meeting performance milestones, specified in each IDN Project Plan, as outlined below.

  ◆ A maximum value for each project on the project menu was calculated based on valuation components (as specified by the IDN Program and Funding Mechanics Proposal).

  ◆ An IDN project's total valuation was distributed across the milestones in the IDN Project Plan, with an increasing proportion of IDN funding allocated to performance on outcome milestones each year of the Demonstration.

Throughout the Demonstration, the payment distribution of IDN reimbursements shifted from process-based measures to performance-based measures. In all years, the payment distribution was consistent for all IDNs. In 2016, incentive payments were 100% dependent on process measures. In 2017, they were 90% dependent on process measures with 10% tied to performance. In 2018, incentive payments were 25% dependent on performance measures and 75% dependent on process measures. In 2019, incentive payments were 100% dependent on performance measures.[16] From years 2018 to 2020 of the

Demonstration, a percentage of statewide funding was to be contingent on statewide performance metrics.[17]

A substantive goal of the Demonstration was for the State to transition, by the end of 2020, to move 50% of payments to Medicaid providers into alternative payment models (APMs). The APM roadmap was developed and outlined initial plans on how this movement would be initiated and completed.[18] Figure 2.5—1 below depicts how project valuations changed throughout the Demonstration. By 2020, the statewide care integration-focused Core Competency Project comprised 60% of IDN payment distributions.

Figure 2.5—1: Achievable Payment Distribution between Project Types
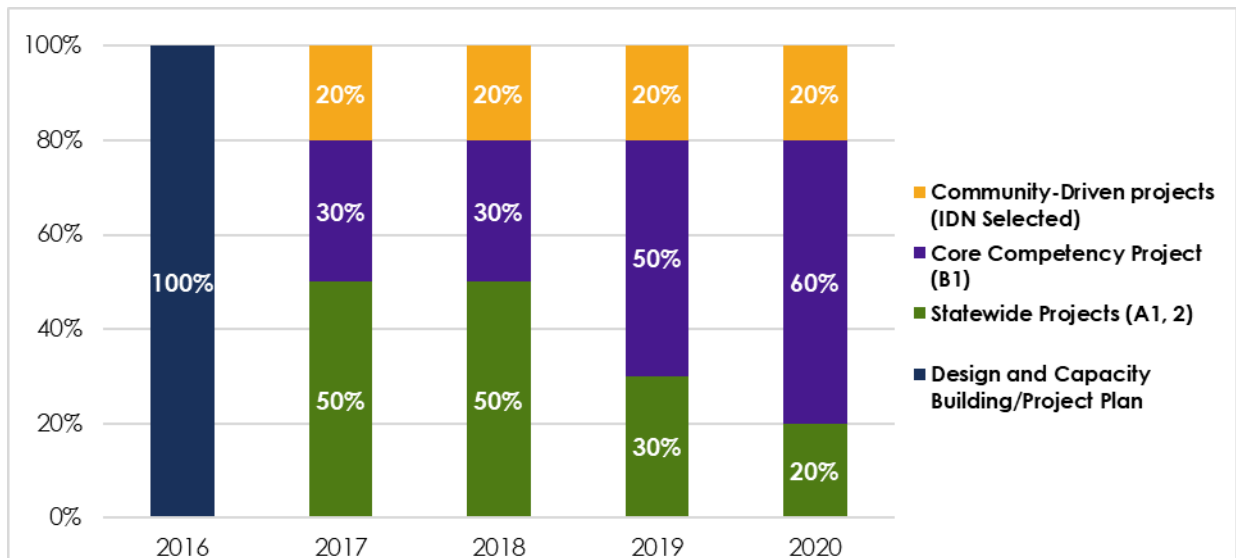
Image Source: NH DHHS, DSRIP Annual Report [Slide deck]; 2016.

2.6 DSRIP Funding and Life Cycle of 5-Year Demonstration

CMS funding mechanisms for New Hampshire DSRIP mandate that a gradual percentage of funding be at risk based on performance in the later years of the Demonstration. Total IDN funding is at risk if the state fails to demonstrate progress toward meeting the objectives of the Demonstration. The percentage at risk gradually increases from 0 percent in Demonstration Years (DY) 1-2 to five percent in DY 3, increasing to 10 and 15 percent in DYs 4, and DY 5, respectively. The maximum allowable for funds in each Demonstration Year, which are CY 2016-2020, is $30 million per year, making at-risk dollar amounts $1.5M for 2018, $3.0M in 2019, and $4.5M in 2020 (Table 2.6-1).

Table 2.6-1: DSRIP IDN Funding

	DY 1 01/01/16- 12/31/16	DY 2 01/01/17- 12/31/17	DY 3 01/01/18- 12/31/18	DY 4 01/01/19- 12/31/19	DY 5 01/01/20- 12/31/20*
Allowable DSRIP Funds: Maximum	$30M	$30M	$30M	$30M	$30M
Percent At-Risk Based on Performance	0%	0%	5%	10%	15%
Dollar Amount At-Risk for Performance	n/a	n/a	$1.5M	$3.0M	$4.5M

Source: Adapted from STC

*Demonstration Period-Pandemic; IDNs received payment based on 2019 performance metrics

Per the STCs, the outcome measures on which reimbursement became dependent were developed by New Hampshire in collaboration with DSRIP stakeholders. They were mandated to be statewide and measured progress towards the state's goal of enhanced behavioral health capacity, better integration of physical and behavioral health, and improving care transitions (Figure 2.6—1).

Due to the massive and unforeseen disruptions to health care and infrastructure during 2020 due to the COVID-19 pandemic, NH DHHS submitted an application to amend the DSRIP waiver to modify the reporting format and metrics that assess the IDNs for the purpose of qualifying for performance-based DSRIP payments. In June of 2020 CMS approved a modified program funding and mechanics protocol that allowed the state to score IDN performance for Year 5 of the Demonstration based upon their Year 4 (2019) performance, and pay them incentive payments based on 2019 performance. IDNs were not required to report on these metrics in 2020 to receive incentive payments.[19]

Figure 2.6—1: Funding Measures Timeline
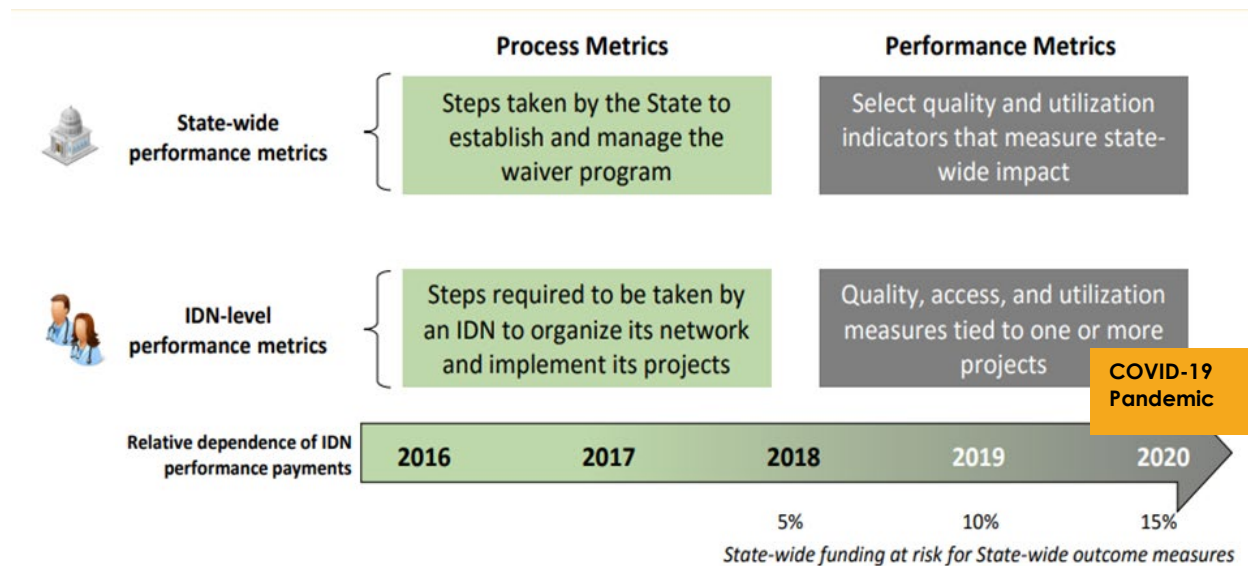
Image Source: NH DHHS, New Hampshire's DSRIP Waiver Program [Slide deck]; 2016.

2.7 Overview of Integration Delivery Network Demonstration Projects

Each IDN participated in two statewide projects (A1, A2); one mandatory core competency project (B1); and, three community-driven projects self-selected from a menu defined by DHHS (Figure 2.7—1).[16] Each IDN selected at least one project to be focused exclusively on the substance use disorder population.[9] IDN Project Plans were submitted to NH DHHS by October 31, 2016, and were approved on September 1, 2017.

Figure 2.7—1: IDN Demonstration Projects
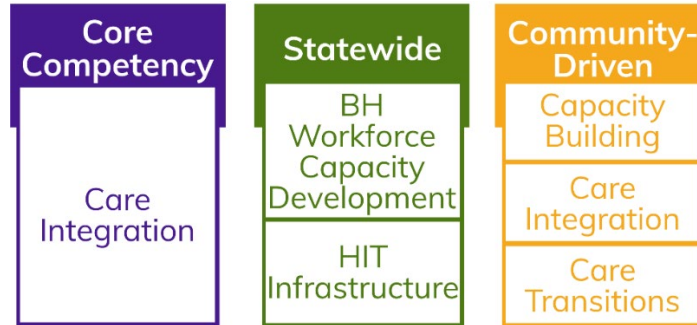
2.7.1 Statewide Projects

Each IDN was required to participate in and implement two Statewide Projects designed to address the following critical elements of New Hampshire's vision for transformation.

- **A1. Behavioral Health Work Force Capacity Development Project -**
  Goal: develop and increase capacity for a workforce equipped to provide high-quality, integrated care throughout the state.

- **A2. Health Information Technology Planning and Development Project -**
  Goal: establish an HIT infrastructure that allows for the exchange of information among providers and supports a robust care management approach for Beneficiaries with behavioral health disorders.

Table 2.7-1 below provides a summary of Demonstrations statewide projects.

Table 2.7-1: Demonstration Statewide Projects

	Project	Description
A1	Behavioral Health Workforce Capacity Development	This project and its associated taskforce largely targeted policy, billing/coding, education, and licensing strategies.[17] Its goal was to establish an enhanced community-based behavioral health service capacity through the education, recruitment, retention efforts and training of professional and peer workforce to provide comprehensive care for substance use disorder and mental health.[20]
A2	Health Information Technology (HIT) Infrastructure to Support Integration	This project was designed to increase the HIT ecosystem within the state to support care integration.[20] The initiatives of the A2 project included 1) implementing the Shared Care Plan, Secure Message Exchange, and Event Notification software packages, as well as 2) regularly submitting measures data to Massachusetts eHealth Collaborative for data aggregation.[21]

2.7.2 IDN Core Competency Project

In addition to the statewide projects, each IDN was also required to implement an Integrated Healthcare Core Competency Project (B1) to ensure that primary care, behavioral health, and social service needs were routinely and systematically addressed across care settings. The Core Competency Project was designed to establish systems that enabled providers to prevent as well as detect, diagnose, treat and manage behavioral and physical health disorders using established standards of care, while at the same time identifying and addressing social determinants of health. Table 2.7-2 below provides a description of the Demonstration Core Competency Project.

Table 2.7-2: Core Competency Project

	Project	Description
B1	Integrating Behavioral Health and Primary Care	The Demonstration required that all IDNs participated in a project focused on integrating behavioral health and primary care. IDNs dictated the mode of implementation in each community.[9] Through the project, the IDN facilitated partnership between primary care and behavioral health providers to integrate care for patients with behavioral health disorders, reflecting the highest possible levels of collaboration and integration as defined by SAMHSA's Levels of Integrated health care.[22] A goal in implementing this model was to better enable providers to prevent and detect, diagnose, treat and manage behavioral and medical disorders using the following care standards: • Universal screening - using Comprehensive Core Standardized Assessment (CCSA) framework

Project		Description
		• Software that promotes information sharing and care management, including integrated electronic medical records • Multidisciplinary care teams (MDCT) that provide care management, care coordination, and support for care transition

2.7.3 Community Driven Projects

The menu specified by DHHS for Community-Driven Projects was organized into three categories designed to facilitate the implementation of Demonstration goals. These categories leveraged NH DHHS' three different pathways to delivery system reform, depicted in Figure 2.7—2. Each IDN selected one project from each category. The flexibility of the selection process allowed IDNs to pursue initiatives *"reflective of community-specific priorities identified through a behavioral health needs assessment and community engagement, to change the way that care is provided in a variety of care delivery settings and at various stages of treatment and recovery for sub-populations, and to use a variety of approaches to change the way care is delivered."[22]* These projects were designed to facilitate the adoption of care models that offered a full spectrum of services for Beneficiaries who were at risk for, currently undiagnosed, or had an active behavioral health disorder(s).[22]

Figure 2.7—2: Project Pathways to Delivery System Reform,
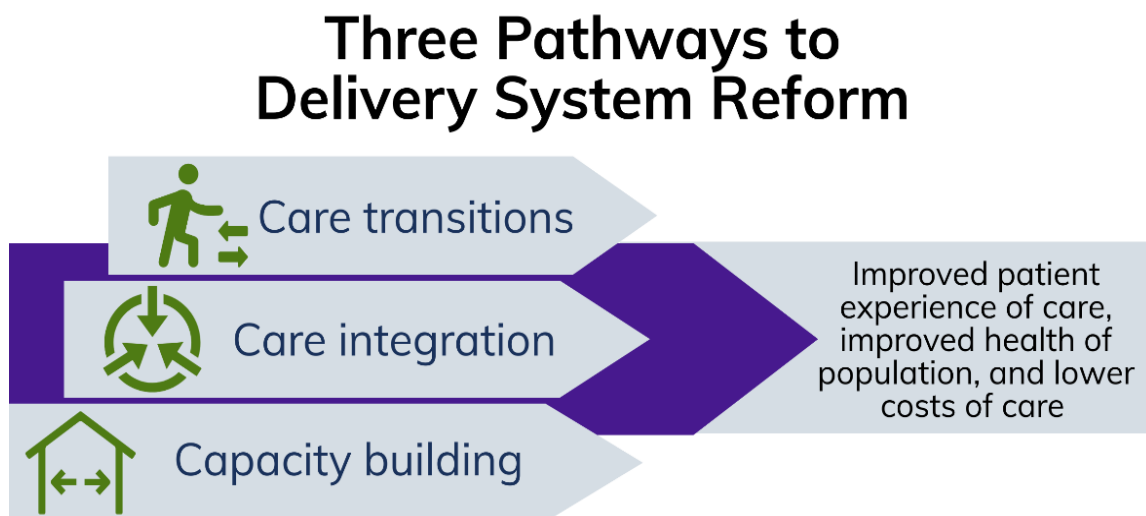
Information Source: NH DHHS (2016), New Hampshire's DSRIP Waiver Program [Slide deck]

Care transition projects (C1, C2) supported the development of systems to support Medicaid Beneficiaries transitioning from institutional settings to the community or between organizations in the community by incentivizing provider collaboration and the adoption of evidence-based practices to support the behavioral health care needs of Beneficiaries.

Care integration projects (E1, E5) were designed to promote provider integration and collaboration between primary care, behavioral health care and community services by supporting physical and virtual integration, expanding programs that foster collaboration, and promoting integrated care delivery strategies that incorporate community-based social support providers.

Mental Health and SUD treatment capacity-building projects (D1, D3) were designed to support treatment capacity and supplement workforce in all settings. Projects might have

developed workforce initiatives, new intervention programs, or implement alternative care delivery models. Table 2.7-3 outlines the Community-Driven projects.

Table 2.7-3: Community-Driven Projects

	Project	Description/Project Goal(s)
Care Transitions Projects		
C1	Care Transitions	This was a time-limited care transition program led by a multidisciplinary team that follows the 'Critical Time Intervention' (CTI) approach to providing care at staged levels of intensity, to support patients with serious mental illness during transitions from hospital settings to the community.
C2	Community Re-entry Program for Justice-Involved Adults and Youth with SUD or Significant Behavioral Health Issues	Research indicated that significant numbers of adults in correctional facilities and youth in juvenile justice residential facilities had diagnosed and undiagnosed mental illness and/or substance use disorders. Community re-entry was a time-limited program to assist those individuals with behavioral health conditions to safely transition back into community life. The program was initiated pre-discharge and continued for 12 months post discharge. The program's objectives were to: (1) Support adults and youth leaving the state prison, county facilities or juvenile justice residential facilities who have behavioral health issues (mental health and/or substance misuse or substance use disorders) in maintaining their health and recovery as they return to the community. (2) Prevent unnecessary hospitalizations and ED usage among these individuals by connecting them with integrated primary and behavioral health services, care coordination and social and family supports.
Care Integration Projects		
E4	Integrated Treatment for Co-Occurring Disorders	Individuals with serious mental illness (SMI) or serious emotional disturbances (SED) commonly experience obesity, tobacco addiction, and other risk factors for the development of diabetes, heart and blood vessel diseases, and cancers leading to high disease burden and early mortality. This project involved the implementation of wellness programs to address physical activity, eating habits, smoking addiction, and other social determinants of health for adolescents with SED and adults with SMI through evidence-informed interventions, health mentors/coaches. These programs were aimed at reducing risk factors and disease burden associated with co-morbid chronic diseases, as well as reductions in preventable hospitalizations and Emergency Room visits.
E5	Enhanced Care Coordination for High Needs Population	Goal: Develop comprehensive care coordination/management services for high-need adult and child populations with multiple physical health and behavioral health chronic conditions. These services were

	Project	Description/Project Goal(s)
		intended to maintain or improve an individual's functional status, increase that individual's capacity to self-manage their condition, eliminate unnecessary clinical testing, address the social determinants creating barriers to health improvement, and reduce the need for acute care services.
Capacity Building Projects		
D1	Medication Assisted Treatment	Implement evidence-based programs combining behavioral and medication treatment for people with substance use disorders, with or without co-occurring chronic medical and/or mental health conditions. IDNs selecting this project would increase access to MAT programs through multiple settings, including primary care offices and clinics, specialty office-based ("stand alone") MAT programs, traditional addiction treatment programs, mental health treatment programs, and other settings. The goal was to successfully treat more individuals with substance use disorders, and for some people struggling with addiction, help sustain recovery.
D3	Expansion in Intensive SUD Options	Expand capacity within an IDN for delivery of partial intensive outpatient, partial hospital, or residential treatment options for SUD, in conjunction with expansion of lower acuity outpatient counseling. These services were intended to result in increased stable remission of substance misuse, reduction in hospitalization, reduction in arrests, and decrease in psychiatric symptoms for individuals with co-occurring mental health conditions.

Source: NH DHHS (2017) IDN Semi-Annual Report; NH DHHS (2018) Quarterly Report; DSRIP 2019 Annual Update

Table 2.7-4 Identifies which of the following IDNs were pursuing which of the Community-driven projects.

Table 2.7-4: DSRIP Community-Driven Projects by IDN

	Project Name	IDN1	IDN2	IDN3	IDN4	IDN5	IDN6	IDN7
Care Transitions	Care Transitions (C1)	●		●	●		●	●
Care Transitions	Community-Entry Programs for Justice-Involved Individuals with BH Issues (C2)		●			●		
Care Integration	Integrated Treatment for Co-Occurring Disorders (E4)			●	●			
Care Integration	Enhanced Care Coordination for High Needs Population (E5)	●	●			●	●	●
Capacity Building	Medication Assisted Treatment (D1)		●					
Capacity Building	Expansion in Intensive SUD Treatment Options (D3)	●		●	●	●	●	●

Source: NH DHHS Quarterly Reports (2018), IDN Semi-Annual Reports (2018-2020)

2.8 Demonstration Timeline

Figure 2.8—1 shows the timing of implementation of the NH DSRIP Demonstration, highlighting key reporting and incentive payment periods. Demonstration years align with calendar years, 2016-2020.

Figure 2.8—1: Demonstration Administrative Timeline
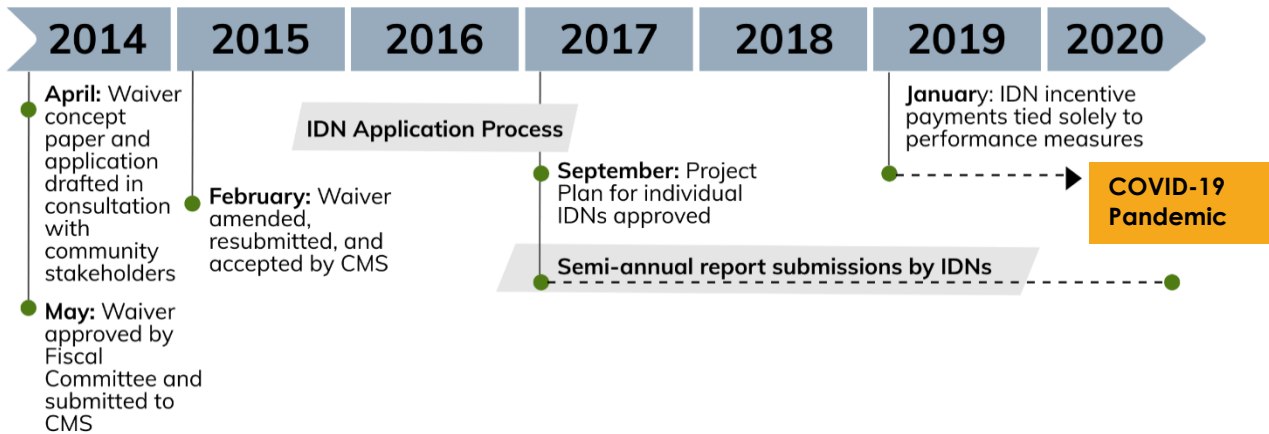
3. New Hampshire DSRIP Evaluation Study Design

3.1 Overview of Independent Evaluation

The NH DSRIP Demonstration included a robust mixed-methods evaluation implemented by an experienced team of health services researchers and evaluators from Catherine E. Cutler Institute (Cutler Institute) at the University of Southern Maine. The evaluation included a strong public health perspective that applied a population health model ideal for evaluating the health and systems-level outcomes of the Demonstration. The evaluation design implemented by the independent evaluator was approved by CMS in August 2017 as required by the STC.

Implementation of any multi-level, multi-sector intervention is challenging because it requires significant buy-in from a diverse group of stakeholders as well as the coordination of a variety of activities across multiple settings. To ensure that the independent evaluation gained a robust and multi-dimensional understanding of the Demonstration, a mixed-methods design was used to conduct process and outcome evaluations to document and examine ongoing planning and implementation strategies (Interim Report), and in the Summative Report, further examine if these approaches enhanced state infrastructure, reduced barriers to access, improved patient outcomes, and promoted sustainability of alternative payment models (see Figure 3.1—1 for evaluation logic model). The primary goals of the independent evaluation were to:

- document implementation strategies and identify barriers and facilitators to implementation;

- assess the effectiveness of Demonstration activities at increasing the state's infrastructure and capacity to address behavioral health disorders among Medicaid Beneficiaries;

- evaluate the impact of the Demonstration strategies on increasing access and quality of care;

- examine the impact of the Demonstration strategies on service utilization and costs; and,

- examine if and how the Demonstration strategies impacted the physical and behavioral health outcomes of Beneficiaries in New Hampshire.

Figure 3.1—1. New Hampshire DSRIP Demonstration Overall Evaluation Logic Model
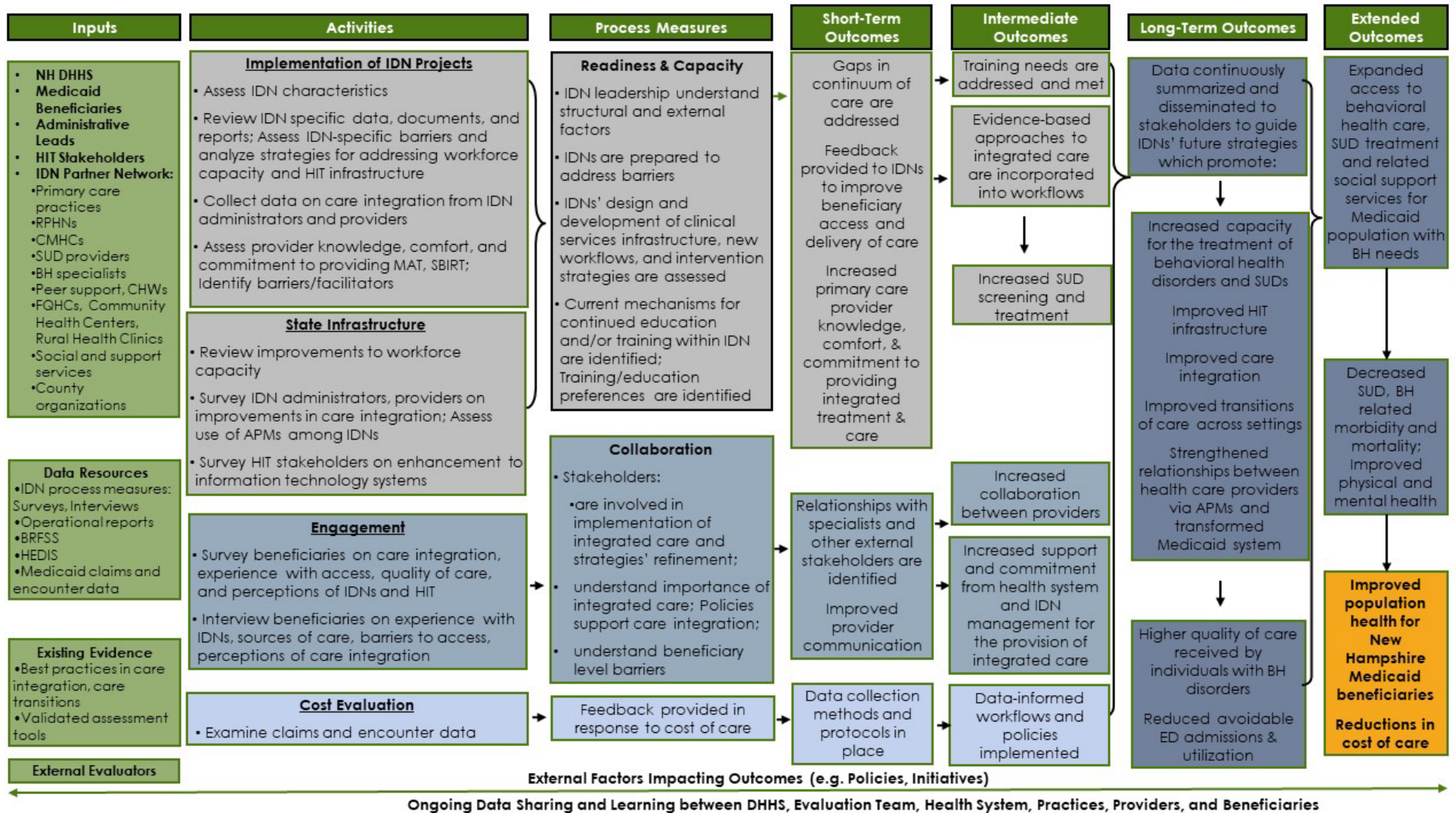
3.2 Overview of Research Questions

The DSRIP Demonstration evaluation was guided by five overarching research questions and corresponding hypotheses designed to explore the effectiveness of the Demonstration through a set of short-term and intermediary performance measures collected at appropriate times throughout the Demonstration period.

- **Research Question 1:** Was the DSRIP Demonstration effective in achieving the goals of better care for individuals (including access to care, quality of care, health outcomes), better health for the population, or lower cost through improvement? Was there any variation between IDNs/geographic regions/market areas? To what degree can improvements be attributed to the activities undertaken under DSRIP?

- **Research Question 2:** To what extent has the DSRIP Demonstration improved integration and coordination between providers? To what extent has the DSRIP Demonstration fostered the bi-directional and integrated delivery of physical health services, behavioral health services, SUD services, transitional care, and alignment of care coordination to serve the whole person? Was there any variation between IDNs/geographic regions/market areas?

- **Research Question 3:** To what extent has the DSRIP Demonstration improved the capacity of the state's behavioral health workforce to provide quality, evidence-based, integrated care?

- **Research Question 4:** To what extent has the DSRIP Demonstration enhanced the state's health IT ecosystem to support delivery system and payment reform? Have changes to the HIT ecosystem brought about by the DSRIP Demonstration specifically enhanced the IDNs concerning the following four key areas: governance, financing, policy/legal issues and business operations?

- **Research Question 5:** To what extent has the DSRIP Demonstration improved the IDNs' readiness to transition to or implement Alternative Payment Models (APMs)? Are IDNs making adequate preparations in data infrastructure, financial infrastructure, and other required changes needed to achieve the goal of 50% of Medicaid provider payments to providers using APMs by the end of the Demonstration period? Have the IDNs engaged with the state and managed care plans in support of that goal?

3.3 Research Questions and Hypotheses by Domain

The Cutler Institute examined the research questions defined in the CMS approved evaluation plan by assessing the 12 corresponding research hypotheses outlined below (Table 3.3-1).[i] Because a number of the research questions address a variety of goals and some metrics are relevant to multiple research questions, hypotheses were organized into the following seven key domains: infrastructure development, access to care, quality of care,

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[i] Changes from the CMS approved evaluation plan are listed in Appendix E.

integration of care, service utilization, cost of care, and population health. Each research question and corresponding hypothesis, described below, included one or more evaluation measures. The methods used to test the hypotheses and answer the research questions are described in detail in the Methodology Section of the report (Section 4). The source of data and technical specifications for the measures are described in Appendix A.

Table 3.3-1: Evaluation Domains of Research Questions and Hypotheses

Domains:	Infrastructure Development	Access to Care	Quality of Care	Integration of Care	Service Utilization	Cost of Care	Population Health
Research Question 1: Was the DSRIP Demonstration effective in achieving the goals of better care for individuals (including access to care, quality of care, health outcomes), better health for the population, or lower cost through improvement? Was there any variation between IDNs/geographic regions/market areas? To what degree can improvements be attributed to the activities undertaken under DSRIP?							
Hypothesis 1.1 Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.		▓	▓		▓		
Hypothesis 1.2 Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area.		▓					
Hypothesis 1.3 Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.							▓
Hypothesis 1.4 The total cost of care will be lower for Medicaid Beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs are operating regardless of IDN, geographic location, or market area.						▓	
Hypothesis 1.5 The rate of avoidable hospital re-admissions for individuals within IDNs with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.					▓		

Domains:	Infrastructure Development	Access to Care	Quality of Care	Integration of Care	Service Utilization	Cost of Care	Population Health
Hypothesis 1.6 The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.					███		
Hypothesis 1.8 The average length of stay for inpatient psychiatric care at New Hampshire Hospital (NHH, NH's state run psychiatric facility) will be lower at the end of the Demonstration than prior to the Demonstration, as options for community-based care increase regardless of IDN, geographic location, or market area.					███		
Hypothesis 2.1 Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.				███			
Research Question 3: To what extent has the DSRIP Demonstration improved the capacity of the state's behavioral health workforce to provide quality, evidence-based, integrated care?							
Hypothesis 3.1 Capacity to deliver evidenced-based behavioral health treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.	███						

Domains:	Infrastructure Development	Access to Care	Quality of Care	Integration of Care	Service Utilization	Cost of Care	Population Health
Research Question 4: To what extent has the DSRIP Demonstration enhanced the state's HIT ecosystem to support delivery system and payment reform? Have changes to the HIT ecosystem brought about by the DSRIP Demonstration specifically enhanced the IDNs in regard to the following four key areas: governance, financing, policy/legal issues and business operations?							
Hypothesis 4.1 HIT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.	▓						
Hypothesis 4.2 HIT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for Beneficiaries with behavioral health disorders.				▓			
Research Question 5: To what extent has the DSRIP Demonstration improved IDNs' readiness to transition to or implement Alternative Payment Models (APMs)? Are IDNs making adequate preparations in data infrastructure, financial infrastructure, and other required changes needed to achieve the goal of 50% of Medicaid provider payments to providers using APMs by the end of the Demonstration period? Have the IDNs engaged with the state and managed care plans in support of that goal?							
Hypothesis 5.1 DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.	▓						

3.4 Evaluation Framework

Adopting the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework as a method to frame evaluation questions and corresponding hypotheses,[23,24] the independent evaluation of the NH DSRIP Demonstration was designed to build knowledge and provide valuable feedback to help inform the implementation process. Evaluation activities, also rooted in the RE-AIM framework, were designed to assess potential public health impacts as well as the possibility for dissemination of intervention models. This evaluation used the RE-AIM framework to examine the *reach* (striving for representative and population-based interventions), *effectiveness* in practice and community settings, as well as effective models for integration and care coordination that can be easily *adopted, implemented*, and *maintained* over time in varied settings.[20] The framework is particularly well suited for this evaluation because of its emphasis on understanding the roles of reach and effectiveness of programs, as well as the importance of understanding the implementation processes and sustainability of care delivery networks and alternative payment models that address the needs of Medicaid Beneficiaries with complex health care needs.

The major components of the evaluation framework included: describing programs (capturing barriers and facilitators), gathering evidence (collecting data and calculating measures), summarizing and justifying conclusions (quantitative and qualitative data analysis), and disseminating lessons learned (evaluation reports).

Figure 3.4—1: Evaluation Approach
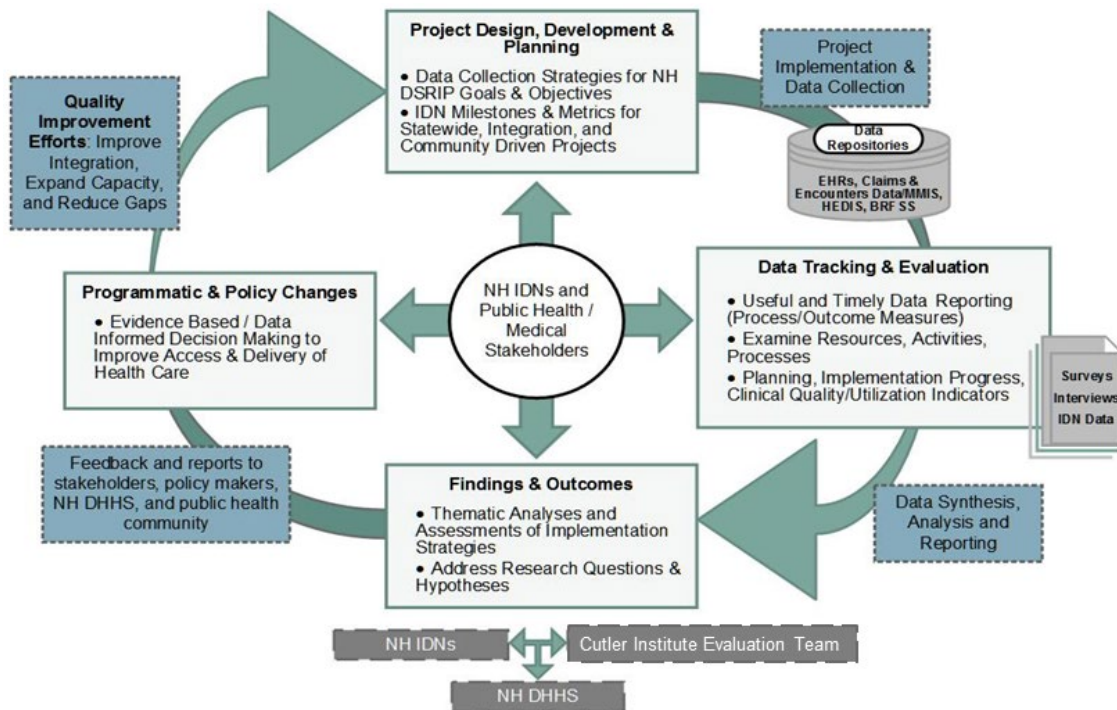
The NH DSRIP evaluation included a strong public health perspective ideal for evaluating systems, networks and Beneficiary-level outcomes. In addition, Quality Improvement (QI) tools and techniques, in tandem with more traditional evaluation methods, were applied throughout the Demonstration to examine the progress and effectiveness of implementation activities allowing for the early identification of opportunities for improvement. Ongoing data collection and feedback ensured that the evaluation captured implementation strategies and documented IDN activities, key metrics and milestones, as well as in-depth information that could be used to answer specific research questions and provide actionable feedback to key stakeholders (Figure 3.4—1).

3.5 Study Group and Comparison Group

The total possible study group for this evaluation included all New Hampshire Medicaid fee-for-service and Medicaid Care Management Program Beneficiaries with full Medicaid benefits, both children and adults, who had a documented mental health disorder and/or a substance use disorder. Given that brief periods of enrollment were less likely to have a significant impact on Beneficiaries' outcomes, only Beneficiaries who were continuously enrolled in the Medicaid program for ten months or longer during each year of the evaluation period were included in the study group. In addition, some of the evaluation outcome measures had additional enrollment criteria as described in the measures specifications. As indicated in the CMS-Approved Evaluation, all Beneficiaries with a behavioral health and/or a substance use disorder(s) are attributed to an IDN so this evaluation does not include a direct comparison group. In an effort to address this methodological challenge, the Demonstration evaluation uses a pre-post design which compares eligible Beneficiaries before and after program implementation. The comparison population includes New Hampshire Medicaid fee-for-service and Medicaid Care Management Program Beneficiaries; both children and adults, who have had a behavioral health disorder and/or a substance use disorder with full Medicaid benefits in the three years prior to the implementation of the Demonstration. For more detailed information on the study group and comparison group, including inclusion and exclusion criteria, please refer to the overview of the pre-post study design in the methodology section.

3.6 Evaluation Data Sources and Measures

The evaluation includes a mixed-methods design utilizing data from multiple sources to comprehensively evaluate the DSRIP Demonstration research hypotheses. These data include administrative data (e.g., Medicaid claims and encounter data), survey and in- depth interview data collected specifically for this evaluation, as well as documentation provided by the IDNs in quarterly operational and semi-annual reports. Given the wide scope of the evaluation, the measures selected by NH DHHS capture a broad range of topics including: health outcomes, cost reduction, access to care, integration of care, care coordination (particularly around transitions of care), consumer satisfaction, and infrastructure development (workforce, HIT, payment models). The study measures are organized by domains to tie them more closely to hypotheses and research questions in the evaluation plan. For example, Research Question 1, Hypothesis 1.1 has been broken into three domains: access to care, quality of care, and utilization. Below is an overview of the

evaluation measures by key domain with corresponding information on the data source and type.

3.6.1 Infrastructure Development Data Sources and Measures

Workforce development, HIT, and payment models are all major components of healthcare infrastructure. An issue brief by Commonwealth Fund describes three essential components for integration of health services, especially for Medicaid Beneficiaries, which include: (1) a coordinating mechanism; (2) quality measurement and data-sharing tools; and, (3) aligned financing and payment.[25] The Demonstration is designed to address these components through their capacity building efforts. Measures under the domain of *Infrastructure Development and Capacity Building* are part of the implementation/process and outcomes evaluation; they examine key areas of interest including HIT enhancements, workforce development and APMs (Table 3.6-1).

Table 3.6-1: Infrastructure Development

	Measure Name	Data Source	Data Source Type
Hypothesis 3.1			
3.1.1	Size and Training of the Provider Network	IDN Documents	Administrative
Hypothesis 4.1			
4.1.1	Enhancements to the HIT System	Survey, IDN Documents	Survey, Administrative
4.1.2	Perceptions of the Enhanced HIT System	Key Stakeholder Interviews	Qualitative
4.1.3	Perceptions of the Usability and Utility of the Enhanced HIT System	Key Stakeholder Interviews	Qualitative
4.2.3	Perceptions of Improved Information Exchange	Key Stakeholder Interviews	Qualitative
Hypothesis 5.1			
5.1.1	Transitioning to Alternative Payment Models	IDN Documents	Administrative
5.1.2	Experiences Transitioning and Implementing APMs	Key Stakeholder Interviews	Qualitative

3.6.2 Access to Care Data Sources and Measures

Medicaid Beneficiaries with behavioral health conditions often experience barriers to accessing medical care and treatment. Key barriers include shortage of mental health providers, stigma, and lack of mental health education and awareness.[26-28] Financial barriers also prevent many from obtaining needed mental health care.[29-31] Measures under the domain of *Access to Care* are designed to examine the ease with which Beneficiaries in NH can obtain needed medical services for behavioral or physical health conditions (Table 3.6-2).

Table 3.6-2: Access to Care Measures

	Measure Name	Data Source	Data Source Type
Hypothesis 1.1			
1.1.12	Cervical Cancer Screening	BRFSS	Administrative
1.1.13	Breast Cancer Screening	Medicaid Claims and Encounters	Administrative
1.1.14	Colorectal Cancer Screening	BRFSS	Administrative
1.1.15	Cholesterol Screening	Medicaid Claims and Encounters	Administrative
1.1.16	Adolescent Well-care Visit	Medicaid Claims and Encounters	Administrative
Hypothesis 1.2			
1.2.1	Beneficiary Experiences of Accessing Care	Key Stakeholder Interviews	Qualitative
1.2.3	Annual Primary Care Visit	Medicaid Claims and Encounters	Administrative
1.2.3	Annual Primary Care Visit- ages 12-19	Medicaid Claims and Encounters	Administrative
1.2.4	Behavioral Health Care Visits	Medicaid Claims and Encounters	Administrative
1.2.5	Substance Use Treatment Services	Medicaid Claims and Encounters	Administrative
1.2.6	Adolescent Well-care Visit	Medicaid Claims and Encounters	Administrative

3.6.3 Quality of Care Data Sources and Measures

In their influential work on quality of care, the Institute of Medicine provides six aims for healthcare as safe, effective, timely, efficient, equitable, and people-centered[32] and further defines quality as "the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[33] Measures under the *Quality of Care* domain examine the extent to which health care services provided to individuals and patient populations improve desired health outcomes (Table 3.6-3).

Table 3.6-3: Quality of Care Measures

	Measure Name	Data Source	Data Source Type
Hypothesis 1.1			
1.1.1	Experiences of Health Care with DSRIP	Key Stakeholder Interviews	Qualitative
1.1.2	Antidepressant Medication Management	Medicaid Claims and Encounters	Administrative
1.1.3	Follow-Up After Hospitalization for Mental Illness	Medicaid Claims and Encounters, NH Hospital Discharge for non-claim	Administrative
1.1.4	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	Medicaid Claims and Encounters	Administrative
1.1.5	Adherence to Antipsychotic Medications for Individuals with Schizophrenia	Medicaid Claims and Encounters	Administrative
1.1.6	Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications	Medicaid Claims and Encounters	Administrative
1.1.7	Diabetes Screening for People with Diabetes and Schizophrenia	Medicaid Claims and Encounters	Administrative
1.1.8	Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia	Medicaid Claims and Encounters	Administrative
1.1.9	Follow-up Care for Children Prescribed ADHD Medication	Medicaid Claims and Encounters	Administrative
1.1.10	Metabolic Monitoring for Children and Adolescents on-Antipsychotics	Medicaid Claims and Encounters	Administrative
1.1.11	Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics	Medicaid Claims and Encounters	Administrative
1.1.20	Use of Opioids at High Dosage	Medicaid Claims and Encounters	Administrative

3.6.4 Integration of Care Data Sources and Measures

SAMHSA defines integrated care as the systematic coordination of general and behavioral healthcare, characterized by a high degree of collaboration and communication among health professionals.[34] Measures under the *Integration of Care* domain examine the extent to which DSRIP Demonstration activities foster care integration, coordination, and transitions across providers (Table 3.6-4).

Table 3.6-4: Integration of Care Measures

	Measure Name	Data Source	Data Source Type
Hypothesis 2.1			
2.1.1	Fragmented Care	Medicaid Claims and Encounters	Administrative
2.1.5	Receipt of Necessary Care Composite Score	CAHPS® Survey	Surveys
2.1.6	Timely Receipt of Health Care Composite Score	CAHPS®/QHP Experience of Care Survey	Administrative
2.1.7	Care Coordination Composite Score	CAHPS®/QHP Experience of Care Survey	Administrative
2.1.8	Behavioral Health Composite Score	CAHPS®/QHP Experience of Care Survey	Administrative
2.1.9	Mental Illness Hospitalization Follow-Up (7 days)	Medicaid Claims and Encounters, NH Hospital Discharge for non-claim	Administrative
2.1.10	Mental Illness Hospitalization Follow-Up (30 days)	Medicaid Claims and Encounters, NH Hospital Discharge for non-claim	Administrative
2.1.11	Mental Illness Emergency Department Visit Follow-Up (30 days)	Medicaid Claims and Encounters	Administrative
2.1.12	Alcohol/Drug Dependence Emergency Department Visit Follow-Up (30 days)	Medicaid Claims and Encounters	Administrative
2.1.13	Ratings of Improvement in Care Coordination and Integration	Surveys	Surveys
2.1.14	Patient Experiences of Care Integration and Coordination	Key Stakeholder Interviews	Qualitative
2.1.15	Practice and Provider Experiences of Care Integration and Coordination	Key Stakeholder Interviews	Qualitative
Hypothesis 4.2			
4.2.1	Care Coordination Composite Score	CAHPS®/QHP Experience of Care Survey	Administrative
4.2.2	Ratings of Improvement in Care Coordination and Integration	Surveys	Surveys

3.6.5 Service Utilization Data Sources and Measures

The *Service Utilization* domain uses relevant measures to describe and track Beneficiaries' use of services for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis.

Table 3.6-5: Service Utilization Measures

	Measure Name	Data Source	Data Source Type
Hypothesis 1.1			
1.1.18	Emergency Department (ED) Visits	Medicaid Claims and Encounters	Administrative
1.1.19	Potentially Preventable Emergency Department (ED) Visits	Medicaid Claims and Encounters	Administrative
Hypothesis 1.5			
1.5.1	Hospital Readmission for Any Cause	Medicaid Claims and Encounters	Administrative
1.5.2	Hospital Readmission for Behavioral Health Disorder	Medicaid Claims and Encounters	Administrative
Hypothesis 1.6			
1.6.1	Hospital Admission for Ambulatory Care Sensitive Admission for Those with Behavioral Health Disorders	Medicaid Claims and Encounters	Administrative
Hypothesis 1.8			
1.8.1	Length of Stay for Inpatient Psychiatric Care	Medicaid Claims and Encounters, NH Hospital Discharge for non-claim	Administrative

3.6.6 Population Health Data Sources and Measures

While the DSRIP Demonstration goals emphasize improving access and quality of care for Medicaid Beneficiaries, the Demonstration also aims to enhance local delivery systems and address the overall population health priorities of the state.[35] Measures under the domain of *Population Health* examine Demonstration strategies for addressing public health priorities as well as the corresponding improvements in population health indicators (Table 3.6-6).

Table 3.6-6: Population Health Measures

	Measure Name	Data Source	Data Source Type
Hypothesis 1.3			
1.3.1	Strategies to Improve Population Health	Key Stakeholder Interviews	Qualitative
1.3.2	Improvements in Population Health	BRFSS	Administrative

3.6.7 Cost of Care Data Sources and Measures

Measures under the domain of *Cost of Care* examine the health care expenditures associated with providing care to Beneficiaries (Table 3.6-7). Recent research examining the use of alternative payment methodology to support cost savings and promote the financial sustainability of integrating care models found that non-FFS payments for behavioral health services integrated into primary care may provide significant cost savings for public payers (e.g., Medicaid).[36]

To examine the impact of DSRIP on costs, multivariate analyses of standardized per member per month costs over time were conducted. Analyses were conducted for total overall costs and for various subcategories of costs. Costs from NH paid medical and pharmacy claims were included, dental claims were excluded from the analysis.

Data for the costs analyses were compiled from administrative claims and encounter data files received from NH Medicaid in 2 formats:

1. **Medicaid Claims data** – Medicaid claims includes both fee-for-service (FFS) and encounter claims for the study period. Medicaid managed care started January 1, 2014, prior to this date all data are FFS claims. Claims for 2014 onward are a mixture of FFS and encounter data. Medical and Pharmacy claims are included. Dental claims were excluded.
2. **PAP claims data** – Medical and Pharmacy encounter claims data for the Premium Assistance Program (PAP) were received for calendar years 2014-2018. PAP claims data were provided in a different format from the regular Medicaid claims data. PAP claims were translated into a consistent format with the Medicaid claims data to create the analytic data files.

See section 4.2 for more detailed descriptions of these data.

Similar to the aggregation of performance measures, cost data were aggregated based on incurred date of service to the member study year level. Costs data were categorized based on provider type, bill types, revenue and procedure codes into the various cost measures shown in Table 3.6-7. Standard algorithms employed in health care measures development were used to identify inpatient and emergency department (ED) services. Additionally, primary diagnosis on the claims was used to further categorize behavioral health related

inpatient and ED services. The list of diagnosis codes used in the NH IDN assignment algorithm, provided by NH Medicaid, was used.

All costs were standardized using the medical consumer price index to 2016 dollars, the start year of the DSRIP program. Standardized costs are presented as per member month costs, adjusting for the number of months members were enrolled with full Medicaid benefits in the study year.

Costs analyses are limited to the study population of members with 10 or more months of eligibility in the study year. Bivariate analysis includes all Beneficiaries with 10 or more months full Medicaid coverages. With the exception of total costs, two-step analyses are performed first predicting the likelihood of service use, with cost regressions limited to users of the service.

Table 3.6-7: Cost of Care Measures

	Measure Name	Data source/Criteria
1.4.1	Total Costs of Care	All Medicaid medical and pharmacy costs from paid claims. Does not include dental. Includes cost not otherwise categorized in table below.
1.4.2	Total Cost of All Inpatient Care	Acute inpatient paid claims based on HEDIS® Inpatient Utilization algorithm
1.4.3	Total Cost of All Outpatient Care	Outpatient paid claims based on HEDIS® ambulatory care algorithm – outpatient visits
1.4.4	Total Cost of Emergency Department Care	Outpatient paid claims based on HEDIS® ambulatory care algorithm – ED visits
1.4.5	Total Cost of Behavioral Health Care	All Medicaid medical costs from paid claims for Inpatient behavioral health, Outpatient behavioral health and Non-acute inpatient stays with behavioral health diagnosis.
1.4.6	Total Cost of Outpatient Behavioral Health Care	Outpatient behavioral health costs based on HEDIS® mental health utilization measure outpatient criteria.
1.4.7	Total Cost of Inpatients Behavioral Health Care	Acute inpatient paid claims based on HEDIS® Inpatient Utilization algorithm with primary behavioral health diagnosis
1.4.8	Total Cost of Emergency Department Behavioral Health Care	Outpatient paid claims based on HEDIS® ambulatory care algorithm – ED visits with primary behavioral health diagnosis

3.7 Interpretation of Measures, Hypotheses, and Waiver Goals

Each measure was examined to determine whether it supported its associated hypothesis. There were three possible criteria for whether a measure supported a hypothesis.

➤ **Yes** – *the analysis fully supports the hypothesis.* For the Medicaid claims-based measures, a measure analysis fully supports the hypothesis that there was significant change in the Demonstration period. For the process measures using qualitative data, the analysis supports the hypothesis that there were strong indicators of positive change from the majority of stakeholders and, if applicable, they were supported by documentation/reporting.

➤ **Partially Supported**– *the analysis partially supports the hypothesis or there was mixed feedback from stakeholders on the measure.* For example: there may have been positive change during the Demonstration Pandemic period (2020), but not during the Demonstration period (2016-2019), the population overall had worse outcomes during the Demonstration period but the behavioral health population had a better outcome compared to the non-behavioral health outcome, the unmatched behavioral health population saw a positive outcome while the matched population did not, or qualitative had mixed or conflicting results. Partially supported results indicate a mixed result and should be interpreted with caution.

➤ **No** – *the analysis does not support the hypothesis.* Significant changes were not seen through analysis and/or qualitative data did not support the measure.

If the majority of measures were rated as "Yes" or "Partially Supported," then the hypothesis was supported by analysis. If the majority of hypotheses under a research question were supported by analysis, the Evaluation determined that the waiver goal was met.

3.8 Evaluation Period

The analysis for many of the quantitative measures included a pre-post test design, which compared rates and outcomes in two periods: a baseline period and an evaluation period. The baseline period was the period prior to implementation of the NH DSRIP Demonstration. The evaluation period was used to assess the impact of the NH DSRIP Demonstration. Qualitative and survey data on the process outcomes will include findings from both "baseline" and "demonstration" periods. Table 3.8-1 below details the evaluation periods for the summative evaluation and shows by data source what is presented in the summative report.

Table 3.8-1: Evaluation Period Data Included in Summative Report

Data Source	Baseline Period	Demonstration Period
Administrative	January 2013 to December 2015	January 2016 to December 2020
NH BRFSS	2014	2017 - 2019
Beneficiary Experience Survey	2019 Administration	2020 + 2021 Administrations
Stakeholder Surveys	April - November 2019: Wave 1	April-July 2021: Wave 2
Interviews	August - November 2019	April-September 2021
IDN Data	N/A – Trending over time	

4.   Methodology

4.1   Implementation and Process Evaluation

The summative evaluation focuses on documenting the factors external and internal to the IDNs that may have influenced implementation. The internal factors will include documenting and comparing implementation tactics within and across IDN sites and evaluating strategies used to overcome barriers to delivering integrated care, enhancing capacity to address behavioral health, and enhancing care coordination across care settings. Evaluation activities focused on documenting and tracking the impact of strategies aimed at improving state infrastructure, including increasing behavioral health workforce capacity; enhancing information technology solutions to support ongoing care planning, management, and coordination; and, the transition to and implementation of APMs.

4.1.1 Key Stakeholder Surveys

Stakeholder surveys were used to assess aspects of the DSRIP Demonstration that could not be gathered from administrative health care data. Four key stakeholder groups were surveyed: IDN administrators, health information technology (HIT) stakeholders, health care and community-based providers, and Medicaid Beneficiaries. Survey topics included: improvements in care coordination and integration; perceptions of the implementation process; HIT infrastructure; and, transitions to APMs.

4.1.1.1 Data Collection Procedures and Analysis of IDN Administrator Surveys

4.1.1.1.1 Survey Design

The IDN Administrator Survey, created in partnership with key stakeholders including NH DHHS staff, was designed to capture information on the implementation process, progress, successes, challenges and sustainability of Demonstration activities. The survey captured information on a number of key domains corresponding to evaluation research questions and hypotheses including: barriers and facilitators to implementation; progress of capacity building efforts; perceived effectiveness of the DSRIP Demonstration and corresponding projects; programmatic impact; and, administrator observations of sustainability efforts. The majority of questions were Likert scales with additional options for open-ended responses where IDN Administrators could elaborate on their responses. The 2021 survey added questions about impacts the COVID-19 pandemic had on Demonstration activities in its final year of 2020.

4.1.1.1.2 Sampling, Recruitment, and Data Collection

Each Integrated Delivery Network had one to two IDN Administrators (based on the organizational structure of the IDN). A distribution list of potential respondents (2019: n=10, 2021: n=12) was provided to the evaluation team by NH DHSS. For both deployments, the entire list was sent the survey. In 2019, surveys were deployed electronically using Snap Survey software from September-October; in 2021, surveys were deployed electronically

using Qualtrics survey and were in the field from February 2021. The overall response rates for fully completed surveys were 80% (n=8) in 2019, and 75% (n=9) in 2021.

4.1.1.1.3 Data Analysis

Analysis of IDN Administrator surveys was done using basic descriptive statistics. Frequencies were calculated using SPSS 25, and open-ended questions were coded using qualitative thematic analysis techniques.

4.1.1.1.4 Respondent Characteristics

No demographic information was analyzed due to small survey sample size. In each survey year, administrators from all seven IDNs completed surveys.

4.1.1.2 HIT Survey data Collection Procedures and Analysis

4.1.1.2.1 Survey Design

The 2019 and 2021 HIT surveys, created in partnership with key stakeholders including NH DHHS staff, was informed by data collected as part of the NH DSRIP mid-point assessment (conducted by NH DHHS). The HIT surveys were designed to capture information on the implementation process, progress, successes, challenges and sustainability of the Demonstration HIT activities. HIT stakeholders were surveyed about their views and knowledge of: software implementation and use throughout NH and within individual IDNs, HIT activities and enhancements affecting clinical workflows and coordination of care, and successes and challenges with the HIT infrastructure. The 2021 survey included questions about the COVID-19 pandemic and how it may have affected the final year of the Demonstration (2020). The majority of questions were Likert scales with additional options for open-ended responses where HIT stakeholders could elaborate on their responses.

4.1.1.2.2 Sampling, Recruitment and Data Collection

In both 2019 and 2021, NH DHHS provided the email distribution list for the survey. In 2019, surveys were deployed electronically using Snap Survey software and the data collection period was October-November of 2019; in 2021, the survey was deployed electronically using Qualtrics survey software and was fielded in February to March of 2021.. The overall response rates varied by IDN, for an overall response rate of 36% (See Table 4.1-1).

Table 4.1-1: HIT Stakeholder Survey Response Rates

IDN	2019		2021	
	Completed Surveys	Response Rate	Completed Surveys	Response Rate
IDN 1	3	19%	3	30%
IDN 2	4	67%	5	63%
IDN 3	9	43%	16	59%
IDN 4	6	60%	4	36%
IDN 5	2	33%	2	33%
IDN 6	13	30%	12	29%
IDN 7	5	30%	7	50%
Total	42	36%	49	42%

4.1.1.2.3 Data Analysis

Analysis of HIT surveys was done using basic descriptive statistics. Frequencies were calculated using SPSS 25 and open-ended questions were coded using qualitative thematic analysis techniques.

4.1.1.2.4 Respondent Characteristics

The HIT Stakeholder Survey did not query demographic information from respondents, but the distribution list indicated the IDN affiliation of respondents. In both years, IDNs 1 and 5 had much lower response rates than the other IDNs. The distribution of IDN affiliation among respondents who completed the survey is shown in below in Table 4.1-2.

Table 4.1-2 HIT Stakeholder Survey Response Distribution by IDN

HIT Survey Distribution of Respondents by IDN		
IDN	2019	2021
IDN 1	7%	6%
IDN 2	10%	10%
IDN 3	21%	33%
IDN 4	14%	8%
IDN 5	5%	4%
IDN 6	31%	24%
IDN 7	12%	14%

4.1.1.3 Provider Survey Data Collection Procedures and Analysis

4.1.1.3.1 Survey Design

The evaluation team worked with NH DHHS staff to create the Provider Survey. This survey gathered information from DSRIP providers about their opinions on the successes and barriers of: strategies aiming to promote care integration, information sharing and health

information technology utilization, software utilization, and implementing the Comprehensive Core Standardized Assessment (CCSA). Additional questions were asked about resource needs, as well as overall successes/challenges to promoting care integration and information sharing. The majority of questions were Likert scales with additional options for open-ended responses to elicit more in-depth responses from IDN providers.

4.1.1.3.2 Sampling, Recruitment and Data Collection

NH DHHS provided a list of potential respondents representing a variety of providers across various sectors. In 2019 this list was further stratified by evaluation staff to ensure 1) providers seeing patients were included; and 2) providers who participated in evaluation interviews were not included to lessen the burden on their time. The 2019 surveys were deployed electronically using Snap Survey software in October of 2019 with the data collection period completed in November of 2019. The 2021 surveys were deployed electronically using Qualtrics software in September of 2021 with the data collection period completed in October of 2021. Due to a low number of responses for IDN 6 in 2019 and the expected scarcity of respondents due resources diverted to the pandemic and no updated provider list we expanded the sample size by reverting to the original list provided by NH DHHS in 2019. This resulted in 1) a higher response from IDN 6; and 2) an overall increase in respondents in the "director" role at their organizations. The overall response rates varied by IDN for an overall response rate of 28% in 2019, and 18% in 2021. (See Table 4.1-3)

Table 4.1-3 Provider Survey Response Rates

IDN	2019		2021	
	Completed Surveys	Response Rate	Completed Surveys	Response Rate
IDN 1	13	36%	6	20%
IDN 2	10	34%	11	23%
IDN 3	23	21%	12	10%
IDN 4	8	19%	13	22%
IDN 5	15	43%	11	23%
IDN 6	1	20%	14	20%
IDN 7	11	32%	8	20%
Total	81	28%	75	18%

4.1.1.3.3 Data Analysis

Analysis of provider surveys was done using basic descriptive statistics. Frequencies were calculated using SPSS 25 and open-ended questions were coded using qualitative thematic analysis techniques.

4.1.1.3.4 Respondent Characteristics

The distribution of IDN affiliation among respondents who completed the survey is shown in Table 4.1-3.

Most respondents to the Provider Survey were female (80% in 2019; 72% in 2021) and between the ages of 40-59 (63.2% in 2019; 58.7% in 2021). Given the broad spectrum of health care workers who participated in the training, it is not surprising that women comprised the majority of the sample. Recent statistics indicate that women comprise 75% of healthcare practitioners and technical occupations as well as 87% of healthcare support occupations.[37] In addition, the age distribution among providers is consistent with aging behavioral health workforce and the lack of individuals entering the profession.[38]

Provider survey respondents primarily represented the healthcare sector (62.7% in 2019, 54.7% in 2021) and the social service sector (26.7% in 2019, 30.7% in 2021). Respondents largely represented directors and administrators/program managers (68.4% in 2019; 72.2% in 2021); based on open-ended responses, many of them were responsible for overseeing implementation of Demonstration strategies within their organization.

Figure 4.1—1: Provider Stakeholder Surveys Completed by Organizational Role
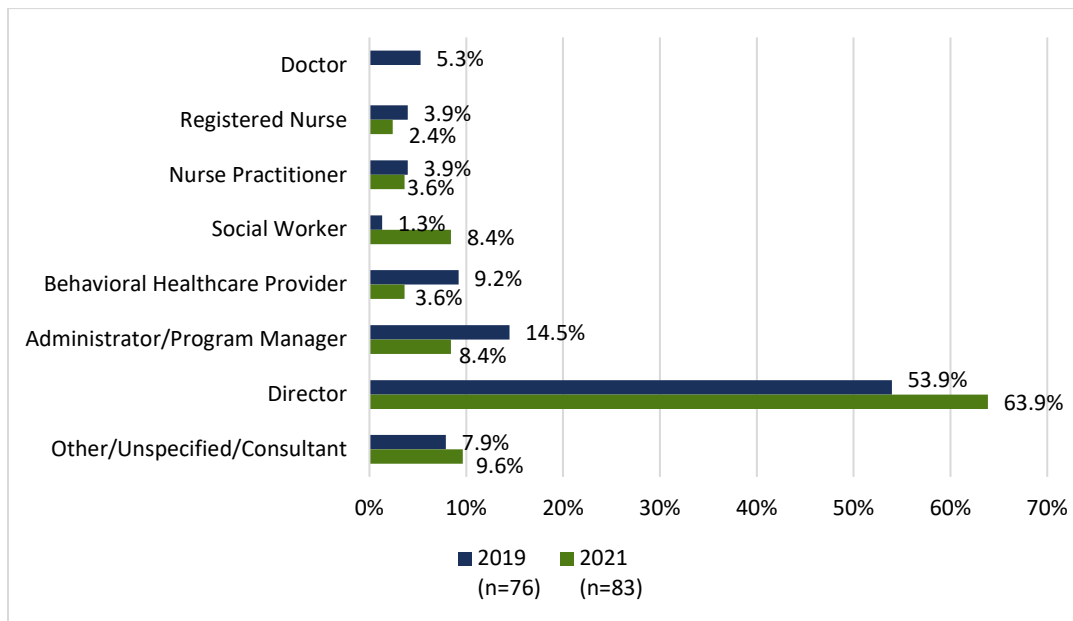
Respondents indicated diverse lengths of experience in their organizational role, with similar numbers reporting 1-3 years in role (36.8% 2019; 20.0% 2021), 4-10 years in role (30.3% in 2019; 48% in 2021), and more than 10 years in role (31.3% in 2019; 29.3% in 2021). In 2021, 42.7% of provider respondents reported being involved being involved in a multidisciplinary care team; in 2019, this was reported by slightly more than half (51.3%) of providers.

4.1.1.4 Beneficiary Experience Survey Data Collection Procedures and Analysis

4.1.1.4.1 Survey Design

Working with the University of Massachusetts Medical School, the evaluation team ensured the design of the Beneficiary experience survey assessed: Beneficiary perceptions of care coordination and integration, health care access, and quality of care. Questions were drawn from standardized survey instruments, such as the Consumer Assessment of Healthcare Providers and Systems Clinician & Group Survey (CG-CAHPS) and the CMS Qualified Health Plan (QHP) enrollee experience survey. The survey was intended to assess Medicaid Beneficiaries' perceptions of their respective IDNs, such that improvements over time could be assessed by repeating the survey. Being mindful of respondent burden, the survey length did not exceed an average of 12 minutes.

The survey instrument was finalized with NH DHHS approval, and was identical to the first two deployments. In the final Wave 3 deployed in the first quarter of 2021, questions were edited to allow for a visit to be via "phone, video, or in-person visits" to capture persons who had interacted with the health system over the previous year via telehealth.

4.1.1.4.2 Sampling, Recruitment and Data Collection

The University of Massachusetts Medical School oversaw sampling, recruitment and data collection procedures for the Beneficiary Experience survey. The final sample size was 9,450 for the first wave of the survey. The sample selection criteria is outlined in Table 4.1-4. Data was collected via phone, mail, and online surveys during December-February of 2018/19 (Wave 1), 2019/20 (Wave 2), and 2020/21 (Wave 3). In Wave 2, there were 3,509 completed interviews, for a final response rate of 38.3%; Wave 2 had 3,714 completed interviews (39.3% response rate); and, Wave 3 had 3,481 completed interviews (36.8% response rate).

Table 4.1-4: Beneficiary Survey Sampling Criteria

Criteria	Notes
Ages 18 and older	
Must have been continuously enrolled in Medicaid since for a six-month period or longer (look back based on data collection start), with no more than one 30-day break in enrollment during that time period	Wave 1 Start Date: 12/10/2018 Wave 2 Start Date: 12/30/2019 Wave 3 Expected Start Date: 12/30/2020 Wave 3 Actual Start Date: 1/13/2021 *(delayed 2 weeks due to COVID-related staffing issues with printer vendor)*
Must have visited a primary care physician within 6-month look-back period	For 2020/21 Wave 3, this could include telehealth visit
Currently attributed to an IDN	
Must have primary health coverage through Medicaid	
Not enrolled in a Nursing Facility or Institution	
Exclude those who do not have home address nor phone number *(Note, some beneficiaries listed a DHHS district office; therefore, it was not possible to reach them in Wave 1.)*	This exclusion was added for Waves 2 & 3 to help decrease unreachable Beneficiaries

4.1.1.4.3 Data Analysis

4.1.1.4.3.1 Calculating CAHPS Composite Scores

The CAHPS macro was used to calculate mean scores for the multi-item composite measures and overall ratings. Using the macro enables the application of case mix adjustment (see below). The composite scores can be tracked to assess change over time over the course of the Demonstration. The CAHPS macro applies the following statistical tests:

- regression to perform case mix adjustment;

- global F-test to examine if there are differences among subgroups (i.e., IDNs) on mean scores; and,

- t-tests to compare the mean score for each IDN to the overall mean score.

4.1.1.4.3.2 Case Mix Adjustment

Case-mix adjustment was used to control for specific variables that may contribute to differences between groups. CAHPS recommends using general health status, age, and education for case-mix adjustment. In addition to the CAHPS-recommended variables, additional variables were controlled for. The full list of variables to be included for case-mix adjustment were as follows: age, gender, education, race and ethnicity, general health status and mental health status.

4.1.2 Key Stakeholder Interviews

Qualitative methods are the preferred method for capturing in-depth data on topics that are not easily reduced to closed-ended questions or numeric estimates. For this evaluation, there were two rounds of semi-structured interviews used to gather in-depth data from stakeholders on aspects of the DSRIP Demonstration that could not be gathered from administrative data or stakeholder surveys. The evaluation relied on qualitative methods to investigate stakeholder experiences of the DSRIP Demonstration as well as to describe changes in the size and training of the IDNs' workforces. Four groups were interviewed: Medicaid Beneficiaries, health care and community-based providers, IDN administrators, and HIT stakeholders. Semi-structured interview guides were developed for each type of key informant interview. The interview guides were designed to gather information on key domains of interest with a specific focus on documenting the implementation process in the first round (2019), and in 2021, documenting any perceptions of transformation and/or sustainability as well as COVID-19 pandemic impacts during 2020, the final year of the Demonstration..

For each of the two (2019 and 2021) cycle of interviews, the goal was to conduct approximately 75 key informant interviews stratified by respondent type and IDN (See Table 4.1-5 for completions across both years). In 2019, some IDNs had harder-to-reach Beneficiary populations within the interview period. We were able to reach 35 Beneficiary interviewees by exceeding targets in other IDNs; in 2021 we were able to complete the Beneficiary interviews with an even distribution amongst the IDNs. Besides that exception in 2019 beneficiary interviews, all interviews were spread evenly among the seven IDNs in each data collection year.

Table 4.1-5: Completed Key Stakeholder Interviews by Interviewee Type

Interviewee Type	2019 # Complete	2021 # Complete	Total Over Evaluation Period
Administrator	10	10	20
HIT Stakeholder	11	8	19
Provider	17	19	36
Beneficiary	35	35	70

4.1.2.1 Data Collection Procedures and Analysis for Administrator Interviews

4.1.2.1.1 Administrator Interview Protocol Development

The IDN Administrator Interview Protocol was created in partnership with key stakeholders including NH DHHS quality and DSRIP program staff, with the goal to capture information on the Demonstration's implementation process and progress to-date using a retrospective lens. The evaluation team's approach to these interviews was to ascertain lessons learned and promising practices that could help guide New Hampshire throughout the remainder of the Demonstration. The interview included questions about the following topics:

- Successes and challenges regarding IDN planning, implementation and operation

- DSRIP program successes and challenges

- Perceived effects of DSRIP on care integration at provider and Beneficiary level

- Perception of how DSRIP HIT strategies and activities may have/have not yet advanced DSRIP goals

- Sustainability of DSRIP activities in NH; transformative aspects of the Demonstration

- Progress made towards transition to APMs and the Administrator's perception of their role in that process

- Covid-19 pandemic impacts on the final year of Demonstration, sustainability

4.1.2.1.2 Sampling, Recruitment and Data Collection Procedures

Given the limited number of IDN Administrators, it was determined in the CMS-approved evaluation plan that all of them would be interviewed for the evaluation. In the cases where IDNs had shared Administrator roles, the two individuals in those roles were interviewed together.

Evaluation team staff emailed IDN Administrators and offered times to be interviewed via telephone. Administrators responded and Cutler Institute staff scheduled interview times with assigned researchers who sent consent language to the Administrators via email.

Interviews were conducted in August of 2019 and April-May of 2021 using the approved, standardized, semi-structured protocol. Members of the evaluation team ensured that Administrators had read and understood the consent language emailed to them when the interview was scheduled. IDN Administrators had the opportunity to ask questions prior to the administration of the telephone interview. All interviews, which averaged approximately 40 minutes, were recorded with permission of the interviewee using encrypted digital audio recorders. Interview audio files were transcribed verbatim for analysis.

4.1.2.1.3 Data Analysis

Qualitative data from the key informant interviews were analyzed using established qualitative analytic techniques. Thematic analysis was used to examine semi-structured interview data for patterns across interviews. Themes were defined based on their appearance in the data and not on a pre-defined structure. For example, IDN Administrators may have described the Demonstration as improving care integration in six unique ways and impeding their care in four ways. Below is a summary of the key steps Cutler Institute used to analyze the qualitative data collected as part of the DSRIP evaluation. It is important to note that qualitative data analysis is an ongoing, fluid, and cyclical process. Although the steps listed below are somewhat sequential, they did not always happen in isolation of each other.

a. *Process and Record Data:* After each interview, Cutler Institute staff immediately processed the information and recorded detailed notes. Staff used a standardized reflection sheet template after each interview so that post interview reflections were standardized across all data collection points. All qualitative interviews were digitally audio-recorded and transcribed verbatim for analysis.

b. *Data Reduction:* Qualitative data collection generally produces a wealth of data, but not all of it is meaningful. After data was collected, the evaluation team implemented a data reduction process in order to determine significance to transform the raw data into a simplified format that could be understood in the context of the research. The data reduction process was guided by the research questions and hypotheses laid out in the DSRIP evaluation plan.

c. *Identifying Meaningful Patterns and Themes:* In order for qualitative data to be analyzable, it must first be grouped into the meaningful patterns and/or themes that have been observed. This process is the core of qualitative data analysis. Some themes naturally emerged from the data while others evolved from the research questions. Once themes had been identified, the data was further organized into thematic groups to allow for continued analysis.

d. *Conclusion Drawing and Verification*: Data was coded and analyzed to identify systematic patterns and interrelationships across themes and/or content. Data was compared with quantitative data to further explicate and validate findings and to identify other areas needing exploration.

Software-assisted coding of interview transcripts was conducted using the qualitative analysis software program NVivo®. Coding teams were used in order to ensure inter-coder reliability and the reliability of the analyses. Neither method was intended to support comparison between groups of interviewees or follow principles of statistical significance. The evaluation team used standard techniques to identify emergent themes, independently code transcripts, and resolve coding discrepancies or questions.

Thematic analysis of interview data was done iteratively to build a coding scheme for all textual data using the grounded theory technique, in which codes are drawn from the text and coding involves frequent comparative analysis of the data. Thematic analysis was conducted separately on each semi-structured interview transcript for each group of interviewees using an inductive approach. Patterns in the transcripts were identified and grouped into themes. Themes were checked against the original transcripts for validity. The identified key themes and sub-themes were used to compile a codebook with emerging themes and constructs with attention to those elements suggested to be important for capturing successes and challenges, progress towards Demonstration goals, and sustainability. Where applicable, interview data was triangulated with quantitative data to further explicate and validate findings and to identify other areas needing exploration.

4.1.2.2 Data Collection Procedures and Analysis for Health Information Technology Interviews HIT Interview Protocol Development

The HIT stakeholder interview protocol focused on gathering in-depth information on perceptions of the DSRIP HIT enhancement strategies, including whether HIT has enhanced governance, finance, policy/legal issues, and business operations during the DSRIP Demonstration. Given the legality of health data information sharing, an effort was made to understand the challenges and best practices around that domain.

4.1.2.2.1 Sampling, Recruitment and Data Collection Procedures

In both July 2019 and March 2021, the evaluation team asked IDN Administrators for a list of HIT staff for the DSRIP project who were appropriate to interview. Administrators provided a list to Cutler Institute of these key HIT staff and informed this staff Cutler Institute may contact them.

Cutler Institute staff emailed key HIT staff offering interview dates and times. Each responded, and Cutler Institute staff scheduled telephone interviews with HIT staff and assigned researchers, who sent consent language to the HIT staff via email as well as a secure conference phone line to use.

Using a standardized script developed by the evaluation team and approved by NH DHHS, members of the evaluation team ensured that HIT staff had read and understood the consent language emailed to them when the interview was scheduled. HIT staff had the opportunity to ask questions prior to the administration of the telephone interview. Interviews were administered using an approved, standardized, semi-structured protocol. All interviews were audio recorded, with permission of the interviewee, using encrypted digital audio recorders. HIT staff interviews averaged approximately 50 minutes. Interviews were conducted in August of 2019 and April of 2021.

4.1.2.2.2 Data Analysis

All interviews with HIT staff were recorded, transcribed verbatim, coded and analyzed for patterns and themes in NVivo® (Version 12) using the same process described above in section 4.1.2.1.3.

4.1.2.3 Data Collection Procedures and Analysis for Provider Interviews

4.1.2.3.1 Provider Interview Protocol Development

The provider interview protocol focused on documenting providers' experiences with care coordination and integration during the DSRIP Demonstration, as well as perceptions of the impact of HIT systems in assisting with ongoing management of patient care. The protocol was designed to gather information on barriers to integration of care and perceptions of how DSRIP may have facilitated integration of care. The interview included questions about the following topics:

- Successful strategies perceived as promoting integration of care

✦ Barriers to integration of care for persons with behavioral health disorders

✦ Barriers to information-sharing between providers

✦ Successes with care integration related to DSRIP activities

✦ Sustainability of DSRIP activities in NH

✦ Perceived ease and usefulness of HIT strategies and software related to DSRIP

✦ Resources needed to implement evidenced-based care for persons with behavioral health disorders

✦ Covid-19 pandemic impacts on DSRIP activities and care provision

4.1.2.3.2 Sampling, Recruitment and Data Collection Procedures

2019 Interview Sampling

For the first round of interviews in 2019, NH DHHS provided Cutler Institute staff with a list of 386 providers within the state. Cutler Institute stratified the list by IDN and three major provider types (physical health, behavioral health, and social services), and created a random sample for each IDN of 12-15 providers to recruit for telephone interviews. To get to the sample size of 17, research staff attempted to reach 2 to 3 providers in all seven of the IDNs. It was determined that every attempt would be made to reach at least one physical health and one behavioral health provider within each IDN.

NH DHHS sent a global email to all providers on the list introducing them to the Cutler Institute evaluation team and giving them notice that they may be contacted to participate in an interview for the evaluation. The evaluation team then emailed providers in the sampling frame to offer available times to be interviewed via telephone. Providers that responded scheduled an interview with evaluation team staff who sent consent language via email.

It was discovered in the recruitment phase that some providers on the list were HIT staff or in administrative positions within a health agency, further diminishing the total sampling pool. With approval from NH DHHS, the evaluation team then initiated snowball sampling, which is a probability sampling technique where existing study subjects recruit future subjects from among their peer group. For example, a HIT administrator at a behavioral health agency that was contacted during the provider recruitment and deemed not an appropriate subject, was then asked if there were providers within the agency that would like to be included.

2021 Interview Sampling

Given the challenges and constraints on providers' time during the COVID-19 pandemic, the evaluation team, in consultation with NH DHHS, and heeding CMS guidance, delayed provider interviews and changed to a more purposive style of sampling. Purposive sampling deliberately selects participants with particular characteristics, strategically creating a sample that is relevant to the research questions. It was determined that purposive

sampling would be used for the 2021 interviews to enable the evaluation team to speak with providers more directly involved in projects related to the Demonstration.[39] (While random sampling was more closely followed for provider interviews in 2019, purposive sampling was deployed when snowball sampling.) In 2021, the evaluators requested that IDN administrators deliberately select providers who were knowledgeable about the DSRIP program's operations and challenges and were involved in Demonstration projects. This list stratified by IDN as well as provider type (medical provider, behavioral health provider and social service provider), was shared with the evaluation team, and recruitment was then conducted to mirror 2019 recruitment. No further snowball sampling was necessary.

Data Collection

Using a standardized script developed by the evaluation team and approved by NH DHHS, members of the evaluation team ensured that providers had read and understood the consent language emailed to them when the interview was scheduled. Providers had the opportunity to ask questions prior to the administration of the telephone interview. Interviews were administered using an approved, standardized, semi-structured protocol. All interviews were audio recorded, with permission of the interviewee, using encrypted digital audio recorders. Provider interviews averaged approximately 40 minutes. Interviews were conducted between September and November of 2019 for the first round, and July-early August 2021 for the final round.

4.1.2.3.3 Data Analysis

All interviews with IDN providers were recorded, transcribed verbatim, coded and analyzed for patterns and themes in NVivo® (Version 12) using the same process described above in Section 4.1.2.1.3.

4.1.2.4 Data Collection Procedures and Analysis for Beneficiary Interviews

4.1.2.4.1 Beneficiary Interview Protocol Development

For the Beneficiary interview protocol, the evaluation team focused on documenting Beneficiary experiences with health care access and the quality of their care during the Demonstration. While developing the protocol, the evaluation team took into consideration that Beneficiaries attributed to an IDN would not know about that process, nor would they necessarily know what an IDN was or that they were participating in the Demonstration. Accordingly, the interview focused on gathering data on experiences with health care, usual source of care, barriers to access, provider communication, and perceptions of care integration, without mentioning the Demonstration or any IDN by name. The interview included questions on the following topics:

- Ease of referrals for treatment, ease of accessing care
- Barriers to accessing care
- Perception of provider(s) collecting social determinants of health information for the Comprehensive Core Standardized Assessment (CCSA)
- Quality of care: overall, perceived changes (good or bad) in last 12 months

- Perception of communication between various providers and between Beneficiary and provider(s)
- Use of HIT and/or technology in getting care and information from provider(s)

4.1.2.4.2 Sampling, Recruitment and Data Collection Procedures

The Cutler Institute evaluation team randomly selected New Hampshire Medicaid Beneficiaries ages 18+, that were continuously enrolled in Medicaid over the last 12 months (as of July 31, 2019 for first round of interviews, and May 1, 2021 for second round), had a behavioral health diagnosis, and attributed to an IDN based on the NH DHHS IDN attribution algorithm. The evaluation team further stratified by age and gender to ultimately sample 56 people from each IDN in 2019, and 100 from each IDN in 2021. Total number of Beneficiaries contacted at least once to obtain the interviewee pool was 386 in 2019 and 486 in 2021.

As part of the initial verbal contact with Beneficiaries, the evaluation team interviewers asked if the Beneficiary had a health care visit in the last 12 months-- to further ensure they had contact with health care services within the IDN. In 2021, a telehealth visit was an allowable visit. If the Beneficiary did not have a health care visit in the last 12 months, they were screened out.

To get to the sample size of 35, research staff attempted to reach five Beneficiaries in all seven of the IDNs. It was determined that the minimum number of Beneficiaries to reach would be four, as some IDNs had higher response rates from Beneficiaries for the interviews. Thus, in 2019, there were two IDNs with four completed Beneficiary interviews, one IDN had seven interviews; the rest had five Beneficiaries interviewed. In 2021, the evaluation team was able to complete interviews with five Beneficiaries from each of the seven IDNs.

Excel spreadsheets containing contact information were created and stored on a secure network drive that only key research staff could access. Minimal information necessary to contact Beneficiaries such as name, address, and phone number was included in the spreadsheets. Team members went from top to bottom of the Excel sheet list when making calls; in 2019, every Beneficiary in the sample was called at least once; in 2021, a larger sample was pulled and the interviews were completed before everyone in the sample was contacted.

Beneficiary outreach: first, a letter from the New Hampshire Department of Health and Human Services, Division of Medicaid Services, was mailed to all potential interviewees in the sample pool. The letter informed participants that a researcher from the University of Southern Maine might be calling them to ask if they were willing to schedule and/or conduct an immediate and interview to talk about their experience with their health care services. Research staff initiated telephone outreach to Beneficiaries approximately 5-10 days after the letters were mailed.

In 2019, the evaluation team initially thought that in-person interviews at a location within the Beneficiary's IDN would be the preferred method of administration and room locations were secured, with assistance from staff at each IDN. It became clear early in the

recruitment phase that due to Beneficiaries' transportation, mobility, and employment situations that telephone interviews were preferred over the in-person method. This method worked well in 2021, as well, with remote work and restricted in-person access due to the pandemic.

Using a standardized script developed by the evaluation team and approved by NH DHHS, five to six members of the evaluation team simultaneously called potential interviewees from the sample. If necessary, multiple call attempts (up to three or more) within a two-week period were made to reach each potential interviewee to conduct an interview. Research staff logged the dispositions of each individual call attempt, for example, whether the call attempt resulted in a Refusal, Answering Machine, Not in Service, No Answer, Hang Up, or Completion. In 2019, research staff attempted to contact approximately 386 Beneficiaries to complete 35 interviews; in 2021, initial contact was attempted to 486 Beneficiaries to complete all 35 interviews.

Beneficiaries agreeing to be interviewed were read consent language and had the opportunity to ask questions prior to the administration of the telephone interview. Interviews were administered using an approved, standardized, semi-structured protocol. All interviews were audio recorded, with permission of the Beneficiary, using encrypted digital audio recorders. Interviews took approximately 30 minutes. At the conclusion of each interview, when the recording stopped, the Beneficiary's mailing address was confirmed and staff mailed a copy of the consent/research description and a $25 gift card as a sign of appreciation.

First round interviews were conducted between September and November of 2019, and the final round were conducted in July and early September 2021.

4.1.2.4.3 Data Analysis

All interviews with Medicaid Beneficiaries were audio recorded, transcribed verbatim, coded and analyzed for patterns and themes in NVivo® (Version 12) using the same process described above.

4.1.2.5 Administrative Documents

Administrative documents from IDNs were used to gain in-depth information on implementation progress, including changes in the workforce capacity, HIT infrastructure and progress towards enhancing readiness to transition to APM across IDNs over the course of the Demonstration. Document review of IDN semi-annual reporting to NH DHHS was used to inform three of the evaluation measures. Document review was conducted on an ongoing basis, separately for each IDN. The semi-annual reports were reviewed and summarized with a focus on identifying IDNs' progress towards meeting project milestones, specific activities pursued by IDNs related to Demonstration progress, and as well as identify any potential lessons learned and recommendations to improve the roll-out and/or design of the Demonstration.

4.2 Evaluation of DSRIP Performance Measures

4.2.1 Overview of Pre-Post Study Design

The Evaluation included a pretest-posttest design to assess the statewide impact of the Demonstration on outcome measures by examining trends in cost, service utilization, and quality of care for Medicaid Beneficiaries with behavioral health disorders. Beneficiaries were attributed to the IDNs before and after the implementation of the Demonstration. The DSRIP Demonstration evaluation used NH DHHS administrative data to assess the receipt of services, estimate health care visits and costs, and analyze closed-ended survey questions. Quantitative analytic methods were used to compare outcomes and the extent of existing health and health care differences between sub-populations as well as between IDNs.

Administrative data was analyzed using statistically validated methods to test hypotheses and answer research questions. The evaluation team produced descriptive statistics to describe the population and look for associations. Results from descriptive statistics were used to help inform model specification for the multivariate analyses. A pre-post design (with clustering to account for Beneficiaries in multiple years) was used to measure change over time. Depending on the outcome measure, the evaluation team ran Poisson, negative binomial, logistic, or generalized linear regression models. The team ran additional comparative analyses to examine between group differences across IDNs and separate analysis on selected chronic condition populations.

4.2.1.1 Evaluation Target and Comparison Population

4.2.1.1.1 Study Group

The study group for this evaluation included all New Hampshire Medicaid fee-for-service and Medicaid Care Management Program Beneficiaries— both children and adults, who have had a behavioral health disorder with full Medicaid benefits. Behavioral health disorders ranged from moderate depression and anxiety to substance use and severe mental illness. For Beneficiaries to had adequate health care experiences during the year, they must have been continuously enrolled in a full benefit Medicaid program for ten months or longer to be included in the analysis study group. Individuals who did not have an eligible behavioral health disorder were excluded from the study population.

4.2.1.1.2 Comparison Group

Since the Demonstration's seven IDNs serve all Medicaid Beneficiaries with a behavioral health condition, there was no direct comparison group. Therefore, this evaluation uses a pre-post design. The comparison population included New Hampshire Medicaid fee-for-service and Medicaid Care Management Program Beneficiaries (both children and adults) who had a behavioral health disorder and/or a substance use disorder with full Medicaid benefits in the three years prior to the implementation of the Demonstration.

Comparison Group – Beneficiaries without Behavioral Health Disorders

The analysis also included a comparison group for falsification tests that was comprised of Beneficiaries who had <u>no</u> behavioral health disorders. This population was not expected to be impacted by the Demonstration and provided a comparison control for the measures that were not specific to behavioral health disorders. This group also had to meet the 10 or more months of continuous full benefit eligibility criteria.

Chronic Condition Subpopulation

Four chronic conditions were targeted by DSRIP for intervention: Diabetes, Asthma, Cardiovascular Disease (CVD), and Chronic Obstructive Pulmonary Disease (COPD). Beneficiaries with a targeted chronic conditions from the above study and comparison groups were identified through analysis of diagnosis and specific types of services from Medicaid claims and encounter data.

IDN Attribution

IDN attribution for 2015-2020 used the NH Beneficiary attribution files provided by NH DHHS. Given that the providers and provider relationships created by the IDN structures did not exist and the ability to recreate these provider structures would be difficult, if not unfeasible, IDN attribution in the pre-periods 2013 and 2014 were based on geographic location. Additionally, Beneficiaries who were not enrolled on the last day of the year (12/31) were not included in the NH attribution algorithm. These unattributed Beneficiaries who met the 10 or more months of continuous eligibility were assigned based on geographic location. To identify Beneficiaries for the pre-Demonstration and unattributed Beneficiaries in the post period with a behavioral health disorder, the same claims-based algorithm used by NH DHHS in their attribution algorithm was used.

Three criteria are used in the attribution algorithm to identify behavioral health disorders:

1. Beneficiaries receiving care at community mental health centers, or

2. Beneficiaries with a primary diagnosis code for a behavioral health disorder as defined by NH DHHS; or

3. Beneficiaries with a prescription for a therapeutic medication for a behavioral health disorder as defined by NH DHHS.

Beneficiaries who met one or more of the eligibility criteria were considered to have had a behavioral health disorder and were considered to be part of the study group. The specific eligibility behavioral health criteria are outlined in more detail below in Table 4.2-1.

Table 4.2-1: Claims-based Behavioral Health Disorder Criteria for Identification

Criteria 1:
Beneficiaries receiving care at a community mental health center (CMHC)

Beneficiaries who are indicated as eligible recipients of behavioral health care received at Community Mental Health Centers (CMHC). Beneficiaries meeting this criterion were identified based on the assignment of one of the following codes in the Medicaid Management Information System (MMIS; Medicaid claims and encounter data).

Codes are based on CMHC submission to Managed Care Organizations or paid fee-for-service claims with the following modifiers:

- U1 - Severe/Persistent Mental Illness (SPMI)
- U2 - Severe Mental Illness (SMI)
- U5 - Low Utilizer of Mental Health Services
- U6 - Serious Emotionally Disturbed Child
- U7 - Emotion Disturb Child/Interagency

Criteria 2:
Beneficiaries with a primary diagnosis code for a behavioral health disorder as defined by NH DHHS

Beneficiaries who have a Medicaid claim on which the primary diagnosis code is for a behavioral health disorder. The following ICD-10 codes identify Beneficiaries with mental health disorders:

- F20-F29 Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
- F30-F34 Mood (affective) disorders
- F41-F44 Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders
- F53 Puerperal psychosis
- F60 Specific personality disorders
- F63 Impulse disorders
- F68 Other disorders of adult personality and behavior
- F84.0 Autistic disorder
- F84.9 Pervasive developmental disorders, unspecified
- F90 Attention-deficit hyperactivity disorders
- F91 Conduct disorders
- F93 Emotional disorders with onset specific to childhood
- F94 Disorders of social functioning with onset specific to childhood and adolescence

The following ICD-10 codes identify Beneficiaries with SUDs:

- F10 Alcohol related disorders (excluded: F10.21 Alcohol dependence, in remission)
- F11 Opioid related disorders (excluded: F11.21 Opioid dependence, in remission)
- F12 Cannabis related disorders (excluded F12.21 Cannabis dependence, in remission)
- F13 Sedative, hypnotic, or anxiolytic related disorders (excluded: F13.21 Sedative, hypnotic, or anxiolytic dependence, in remission)
- F14 Cocaine related disorders (excluded: F14.21 Cocaine dependence, in remission)
- F15 Other stimulant related disorders (excluded: F15.21 Other stimulant dependence, in remission)
- F16 Hallucinogen related disorders (excluded: F16.21 Hallucinogen dependence, in remission)
- F18 Inhalant related disorders (excluded: F18.21 Inhalant dependence, in remission)
- F19 Other psychoactive substance related disorders (excluded: F19.21 Other psychoactive substance dependence, in remission)
- F55 Abuse of non-psychoactive substances
- K29.2 Alcoholic gastritis
- K70.1 Alcoholic hepatitis

Criteria 3:
Beneficiaries with a prescription for a therapeutic medication for a behavioral health disorder as defined by NH DHHS.

Beneficiaries who have a Medicaid pharmacy claim for a behavioral health disorder. The following specific therapeutic class codes identify these Beneficiaries:

- H2D Barbiturates
- H2E Non-Barbiturates, Sedative-Hypnotic
- H2F Anti-Anxiety Drugs
- H2G Anti-Psychotics, Phenothiazines
- H2H Monoamine Oxidase (MAO) Inhibitors
- H2M Bipolar Disorder Drugs
- H2S Serotonin Specific Reuptake Inhibitor(SSRI)
- H2U Tricyclic Antidepressant & Related Non-Selective Reuptake Inhibitor
- H2V Anti-Narcolepsy/Anti-Hyperkinesis
- H2W Tricyclic Antidepressant/Phenothiazine Combination
- H2X Tricyclic Antidepressant/Benzodiazepine Combination
- H7B Alpha-2 Receptor Antagonists Antidepressant
- H7C Serotonin-Norepinephrine Reuptake-Inhibitor (SNRIs)
- H7D Norepinephrine & Dopamine Reuptake Inhibitors (NDRIs)
- H7E Serotonin-2 Antagonist/Reuptake Inhibitor (SARIs)
- H7J Monoamine Oxidase (Mao) Inhibitors - Non-Selective & Irreversible
- H7O Antipsychotic, Dopamine Antagonist, Butyrophenones
- H7P Antipsychotic, Dopamine Antagonist, Thioxanthenes
- H7R Antipsychotic, Dopamine Antagonist, Diphenylbutylpiperidines
- H7S Antipsychotic, Dopamine Antagonist, Dihydroindolones
- H7T Antipsychotic, Atypical, Dopamine, & Serotonin, Antagonists
- H7U Antipsychotic, Dopamine & Serotonin Antagonist
- H7X Antipsychotic, Atypical, D 2 Partial Agonist/Serotonin Mix
- H7Y Treatment For Attention Deficit Hyperactivity Disorder, Norepinephrine Reuptake Inhibitor Type
- H7Z Serotonin Specific Reuptake Inhibitor (SSRIs)/Antipsychotic, Atypical, Dopamine & Serotonin Antagonist Combination
- H8B Hypnotics, Melatonin Receptor Agonists
- H8D Hypnotics, Melatonin & Herb Combination
- H8F Hypnotics, Melatonin Combination Other
- H8G Sedative-Hypnotic, Non-Barbiturate/Dietary Supplement
- H8H Serotonin-2 Antagonist, Reuptake Inhibitor/Dietary Supplement Combinations
- H8I Selective Serotonin Reuptake Inhibitor (SSRIs)/Dietary Supplement Combinations
- H8M Treatment For Attention Deficit Hyperactivity Disorder -Selective Alpha-2 Adrenergic Receptor Agonist
- H8P Serotonin Specific Reuptake Inhibitor (SSRI) & 5Ht1A Partial Agonist Antidepressant
- H8Q Narcolepsy/Sleep Disorder Agents
- H8T Serotonin Specific Reuptake Inhibitor (SSRI) & Serotonin Receptor Modifier Antidepressant
- H8W Antipsychotic-Atypical, D3
- J5B Adrenergic, Aromatic, Non-Catecholamine
- COD Anti-alcoholic Preparations
- H3T Narcotic Antagonists
- H3W Narcotic Withdrawal Therapy Agents

4.2.1.1.3 Exclusions

Individuals who did not have an eligible behavioral health disorder were excluded from the study population. Beneficiaries who did not have a qualifying behavioral health disorder and eligible co-occurring physical health condition were excluded from the chronic condition subpopulation group. All individuals with less than 10 months of continuous full benefit Medicaid coverage within a study year were excluded.

It is important to note that in some specific instances, persons dually eligible for both Medicaid and Medicare ("dual eligibles") were excluded from specific measures due to the lack of prescription medications data. For example, Medicare pharmacy data was not included in the NH Medicaid claims, so dual eligibles were not included in the study group on the following outcome measures:

- 1.1.2 Antidepressant Medication Management
- 1.1.5 Adherence to Antipsychotic Medications for Individuals with Schizophrenia
- 1.1.6 Diabetes Screening for People with Schizophrenia or Bipolar Disorder who are using Antipsychotic Medication
- 1.1.20 Use of Opioids at High Dosage

4.2.1.1.4 Administrative Data Sources

NH DHHS has provided Medicaid administrative data for this evaluation. Several administrative data sources were used to create the analytic data files for this study including:

3. **Medicaid Enrollment and Eligibility** – These data included information on the Medicaid Beneficiary's age, gender, address, category of eligibility, time periods of enrollment, Medicare enrollment, managed care and Expansion plan enrollment, and type of insurance (FFS or managed care).

4. **Premium Assistance Plan (PAP) Enrollment** – A separate set of enrollment files were received on the Medicaid Expansion Beneficiaries CY2014 – CY2018. This enrollment data had a different format from the regular Medicaid enrollment data, and were translated into a format consistent with the Medicaid enrollment data for the analytic data files.

5. **NH Hospital Discharge Summary** – NH Hospital (the State's Institute for Mental Disease (IMD)) discharges for the evaluation period including identification of Beneficiary and the time period they were admitted. For Medicaid adults (aged 19-64), these data are not captured in claims and are important to the examination of length of stay in the IMD.

6. **Medicaid Claims data** – Medicaid claims includes both fee-for-service (FFS) and encounter claims for the study period and the required look-back period for the measures (Q4 2011 and full year 2012). Medicaid managed care started January 1,

2014, prior to this date all data are FFS claims. Claims for 2014 onward are a mixture of FFS and encounter. Medical and Pharmacy claims are included.

7. **PAP claims data** – Medical and Pharmacy encounter claims data for the Premium Assistance Program (PAP) were received for calendar years 2014-2018. PAP claims data were provided in a different format from the regular Medicaid claims data. PAP claims were translated into a consistent format with the Medicaid claims data to create the analytic data files.

8. **IDN Attribution Files** – NH provided the data files they use for attributing Beneficiaries to an IDN. The file contained information about the Beneficiary as of the date of attribution, including a flag for behavioral health condition and both the geographic and DSRIP behavioral health and service use attribution method.
    a. Community Mental Health Enrollment file was provided to assist in creating the DSRIP behavioral health attribution methodology.

9. **Provider file** – Information on Medicaid enrolled providers including Medicaid and National Provider Identifiers (NPI), and various address information (e.g., billing address, services locations).
    a. The NPI was used to link to the National Plan and Provider Enumeration System (NPPES) to obtain the provider taxonomy code. Taxonomy codes identify the provider type and area of specialization for health care providers. While several taxonomy codes are available for a provider, the primary taxonomy code was used in identifying provider types. Taxonomy codes enable providers to identify their specialty at the claim level. This information was used for measure development.

4.2.1.2 Data Collection and Validation Procedures

4.2.1.2.1 Data Transfer Procedures

NH DHHS staff provided the above data files. Data were transmitted to the evaluator via secure file transfer protocol (SFTP). Historic claims data were transmitted with a minimum of six months of run-out; however, most had a much longer (over a year) run-out period. Monthly data files were received starting in 2020. These monthly files required an adjudication process to select the final action claim. Six months of claims run-out was processed on the 2020 claim year to assure completeness of the data files.

4.2.1.2.2 Data Validation Activities

NH DHHS requires the submission of encounter data in contract with Managed Care Organizations (MCO). NH DHHS contracts with Health Services Advisory Group, Inc. (HSAG), the Department's External Quality Review Organization (EQRO) to evaluate each MCO's contract compliance including encounter data validation (EDV). Results of the 2020 NH External Quality Review Technical Report found:[40]

- compliance with electronic X12 data interchange (EDI) edits;

- ✦ met the percent accurate standard (or within 0.8 percentage points) for member identification;
- ✦ met the standard for accuracy and validation of billing provider identification information for all three encounter types, with the exception of one MCO that fell well below on pharmacy encounters;
- ✦ met the standard for populating service provider information;

The report consistently identified two areas for improvement: (1) data accuracy related to Beneficiary identification numbers; and, (2) timely encounter data submissions. These areas continue to be areas for improvement identified in earlier 2017 and 2016 review of encounter data (12/1/2013 - 5/2/2016). The identification of accurate Beneficiary and provider information would have been addressed by the rejection of these claims when sent to the MMIS system. Therefore, these findings did not affect data received for this evaluation. Data were examined for completeness, consistency, value ranges, valid claim coding schemes and duplication. Additional checks were run to assess paid amounts on certain claim types responsible for cost issues identified in the interim report.

Table 4.2-2: New Hampshire Data Validation Activities

MCO Encounters	PAP Encounters
NH has contract requirements that Managed Care Organizations must meet for the timeliness, quality and accuracy of encounter data. New Hampshire utilizes the CMS optional External Quality Review (EQRO) activity of encounter data validation of the Managed Care Organizations' data. MCOs with encounter data that fall outside of established contract standards may be subject to liquidated damages.	PAP Encounter data is validated through a highly automated data audit tool for data file intake verification and processing. The system checks data files submitted through a Secure File Transfer Protocol (sFTP) for conformity to data submission requirements customized by the State of New Hampshire. These submission requirements include: data file structure; field detail (type and max/min length); percentage filled; field frequency; default thresholds; and, data quality checks with maximum and minimum default thresholds.

4.2.1.3 Data Transformation and Measures Calculation

Medicaid and PAP claims and eligibility data were translated to a common data format to combine data files. Depending on the type of claim, encounter or FFS, specific transformations were applied based on information obtained from NH DHHS technical staff. For example, paid amount had to be identified from various data elements depending on the type of claim—facility versus profession, encounter versus FFS or crossover claims.

Relational models linked diagnosis, surgical procedures and provider information to each claim line. Provider information required additional parsing to identify billing, rendering and

attending providers for each service line. The provider NPI was then used to link to the NPPES data to identify the primary provider type and specialty using taxonomy codes. From this common data structure, data elements were further mapped into the data format required for the measures engine.

A flexible claims-based measures engine developed by the Cutler Institute over several years was then applied to the transformed data formats. The measures engine takes a standardized claim format and produces various standards-based, health-related measures including National Quality Forum (NQF) and Healthcare Effectiveness Data and Information Set (HEDIS®).[2]

In addition, cost (e.g., total costs, various cost categories) and utilization (e.g., inpatient stays, readmission, emergency room use, primary care visits) measures were calculated. Cutler Institute created NH Medicaid-tailored quality, costs and utilization measures for use in the DSRIP evaluation.

The Cutler Institute employs a robust measure development and quality assurance process. In the development environment, multiple programmers independently code measures. Validation of the code then occurs by verifying that the results of each programmer match exactly and comparing results over time and with national benchmarks. A senior programmer conducts a final review of the coding and results before moving the measure into the measures engine.

Each study year published technical specifications (e.g., HEDIS®, AHRQ, and CMS) that were reviewed for any changes or modifications to the measures. When updates existed, they were applied to the measures following the same quality assurance process identified above.

4.2.1.3.1 Development of Analytic File

A Beneficiary study year level analytic file was created combining information from the various data sources into a common format including Beneficiary's demographics, eligibility, IDN enrollment, costs and outcome measures. All data and measures programming were completed on the SQL server.

Costs were adjusted for inflation with the medical consumer price index (CPI) and presented in 2016 dollars, the first year of the demonstration.

The member study year level file was constructed on all members on the SQL server. The study population was identified and SAS analytic files for members with 10 or more months

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[2] The Healthcare Effectiveness Data and Information Set (HEDIS®) is a registered trademark of NCQA. The logic used to produce these HEDIS® measure results has not been certified by NCQA. Such results are for reference only and are not an indication of measure validity. A calculated measure result (a "rate") from a HEDIS measure that has not been certified via NCQA's Measure Certification Program, and is based on unadjusted HEDIS specifications, may not be called a "Health Plan HEDIS rate" until it is audited and designated reportable by an NCQA-Certified HEDIS Compliance Auditor. Until such time, such measure rates shall be designated or referred to as "Uncertified, Unaudited Health Plan HEDIS Rates."

of full benefit Medicaid eligibility. From this file, the propensity matched sample as well as the unmatched behavioral health sample were constructed. Depending on the statistical tests required, multiple regression analyses were conducted using SAS or STATA.

4.2.1.4 Data Analysis

For the final evaluation report, performance measures were calculated annually for a three-year pre-Demonstration period (calendar years 2013, 2014, and 2015), a four-year Demonstration period (calendar years 2016, 2017, 2018, 2019), and for a separate Demonstration Pandemic period (calendar year 2020).

4.2.1.4.1 Descriptive Statistics

Descriptive analyses for performance measures were conducted for each study period: the pre-Demonstration period (calendar years 2013, 2014, and 2015), the Demonstration period (calendar years 2016, 2017, 2018, 2019), and the Demonstration Pandemic period (calendar year 2020). Bivariate analyses were used to examine trends in Beneficiaries' access to care, service utilization and cost of care. Chi-square, Mann-Whitney U Test, and Wilcoxon Signed Rank Test were used to assess health and health care outcomes that were categorical or continuous but did not meet the assumptions (e.g., normality) used by parametric tests. The Demonstration evaluation tested whether continuous measures (e.g., number of visits, etc.) met the assumptions of parametric analyses. If these measures did not meet the assumptions of parametric tests, non-parametric methods were used to analyze the data. The non-parametric tests were used to assess whether any differences found between the pre- and post-periods are statistically significant. The traditionally accepted risk of error ($p \leq 0.05$) was used for all comparisons.

4.2.1.4.2 Multivariate Analysis

A pretest-posttest design was used to examine the statewide impact of the Demonstration on DSRIP performance measures. Key outcomes were calculated for the pre-Demonstration period (calendar years 2013, 2014, and 2015), the Demonstration period (calendar years 2016, 2017, 2018, 2019), and the Demonstration Pandemic period (calendar year 2020). Regression models accounting for Beneficiaries in more than one year (clustering) were used to assess the rate of change over time in study outcomes for the study group. To assess change over time, the evaluation used Poisson or negative binomial regression models for the utilization measures, logistic regression for the quality measures, and logistic regression and generalized linear models for the cost measures, For costs, where a significant portion of the population did not use the service (ED, inpatient, and outpatient), a two-step approach was used. The first step was to predict the likelihood of any use of the service using logistic regression models and the second step was to estimate costs for those who used the service using generalized linear models. Age, gender, dual status (enrollment

in Medicare and Medicaid), ACG®[3] risk level, eligibility through Medicaid expansion, and geographic location (i.e., large, small, and isolated rural)[4] were controlled for in each of the models. Statistically significant results are reported based on $p \leq 0.05$. See Table 4.2-3 for a description of the analytic methods used by measure.

Table 4.2-3: Overview of Regression Analysis

Measure Number	Measure Name
Poisson/Negative Binomial Regression Models	
1.1.3	Follow-Up After Hospitalization for Mental Illness
1.1.19	Potentially Preventable ED Visits
1.5.1	Hospital Readmission for Any Cause
1.5.2	Hospital Readmission for Behavioral Health Disorder
1.6.1	Ambulatory Care Sensitive Admission
2.1.9	Mental Illness Hospitalization Follow-Up (7 days)
2.1.11	Mental Illness ED Visit Follow-Up (30 days)
2.1.12	Alcohol/Drug Dependence Emergency Department Visit Follow-Up (30 days)
Generalized Linear Models	
1.4.1	Total Costs of Care
1.4.5	Total Cost of Behavioral Health Care
Logistic Regression and Generalized Linear Models	
1.4.2	Total Cost of All Inpatient Care
1.4.3	Total Cost of All Outpatient Care
1.4.4	Total Cost of Emergency Department Care
1.4.6	Total Cost of Outpatient Behavioral Health Care
1.4.7	Total Cost of Inpatients Behavioral Health Care
1.4.8	Total Cost of Emergency Department Behavioral Health Care
Logistic Regression	
1.1.2	Antidepressant Medication Management
1.1.4	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment
1.1.5	Adherence to Antipsychotic Medications for Individuals with Schizophrenia
1.1.6	Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications
1.1.7	Diabetes Screening for People with Diabetes and Schizophrenia

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[3] The ACG® system quantifies morbidity by grouping individuals based on their age, gender and **all** medical diagnoses that have been recorded over a defined period of time, typically one year. ACG® is a system is a population/patient case-mix adjustment system developed by researchers at The Johns Hopkins University School of Hygiene and Public Health in Baltimore, Maryland.

[4] Large, small, and isolated rural designations are based on Rural-Urban Commuting Area codes (RUCAs). Rural Health Research Center Rural-Urban Commuting Areas (RUCA). Available online: http://depts.washington.edu/uwruca/ruca-maps.php

Measure Number	Measure Name
1.1.8	Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia
1.1.9	Follow-up Care for Children Prescribed ADHD Medication
1.1.10	Metabolic Monitoring for Children and Adolescents on Antipsychotics
1.1.11	Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics
1.1.13	Breast Cancer Screening
1.1.16	Adolescent Well-care Visit
1.1.20	Use of Opioids at High Dosage
1.2.3	Annual Primary Care Visit (ages 12-19) Annual Preventive/Ambulatory Care Health Service (Adults)
1.2.4	Behavioral Health Care Visits
1.2.5	Initiation of Alcohol or Drug Treatment Services
Ordinary Least Squares Regression	
1.8.1	Length of Stay for Inpatient Psychiatric Care

To control for external context and examine whether any changes in Beneficiary outcomes could be attributed to DSRIP, the evaluation conducted a difference-in-difference analysis. This approach assesses changes in outcomes over time for a group of individuals without behavioral or substance use disorders and compares them to changes for the study group. For part of the evaluation, the analysis relied on measures of outcome variables before and after implementation of the Demonstration for Beneficiaries with (study group) and without (comparison group) behavioral health disorder diagnoses.

The comparison group was comprised of New Hampshire Medicaid Beneficiaries without a behavioral health disorder who were selected using propensity score matching. Although we intended to use a 2 to 1 match, we found that the pool of Beneficiaries was not large enough to accommodate this approach and instead attempted a 1 to 1 match. We were only able to match 83% of the study population due to the variation in characteristics between the behavioral health population and the population without behavioral health disorders.

The full Medicaid population with ten or more months of full benefit coverage during the study year was used for the unadjusted trend analysis and for multivariate analysis of measures that do not apply only to Beneficiaries with a behavioral health disorder. The matched population was used in the difference-in-difference analysis. To complete the picture, we ran multivariate models on the behavioral health population that did not have a match to explore whether the Demonstration had an impact on individuals with the greatest risk.

4.2.1.4.3 Beneficiary Characteristics

In the Medicaid population, Beneficiaries with behavioral health disorders were older, with higher ACG risk scores and more likely to be dually eligible and enrolled in the Medicaid Expansion program than the pool of Beneficiaries without a behavioral health condition. Tables 4 Pre-Demonstration, Table 5 Demonstration, and Table 6 Demonstration Pandemic provide demographic characteristics of all Beneficiaries included in the study. Although there were still significant differences in the characteristics of the propensity-matched populations, they were considerably more similar than the two groups in the full Medicaid population. Beneficiaries with behavioral health disorders that were not matched in the propensity sample to the non-behavioral health pool were considerably older with much higher risk scores than the propensity sample. They were also more likely to be female, dually eligible, and enrolled in the Medicaid Expansion population.

Among Beneficiaries without a behavioral health disorder, the majority were children ages 0-17. The percentage of Beneficiaries in this age range decreased from the Pre- to Post-periods, from 70% to 59%. This population group further declined during the Pandemic to 51%. Among Beneficiaries with a behavioral health disorder, ages 0-17 also decreased from 38.6% in the pre-Demonstration period to 30.1% in the Post period and further declined during the Pandemic to 27.6%. The percentage 65 and older remained relatively static (5-6.5%) for all Beneficiaries, while the percentage increased for ages 18-44 and ages 45-64.

Regardless of behavioral health disorder status, there were more female Beneficiaries in every study period when compared to males. Nearly a quarter of the Beneficiaries were attributed to IDN 4 and the fewest number of Beneficiaries were attributed to IDNs 2, 5, and 7. Overall, Beneficiaries with behavioral health disorders were nearly two times more likely to be dually eligible for Medicaid and Medicare benefits compared to the non-behavioral health population. Likewise, Beneficiaries with behavioral health disorders were more likely to be in the expansion population. Risk scores were higher among Beneficiaries with a behavioral health disorder, ranging from 1.9996 (pre) to 1.9932 (post) to 2.038 in the Pandemic. In contrast, risk scores ranged from 0.6027 (pre) to 0.6609 (post) and dropped to 0.5302 in the Demonstration Pandemic period for Beneficiaries without a behavioral health disorder.

Table 4.2-4: Study Populations: Pre-Demonstration Period (2013-2015)

Pre-Demonstration Period (2013-2015)	All Medicaid		Propensity Matched Sample		Unmatched Behavioral Health Sample
	Behavioral Health	Non-Behavioral Health	Behavioral Health	Non-Behavioral Health	Behavioral Health
IDN					
1	14.6%	14.6%	15.0%	14.8%	12.6%
2	10.8%	10.5%	10.6%	10.7%	10.4%
3	12.1%	13.1%	12.1%	12.0%	12.2%
4	24.3%	24.3%	24.0%	24.0%	25.7%
5	9.9%	10.0%	9.9%	9.9%	10.0%
6	18.2%	16.8%	18.0%	18.0%	19.6%
7	10.3%	10.5%	10.4%	11.0%	9.4%
Unassigned	0.1%	0.1%	0.1%	0.1%	0.1%
Sex					
Male	43.7%	47.1%	45.5%	46.7%	33.1%
Female	56.3%	52.9%	54.5%	53.3%	66.9%
Age					
Under 6	3.2%	27.3%	3.7%	8.9%	0.17%
6-11	16.1%	24.1%	18.6%	18.6%	1.25%
12-17	19.3%	18.8%	21.9%	20.2%	4.4%
18-44	35.7%	16.9%	34.2%	26.7%	44.4%
45-64	19.7%	7.0%	16.0%	13.5%	41.3%
65 or older	6.1%	5.8%	5.7%	12.0%	8.5%
Dual					
Eligible	19.5%	9.2%	17.5%	17.7%	68.9%
Non-Eligible	80.5%	90.8%	82.5%	82.3%	31.2%
Expansion					
In Expansion	14.5%	9.5%	13.7%	15.5%	19.2%
Not in Expansion	85.5%	90.5%	86.3%	84.5%	80.8%

Pre-Demonstration Period (2013-2015)	All Medicaid		Propensity Matched Sample		Unmatched Behavioral Health Sample
	Behavioral Health	Non-Behavioral Health	Behavioral Health	Non-Behavioral Health	Behavioral Health
Age					
Mean	30.2	18.7	27.9	29.5	43.6
ACG Risk Score					
Mean	1.9996	0.6609	1.3633	1.1598	5.7212

Table 4.2-5: Study Populations: Demonstration Period (2016-2019)

Demonstration Period (2016-2019)	All Medicaid		Propensity Matched Sample		Unmatched Behavioral Health Sample
	Behavioral Health	Non-Behavioral Health	Behavioral Health	Non-Behavioral Health	Behavioral Health
IDN					
1	15.0%	15.4%	15.4%	15.3%	13.1%
2	10.0%	9.8%	9.9%	10.0%	10.2%
3	12.7%	13.4%	12.6%	12.3%	13.4%
4	24.5%	25.5%	24.7%	24.0%	23.6%
5	9.2%	9.1%	9.2%	9.6%	9.5%
6	18.4%	16.8%	18.0%	18.1%	20.3%
7	10.1%	10.0%	10.2%	10.6%	9.9%
Unassigned	0.0%	0.0%	0.0%	0.0%	0.0%
Sex					
Male	43.7%	47.1%	46.1%	47.2%	32.9%
Female	56.3%	52.9%	54.0%	52.8%	67.1%
Age					
Under 6	2.1%	22.3%	2.6%	6.0%	0.1%
6-11	12.5%	20.5%	15.0%	15.4%	0.8%
12-17	15.5%	16.1%	19.1%	16.4%	3.1%
18-44	42.9%	24.7%	41.0%	34.8%	51.7%
45-64	22.0%	11.2%	18.5%	18.6%	38.7%
65 or older	5.0%	5.3%	4.9%	8.8%	5.7%
Dual					
Eligible	15.0%	8.0%	13.4%	13.4%	22.6%
Non-Eligible	85.0%	92.0%	86.6%	86.6%	77.4%
Expansion					
In Expansion	37.3%	25.2%	34.6%	36.6%	50.0%
Not in Expansion	62.7%	74.8%	65.4%	63.4%	50.0%

Demonstration Period (2016-2019)	All Medicaid		Propensity Matched Sample		Unmatched Behavioral Health Sample
	Behavioral Health	Non-Behavioral Health	Behavioral Health	Non-Behavioral Health	Behavioral Health
Age					
Mean	32.1	22.1	30.0	31.4	42.2
ACG Risk Score					
Mean	1.9932	0.6027	1.1924	1.0285	5.7320

Table 4.2-6: Study Populations: Demonstration Pandemic Period (2020)

Demonstration Pandemic Period (2020)	All Medicaid		Propensity Matched Sample		Unmatched Behavioral Health Sample
	Behavioral Health	Non-Behavioral Health	Behavioral Health	Non-Behavioral Health	Behavioral Health
IDN					
1	15.0%	15.3%	15.1%	15.3%	14.6%
2	10.0%	9.5%	10.0%	10.0%	10.1%
3	13.0%	13.7%	12.9%	12.9%	13.2%
4	24.5%	25.5%	24.7%	24.7%	23.0%
5	9.3%	8.8%	9.2%	9.2%	9.8%
6	18.4%	17.2%	18.4%	18.4%	18.7%
7	9.9%	9.8%	9.8%	9.8%	10.6%
Unassigned	0.0%	0.0%	0.0%	0.0%	0.0%
Sex					
Male	43.3%	46.0%	45.3%	46.0%	33.4%
Female	56.7%	54.0%	54.8%	54.0%	66.7%
Age					
Under 6	1.7%	18.3%	2.0%	5.7%	0.1%
6-11	10.7%	17.9%	12.7%	12.9%	0.7%
12-17	15.2%	14.8%	17.5%	15.7%	3.6%
18-44	45.6%	30.2%	43.9%	38.0%	54.7%
45-64	21.5%	12.5%	18.7%	19.1%	35.9%
65 or older	5.3%	6.4%	5.3%	8.7%	5.1%
Dual					
Eligible	15.5%	8.9%	13.9%	13.8%	23.3%
Non-Eligible	84.6%	91.1%	86.1%	86.2%	76.7%
Expansion					
In Expansion	41.6%	30.8%	38.8%	39.6%	55.5%

Demonstration Pandemic Period (2020)	All Medicaid		Propensity Matched Sample		Unmatched Behavioral Health Sample
	Behavioral Health	Non-Behavioral Health	Behavioral Health	Non-Behavioral Health	Behavioral Health
Not in Expansion	58.5%	69.2%	61.2%	60.4%	44.5%
Age					
Mean	32.8	24.7	31.2	32.2	41.2
ACG Risk Score					
Mean	2.03823	0.5302	1.2337	1.0851	6.1711

4.2.2 Comparative Analysis

4.2.2.1 Integrated Delivery Networks

The NH DSRIP Demonstration established seven (7) IDN service regions covering the state. In our comparative analysis, trends for individual IDNs are examined. Each IDN is unique in its make-up of providers, administrative structure, primary and behavioral health infrastructure, acuity-mix of Beneficiaries, community needs, goals and approaches to integration. As noted earlier, the IDN lead organizations were comprised of four hospitals, one county administrator, one public health organization and one not-for-profit rural health network.

For multivariate IDN analyses, a referent IDN was chosen for comparison purposes. This referent represents the IDN which was most likely to be an "average" performer across all domains when compared to the other IDNs. In order to determine which IDN would serve as the referent, the unadjusted outcomes of ten measures from the Demonstration period were examined. The outcomes were ranked from highest to lowest, and the IDN which most ranked in the middle was IDN 2.

Measures Examined to Determine Referent IDN by Domain:

Access to Care:
1.2.4 Behavioral Health Care Visits
1.2.5 Substance Use Treatment Services

Cost of Care:
1.4.1 Total Cost of All Care (BH)
1.4.5 Total Cost of Behavioral Health Care

Quality of Care:
Measure 1.1.2 Antidepressant Medication Management - acute
Measure 1.1.2 Antidepressant Medication Management - continuous

Service Utilization:
Potentially preventable ED visits per 1,000 member months (with BH disorder)
Measure 1.5.2 Hospital Readmission for Behavioral Health Disorder

Integration and Coordination:
Measure 2.1.1 Fragmented Care - with BH
Measure 2.1.11 Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)

For the final summative report, a subset of measures were examined by IDN. To select this subset, the following criteria were utilized:

- Measure specifications did not significantly change over the study period;

- Reported numbers were sufficient to support IDN level analysis;

- Clear connection to the quantitative research questions and associated hypotheses;

◆ Measure related to community driven projects that were selected by multiple IDNs;

◆ Results were available for all IDNs; and

◆ Data could be trended over multiple years.

After using the selection criteria, the chosen measures for the IDN analysis are shown in Table 4.2-7. Complete definitions of these measures can be found in Appendix A.

Table 4.2-7: Selected Measures for IDN Analysis

Measure	Domain
1.2.3 – Annual Primary Care Visit	Access to Care
1.2.4 – Behavioral Health Care Visits	
1.1.16 – Adolescent Well Care Visit	
1.1.2 – Antidepressant Medication Management -- Initiation (3 month) Follow-Up and Engagement (6 month) Follow-Up	Quality of Care
1.1.3 – Follow-Up After Hospitalization for Mental Illness	
1.1.4 Initiation and Engagement of AOD Dependence Treatment	
1.1.6 HEDIS: Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications	
1.1.9: Follow-up Care for Children Prescribed ADHD Medication	
1.1.10 HEDIS: Metabolic Monitoring for Children and Adolescents on Antipsychotics	
1.1.11 HEDIS: Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics	
2.1.1 – Fragmented Care	Integration of Care
2.1.9 – Mental Health Hospitalization Follow-Up Within 7 days of Discharge	
2.1.11 – Mental Illness Emergency Department (ED) Follow-Up Visit Within 30 days	
2.1.11: Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)	
2.1.12: Alcohol/Drug Dependence (AOD) Emergency Department (ED) Visit Follow-Up (30 Days)	
1.1.18: Emergency Department (ED) Visits	Service Utilization
1.1.19 – Potentially Preventable ED visits per 1,000 member months	
1.5.1: Hospital Readmission for Any Cause	
1.5.2: Hospital Readmission for Behavioral Health Disorder	
1.6.1: Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders	
1.8.1: Length of Stay for Inpatient Psychiatric Care	
1.4.1: Total Cost of All Care	Cost of Care
1.4.2: Total Cost of All Inpatient Care	

Measure	Domain
1.4.3: Total Cost of All Outpatient Care	
1.4.4: Total Cost of Emergency Department (ED) Care	
1.4.5: Total Cost of Behavioral Health Care	
1.4.6: Total Cost of Outpatient Behavioral Health Care	
1.4.7: Total Cost of Inpatient Behavioral Health Care	
1.4.8: Total Cost of Emergency Department (ED) Behavioral Health Care	

NH DHHS developed a NH Beneficiary attribution algorithm to assign Beneficiaries to IDNs. The first year of attribution was calendar year 2015. Prior to that time, an attribution file was not available. Every Medicaid Beneficiary was attributed to an IDN based on either where they received care or, when service use was not available, or the geography of their residence. Often the geography of residence and service use attribution resulted in placement in the same IDN. The portion of Beneficiaries who were attributed to the same IDN whether service use or geography was used was 96% in the pre-Demonstration period, 90% in the Demonstration period, and 89% in the Demonstration pandemic period.

Four approaches were identified to deal with the lack of attribution files for 2013, 2014 and as noted, earlier unassigned members not enrolled on 12/31 for 2015-2020. Given that the providers and provider relationships created by the IDN structures did not exist and the ability to recreate these provider structures would be unfeasible, the following methods were identified to examine IDNs over time:

1.) Attribute Beneficiaries to IDNs by geography over the whole time period;

2.) Attribute Beneficiaries by geography in years 2013, 2014 and unassigned along with the NH attribution for years 2015-2020;

3.) Use NH IDN attribution for years 2015 forward and eliminate 2013 and 2014 in the pre years; or,

4.) Attribute Beneficiaries by geography in years 2013-2014 and NH attribution years 2015-2020, but exclude any members whose IDNs do not match.

To determine the best approach to use, sensitivity analysis was conducted. Characteristics of the Beneficiaries whose IDN changed based on service use or geography were more likely to be younger, non-dual eligible, a member of the Expansion population, and have a substance use disorder rather than Beneficiaries who's IDN was the same. However, when comparing characteristics of Beneficiaries whose IDN stayed the same with all Beneficiaries, the differences were absent. Additionally, preliminary multivariate analysis concluded that results did not vary both in terms of significance or direction of the change. Based on these findings, the second approach of using geography in 2013, 2014 and unassigned 2015-2020 along with NH attribution for 2015-2020.

4.2.2.2 Chronic Conditions Subpopulations

For the final report, a subset of measures were examined by subpopulations limited to Beneficiaries with one or more specific chronic conditions (Asthma, CVD, Diabetes and COPD). To select this subset of measures, the following exclusion criteria were utilized:

⬥ Sufficient population to support analysis

⬥ Measures that correspond to the specific disease state (e.g., Measure 1.1.8 HEDIS: Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia)

After using the selection criteria, the chosen measures for the chronic conditions analysis are shown in Table 4.2-8. Complete definitions of these measures can be found in Appendix A.

Table 4.2-8. Selected Measures for Chronic Conditions Analysis

Measure	Domain
Measure 1.1.6 - Primary Care Visit for Adults	Access to Care
Measure 1.1.3 - Follow-up after hospitalization 30 days	Quality of Care
Measure 1.1.18 Prevalence of Frequent Outpatient Emergency Department Visits for non-Mental Health or Chemical Dependency Services Measure 1.1.18 Prevalence of Frequent Outpatient Emergency Department Visits for Mental Health or Chemical Dependency Services Measure 1.1.19 - Potentially preventable ED visits per 1,000 member months Measure 1.5.1 - Hospital Readmission for Any Cause Within 30 days Measure 1.5.2 - Hospital Readmission for Behavioral Health Disorder Within 30 days Measure 1.6.1 - ACS Admissions Composite Scores	Service Utilization
Measure 2.1.1 - Fragmented Care	Integration & Coordination
Measure 1.4.1 Total Cost of All Care	Cost of Care

4.2.2.3 Data Collection Procedures and Analysis of NH BRFFSS

4.2.2.3.1 BRFSS Survey Design

The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. The NH BRFSS is an annual random-digit-dialed telephone survey of NH adults (18+) conducted by NH DHHS and supported by a grant from the Centers for Disease Control and Prevention (CDC). The primary focus of the survey are behaviors that are linked with population

morbidity and mortality (e.g., diabetes, heart disease, stroke, and injury); and, on topics including diet, exercise, weight, tobacco and alcohol use, injuries and preventative medical care. The survey estimates the health status and the prevalence of various risk factors among respondents, including Medicaid Beneficiaries. NH BRFSS data was used to assess trends in population health measures.

4.2.2.3.2 Data Collection and Validation Procedures

Once the Cutler Institute received data, BRFSS data was cleaned to remove "don't know/not sure," "refused" and missing responses from the 2014, 2017 and 2018 datasets. A behavioral health flag was created for respondents who replied they had 14 or more poor mental health days per month.

BRFSS data validation activities are conducted by the NH Department of Health and Human Services, Division of Public Health Services.

Survey data validation activities:
1) State Added Questions: NH BRFSS gather data on additional topics related to their specific health priorities through the use of state added questions. All response options of state-added questions are tested and validated by the state BRFSS program prior to inclusion in the questionnaire.
2) Data quality validation: Monthly completed surveys are submitted to CDC and NH BRFSS runs a monthly data validation to check for data completeness and quality assurance.

For the 2018 BRFSS survey methodology and weighting methods can be found in this report: https://www.cdc.gov/brfss/annual_data/annual_2018.html

For the 2017 BRFSS survey methodology and weighting methods can be found in this report: https://www.cdc.gov/brfss/annual_data/annual_2017.html

For the 2014 BRFSS survey methodology and weighting methods can be found in this report: https://www.cdc.gov/brfss/annual_data/annual_2014.html

4.2.2.3.3 Data Analysis

All frequencies were conducted in SAS using PROC SURVEYFREQ. Frequencies were weighted using the standard BRFSS final weight assigned to each respondent for landline and cell phone response data (_LLCPWT). Chi-square was used to determine whether there were significant differences between 2014 and 2018. The table below outlines the variables, which were used to conduct analyses.

4.2.2.3.4 BRFFS Respondent Characteristics

For all years of BRFSS data, the percent of respondents in the 18-44 and 45-64 age groups were similar and there were slightly more female than male respondents. Nearly a quarter of the responses came from IDN 4 (23.8%, 23.6%, 23.3%) in each year, with the fewest number of responses in IDN 5 for all years. Most respondents had health care coverage in 2014 (88.6%) and 2017 (92.7%) but fewer in 2018 (68.9%). More respondents had Medicaid coverage in 2017 and 2018 compared to 2014 (7.5%, 7.1% vs. 4.9%). The

number of respondents saying they had 14 or more days per month where their mental health status was "not good" slightly increased from 10.3% in 2014 to 11.9% in 2017 to 13.6% in 2018 (Table 4.2-9).

Table 4.2-9: BRFSS Demographics

	2014		2017		2018	
	Weighted Frequency	Percent	Weighted Frequency	Percent	Weighted Frequency	Percent
Age						
18-44	438,626	41.3%	442,376	40.8%	446,380	40.8%
45-64	410,921	38.7%	403,124	37.2%	401,894	36.7%
65 or older	211,940	20.0%	237,910	22.0%	246,938	22.5%
Sex						
Male	519,526	48.9%	530,066	49.0%	533,697	49.0%
Female	541,961	51.1%	551,480	51.0%	555,859	51.0%
IDN						
1	169,129	15.9%	155,726	14.4%	152,649	13.9%
2	103,238	9.7%	112,082	10.3%	109,632	10.0%
3	148,801	14.0%	165,675	15.3%	175,196	16.0%
4	252,438	23.8%	255,733	23.6%	255,435	23.3%
5	83,022	7.8%	86,396	8.0%	87,554	8.0%
6	218,062	20.5%	219,259	20.2%	219,721	20.1%
7	86,798	8.2%	88,538	8.2%	95,027	8.7%
Total	1,061,487		1,083,410		1,095,214	
Health Care Coverage						
Any type of coverage	930,703	88.6%	1,001,562	92.7%	1,011,802	68.9%
Medicaid coverage	43,650	4.9%	59,692	7.5%	71,451	7.1%
Behavioral Health Flag						
14 or more days per month mental health status "not good"	109,146	10.3%	1,001,562	11.9%	149,185	13.6%

Source: NH BRFSS, 2014, 2017, and 2018

5.   Methodological Limitations

The DSRIP Demonstration proposes to effect a dynamic change in the health care delivery system for people with behavioral health disorders. Systemic change does not occur quickly and, in this case, will likely take longer than the five years for which the Demonstration was approved. Therefore, all findings must be interpreted with sensitivity toward the scope of the attempted change in the system and its long-term potential beyond the Demonstration period.

5.1 General Limitations

There are several overarching limitations to the process evaluation and preliminary examination of performance metrics including:

- The CMS-Approved Evaluation Plan (Attachment I) indicated that NH DHHS would procure an independent evaluator by November 1, 2017, and submit an Interim Evaluation Report to CMS for comment on March 31, 2019. New Hampshire procured the Independent Evaluator in October 2018, and the CMS submission date was updated to March 30, 2020. Therefore, many evaluation activities did not occur simultaneously with project implementation as intended in the original evaluation design.

- While the Demonstration officially began in January 2016, the first year and half of the initiative was largely dedicated to executing the planning and infrastructure building activities necessary to implement the Demonstration such as establishing IDNs and creating project plans. The first IDN Project plans were not fully approved by the DHHS until September 1, 2017; as a result, DSRIP implementation only really began at that time. However, the evaluation period is based on the original CMS approved STC project dates as well as evaluation plan and timeline. Therefore, this evaluation considers Administrative and BRFSS data periods prior to 9/1/17 as the "Demonstration" period.

- Given the high levels of need for expansion and improvement in behavioral health in New Hampshire, especially among Medicaid Beneficiaries, multiple state efforts are currently being implemented to address these shortfalls. The implementation of the Demonstration concurrently with other State efforts makes it difficult to isolate the potential effect of the Demonstration on system transformation efforts. See Section 7 for other related state initiatives.

- On March 13, 2020, Governor Chris Sununu declared a state of emergency in New Hampshire as a result of the emergence of the Novel Coronavirus. The ensuing public health emergency encompassed over three-quarters of the final Demonstration year (2020) and has an ongoing and widespread impact on New Hampshire's economy, health system, and other infrastructure. Per instructions and guidance from CMS provided in September 2021, this evaluation report

holds the quantitative findings for the year 2020 separate from the remainder of the Demonstration period (years 2016-2019).

♦ In consultation with NH DHHS, the evaluation team deviated from the post-Demonstration evaluation plan, updating post-Demonstration (2021) survey instruments and interview protocols to capture qualitative data that could inform the summative process evaluation of pandemic-related impacts on Demonstration activities in 2020, and delayed qualitative and survey field work until what was considered the most optimum time to collect data without extending the summative report development. While evaluating the effects of a global pandemic on the DSRIP Demonstration in New Hampshire was not part of the original evaluation plan, efforts were made to understand how it may have impacted Demonstration activities in 2020, especially related to waiver projects and activities, and overall goals, outcomes and sustainability.

5.2 Limitations of the Process Evaluation

There are a number of limitations associated with the data used to inform the process evaluation. Below is a brief summary of the methodological limitations associated with the summative evaluation of the Demonstration:

♦ Changes to the evaluation timeline led to the initial process evaluation to use a more retrospective lens instead of real time, which may have skewed historical knowledge and events and decreased the pool of persons with day-one knowledge of the Demonstration. However, these methodological issues may be partially mitigated by adjustments to the program implementation timeline. Given the natural slow start to a Demonstration of this size, it could be considered that the earlier interim process evaluation was completed during the late implementation phase. This process evaluation is built upon in this Summative Report, where applicable, to triangulate findings from 2021 data collection and final performance measure outcomes.

♦ All of the data derived from qualitative interviews are subject to the standard interview limitations and biases.

♦ The majority of the qualitative interviews were conducted over the phone. Therefore, it is possible that interviewees moderated their answers based on proximity of others, or their location.

♦ The Health Information Technology Stakeholder, IDN Administrator, and Provider Surveys were deployed via online software (Snap Survey in 2019, and Qualtrics in 2021), and it is possible that some potential respondents did not receive the email link due to spam filters or blocks from servers. The evaluation team sent separate emails from a University of Southern Maine email address in order to mitigate this issue and boost response rates. Additionally, response rates varied by IDN for the Health Information Technology Stakeholder and Provider surveys, so some IDNs may have had more representation than others.

➡ The evaluation team had planned to offer both face-to-face and telephone interviews for Beneficiaries. After initial outreach in 2019, it became clear that the preferred method was telephone, resulting in only two Beneficiary surveys being completed face-to-face. Given that many people currently use mobile phones and those using land lines have access to caller identification services, many recruitment call attempts went unanswered or went directly to a message service. In order to protect Beneficiary confidentiality, research staff did not leave recorded voice messages. It might be assumed that many Beneficiaries chose not to pick up the evaluation team's calls, as they did not recognize the incoming number and out-of-state area code. This resulted in the need to expand the sample and doubled efforts to reach the target goal of 35 completed interviews. In 2019, this also predicated the decision to have a minimum of four Beneficiaries from each IDN, as some IDNs had a better response rate and the evaluation team did not want to screen out qualified and willing participants while simultaneously conducting outreach, thus some IDNs were slightly over represented. In 2021 the evaluation team was able to reach five beneficiaries from each of the seven IDNs.

➡ All of the participants for the professional staff interviews were derived from lists provided by NH DHHS or IDNs; complete lists may have not been provided. In 2019, sampling was conducted within the provider list, but a much more concise list was provided by IDN Administrators in 2021. In both 2019 and 2021, there was no random sample of IDN Administrators (all were interviewed) nor the HIT staff. For provider interviews, the evaluation team used a broad list supplied by NH DHHS; however, some IDNs had much smaller samples of providers to contact, comparatively limiting their sampling pool of providers. In 2019, the evaluation team focused on providers that had direct interactions with patients, further diminishing the total sampling pool, and necessitating the decision to snowball sample if they successfully recruited HIT staff or administrators and asked them to recruit providers in their organization with direct contact with Beneficiaries. In 2021, the provider list was obtained from IDN Administrators and were known contributors to DSRIP Demonstration activities.

➡ Professional staff stakeholder interview protocols retrospectively focused on the Demonstration, so there was a possibility that those with historical knowledge recalled things inaccurately, and in the same vein, staff turnover may have resulted in an interviewee being unable to provide historical perspective as they were not present during key points of the Demonstration.

➡ In select cases (2019 Beneficiary interviews, pre- and post- provider and HIT stakeholder surveys) some IDNs may be under- or over-represented in the aggregate survey and qualitative data due to varied response rates and sampling pools.

➡ The 2019 surveys and interviews were conducted during the Demonstration period; however, participants were asked to reflect back on changes over time. The 2021 surveys and interviews were reflective upon both upon the final year of the Demonstration (2020) and the overall 5-year Demonstration period. As such, it is possible that some information was not recalled correctly.

✦ While the analysis of the qualitative data collected is supported by stakeholder quotes, it is possible that some experiences related to the DSRIP program are not included or fully represented in the evaluation findings.

✦ There were some limitations in collecting this data from administrative documents. In counts of trainings aggregated across IDNs, there may be duplication resulting from two or more IDNs collaboratively sponsoring a training. In addition, there were also likely further education efforts not listed by IDNs in the workforce development sections of the semi-annual reports. The training data below only includes formal training designed for group audiences but may extend to forums and teleECHO sessions where formally listed in administrative documents.

✦ According to the IDN semi-annual report narratives, IDNs may be undercounting training opportunities provided to partner staff with Demonstration funds as partners may not report the ways in which other funding made available by IDNs are used for this purpose. The close-out reports suggest there were more trainings provided that were not explicitly recorded in the semi-annual reports Workforce Capacity Development narratives. There were also difficulties identifying counts and types of participants as partner priorities and staffing shifted rapidly.

5.3 Limitations of the Performance Measures Evaluation

✦ The DSRIP Demonstration evaluation was limited by the lack of a true comparison group. All Medicaid Beneficiaries were subject to participation in the Demonstration and received care impacted by the development and implementation of HIT and IDNs across the state. As a result, comparisons were only made among Beneficiaries subject to the Demonstration. Furthermore, outcomes may have improved for all Beneficiaries regardless of the presence of a behavioral health disorder. Therefore, the DSRIP Demonstration evaluation may show improvements in outcomes when compared to baseline (i.e., the pre-Demonstration period) but no improvements in comparison to people without behavioral health disorders.

✦ New Hampshire's DSRIP Demonstration began in in January 2016 and did not have a Year 0 planning year; IDN Project plans were not fully approved by the DHHS until September 1, 2017. Additionally, holding the 2020 data separate artificially shortens the Demonstration period but this deviation from the original evaluation plan was deemed necessary as nearly all measures were influenced by changes to health care due to the COVID-19 pandemic.

✦ In the original evaluation plan, 2020 data would have been included in the Demonstration period. Due to unexpected changes in health care delivery in 2020 as a result of the COVID-19 pandemic, data from this year was analyzed separately. This deviation from the original evaluation plan was approved by CMS.

✦ The evaluation considers BRFSS data prior to 2017 as the baseline data for the interim report. However, 2017 BRFSS data is unlikely to show immediate changes

related to the Demonstration and only one additional year of BRFSS data was obtained for the final evaluation report (2018) due to data delays from the COVID-19 pandemic.

✦ BRFSS data is collected from a sample of NH residents of which only a small percentage are Medicaid Beneficiaries (less than ten percent). The survey does not collect information on all diagnoses, especially those related to behavioral health; therefore, a proxy indicator (behavioral health flag) was created based on self-reported mental health status.

✦ A number of confounding factors may have influenced the data represented in the performance measures. This includes possible interrelations of the DSRIP program with other current initiatives within the state's Medicaid program, as well as interactions with other Medicaid waivers and federal awards that can affect quality of care, service delivery, population heath, and the cost of care for Medicaid Beneficiaries. The Interpretations and Policy Implications section has more details on interactions with other state initiatives.

✦ For selected measures, the comparison group comprised of New Hampshire Medicaid Beneficiaries without a behavioral health disorder was selected using propensity score matching (PSM). Although the evaluation team intended to use a 2 to 1 match, we found that the pool of Beneficiaries was not large enough to accommodate this approach and instead attempted a 1:1 match. While using only 1:1 match tends to minimize bias, the inability to match 2:1 removed the evaluators' ability to "improve precision without a commensurate increase in bias."[41]

✦ The evaluation is limited by its reliance on diagnostic codes, eligibility codes for CMHCs, and prescription drug codes to identify the Beneficiary population with behavioral health disorders. These codes may not capture all behavioral health disorders, especially if clinicians do not ascertain them or they are not included on claims for health services. Reliance on these codes may reduce outcome differences between the Beneficiary populations with and without behavioral health disorders, resulting in misleading findings on the impact of the Demonstration.

✦ Not all the data available for this evaluation is ideal. It was determined that using EHR/EMR data from New Hampshire DHHS for several measures as recommended in the Evaluation Plan was not feasible due to insufficient data collection, standardization, and/or validation. In some cases, the 'best available' data were selected that address the relevant hypothesis as closely as possible. For example, the evaluation team utilized data from the Behavioral Risk Factor Surveillance System (BRFSS) survey instead of claims data due to long look back periods preceding claims data availability. Ultimately, some measures were dropped due to unavailable or unreliable data, as were three hypotheses that contained only one (deleted) measure. In collaboration with CMS, Cutler Institute and NH DHHS will revisit the feasibility of assessing the hypotheses where

measures were removed using other data sources for the final summative report. (See Appendix E for list of deviations from the CMS-approved Evaluation Plan.)

✦ Costs for these analyses rely on claims for Medicaid services. Several changes occurred during the study period that may have impacted the completeness of these claims including:
  o Moving from a Fee-for-Service reimbursement to managed care (2013);
  o Change in the Medicaid Management Information System (MMIS) (April 2014);
  o ACA Expansion population under Medicaid Managed Care (2014);
  o Transitioned the ACA Expansion population to Health Protection Premium Assistance Program (PAP) (2016-2018):
    ▪ PAP data was received in a different format requiring a mapping of the two systems to create final analytic data files; and
  o Transitioned the ACA Expansion population back to Medicaid Managed Care (2019).

6.   Demonstration Findings

This section provides the findings and conclusions from the five overarching research questions and their supporting hypotheses. Sections 6.1 and 6.2 summarize the main findings for research questions (RQ 1, RQ 2), which span 6 domains (Access to Care, Quality of Care, Integration of Care, Service Utilization, Cost of Care, Population Health) primarily using Medicaid claims data. Relevant data from surveys and interviews are included in this section to provide additional interpretive context. In addition, Sections 6.1 and 6.2 include subpopulation and IDN comparison analyses, which examine differences in outcomes between various populations of interest as well as across IDNs. Sections 6.3, 6.4 and 6.5 summarize findings from the Infrastructure Development domain (RQ 3, RQ 4, RQ 5), which also overlap with the Integration of Care domain as applicable. The analysis for these research questions relied on data from administrative documentation along with survey and interview data; implementation and process outcomes were built upon and quantified to the extent possible through IDN and state reports. Each section (6.1-6.5) begins with a summary-at-a-glance which highlights key findings followed by an in-depth discussion of measures data, findings, and conclusions.

Interpretation of Results

Each measure was examined to determine whether it supported its associated hypothesis. There were three possible criteria for whether a measure supported a hypothesis. Summaries at the end of each research question provide details on the data and analyses utilized to determine whether a measure supported the hypothesis. See appendix G for a more detailed summary on statistically significant findings that contributed to support of hypotheses.

- ♦ **Yes** – *the analysis fully supports the hypothesis.* For the Medicaid claims-based measures, a measure analysis fully supports the hypothesis that there was significant change in the Demonstration period. For the process measures using qualitative data, the analysis supports the hypothesis that were strong indicators of positive change from a majority of stakeholders and, if applicable, they were supported by documentation/reporting.
- ♦ **Partially Supported** – *the analysis partially supports the hypothesis or there was mixed feedback from stakeholders on the measure*. For example: there may have been positive change during the Demonstration pandemic period (2020), but not during the Demonstration period (2016-2019), the population overall had worse outcomes during the post-period but the behavioral health population had a better outcome compared to the non-behavioral health outcome, the unmatched behavioral health population saw a positive outcome while the matched population did not, or qualitative had mixed or conflicting results. Partially supported results indicate a mixed result and should be interpreted with caution.
- ♦ **No** – *the analysis does not support the hypothesis*. Significant changes were not seen through analysis and/or qualitative data did not support the measure.

If the majority of measures were rated as "Yes" or "Partially Supported," then the hypothesis was supported by analysis. If the majority of hypotheses under a research question were supported by analysis, the Evaluation determines that the waiver goal was met.

IDN Characteristics

DSRIP's seven IDNs span across the ten counties of New Hampshire and are organized by regional public health network (see Figure 2.3—2). As shown below in Table 0-1, nine of New Hampshire's ten counties are designated as a rural area by the Federal Office of Rural Health Policy (FORHP).[42] Coos County (which lies solely in IDN 7) has a further designation of a Level 2 Frontier and Remote (FAR) Area. Frontier and Remote Areas are sparsely populated rural areas where residents are far from necessities such as healthcare. In Level 2 FAR areas, the majority of the population lives 60 minutes or more from an urbanized area.[43] IDN 7 also includes Carroll County, which is 90.2% rural and has been designated as a Medically Underserved Area (MUA) by the Health Resources and Services Administration. Additional MUAs as well as Health Professional Shortage Areas (HSPAs) are listed in Table 0-1.[44] Hillsborough County (which spans across IDNs 1-4) is the only county in New Hampshire that is not designated as rural. New Hampshire's most populous cities, Manchester, Nashua, and Concord, are located in IDNs 4, 3, and 2, respectively.

Table 0-1: Characteristics of New Hampshire Counties

County	IDNs Covered	Medically Underserved Area?	HPSA: Primary Care Provider Shortage?	HPSA: Mental Health Provider Shortage?	Percent Rural	FORHP Defined Rural Area?
Coos	IDN 7		●	●	66.2%	Rural AND Frontier and Remote Area
Belknap	IDN 5				66.3%	Rural
Carroll	IDN 7	●	●		90.2%	Rural
Cheshire	IDN 1		●		65%	Rural
Grafton	IDNs 1,5		●	●	68.7%	Rural
Hillsborough	IDNs 1,2,3,4				21.2%	Not Rural
Merrimack	IDNs 1,2,4,5				54.6%	Rural
Rockingham	IDNs 2,4,6	●			25%	Rural
Strafford	IDN 6	●			32.4%	Rural
Sullivan	IDNs 1,2		●		64.2%	Rural

In the Pre-Demonstration period, the IDNs in New Hampshire served 411,858 Medicaid Beneficiaries, 36.1% of whom had a behavioral health diagnosis. In the Demonstration period, New Hampshire served 689,322 Beneficiaries, 38.6% of whom had a behavioral health diagnosis. Table 0-2 provides the breakdown of Medicaid Beneficiaries by IDN as well as demographic characteristics of that population. As shown in Table 0-2, each IDN served an overall Medicaid population of between roughly 41,000 to 100,000 Beneficiaries in the Pre-Demonstration period, and roughly 63,000 to 173,000 in the Demonstration period. IDN 5 served the smallest number of Beneficiaries, and IDN 4 the largest number of Beneficiaries. The average age was 30 years in the pre-Demonstration period and 32 years

in the Demonstration periods for those with behavioral health diagnosis. The average age was lower for the non-behavioral health group across the study periods, from 19 years in the pre-Demonstration period to 22 years in the Demonstration period and 25 years in the Demonstration pandemic period. Across IDNs, the percent of dually eligible Beneficiaries decreased between the pre-Demonstration and Demonstration periods, and there were more female Beneficiaries.

Although the total number of Medicaid Beneficiaries varies by IDN, the majority of the IDNs served roughly the same number of Beneficiaries with a behavioral health diagnosis. The percentage of Beneficiaries with behavioral health conditions ranged from 36.5% - 40.5% with IDN 6 serving the highest number of individuals with behavioral health disorders. This distribution is consistent with the original design of the Demonstration. The average age of the behavioral health population falls roughly between 31 and 33 years across the IDNs and each IDN has a SUD diagnosis rate below 20%. The rate of chronic conditions listed in Table provides additional context of the implementation environment within each IDN.

Table 0-2: Medicaid Beneficiary Characteristics by IDN

IDN	Pre-Demonstration Period (2013-2015)					Demonstration Period (2016-2019)					Demonstration Pandemic Period (2020)				
	Medicaid Population Count	Percent of Population	Average Age	Percent Female	Percent Dual	Medicaid Population Count	Percent of Population	Average Age	Percent Female	Percent Dual	Medicaid Population Count	Percent of Population	Average Age	Percent Female	Percent Dual
IDN 1:	60,126 Beneficiaries					105,119 Beneficiaries					32,578 Beneficiaries				
BH	21,679	36.1%	29.5	56%	19.3%	39,939	38.0%	31.1	56.57	14.3%	11,240	34.5%	31.9	56.7%	15.2%
No BH	38,447	63.9%	18.2	53%	9.5%	65,180	62.0%	21.7	51.11	8.4%	21,338	65.5%	24.2	51.2%	9.4%
IDN 2:	43,280 Beneficiaries					68,036 Beneficiaries					20,762 Beneficiaries				
BH	15,690	36.3%	30.4	56%	21.3%	26,583	39.1%	32.8	56.47	18.0%	7,488	36.1%	33.8	56.5%	19.1%
No BH	27,590	63.7%	18.8	53%	9.0%	41,453	60.9%	22.4	52.37	8.2%	13,274	63.9%	25.7	51.9%	9.4%
IDN 3:	52,571 Beneficiaries					90,340 Beneficiaries					28,828 Beneficiaries				
BH	17,954	34.2%	30.1	56%	19.9%	33,775	37.4%	32.8	55.75	15.0%	9,722	33.7%	33.4	57.0%	15.2%
No BH	34,617	65.8%	18.1	53%	8.6%	56,565	62.6%	21.5	52.48	7.2%	19,106	66.3%	23.8	52.3%	7.6%
IDN 4:	100,076 Beneficiaries					173,151 Beneficiaries					53,808 Beneficiaries				
BH	36,017	36.0%	30.5	55%	19.4%	65,129	37.6%	31.2	54.8	14.9%	18,320	34.0%	32.8	55.2%	15.7%
No BH	64,059	64.0%	18.6	54%	8.5%	108,022	62.4%	21.5	52.24	7.4%	35,488	66.0%	24.3	51.7%	8.4%
IDN 5:	41,006 Beneficiaries					62,977 Beneficiaries					19,222 Beneficiaries				
BH	14,739	35.9%	29.8	57%	19.1%	24,540	39.0%	31.9	56.59	14.8%	6,929	36.0%	32.9	56.7%	15.1%
No BH	26,267	64.1%	17.9	52%	8.0%	38,437	61.0%	22.3	50.32	7.6%	12,293	64.0%	24.6	50.3%	8.0%
IDN 6:	71,334 Beneficiaries					120,192 Beneficiaries					37,764 Beneficiaries				
BH	27,044	37.9%	30.8	58%	19.2%	49,021	40.8%	32.9	58.12	14.9%	13,787	36.5%	32.9	58.4%	14.0%
No BH	44,290	62.1%	18.9	53%	9.8%	71,171	59.2%	22.3	51.94	8.2%	23,977	63.5%	25.3	51.9%	9.2%
IDN 7:	43,001 Beneficiaries					69,363 Beneficiaries					21,029 Beneficiaries				
BH	15,240	35.4%	29.8	55%	18.4%	26,916	38.8%	31.8	56.19	14.2%	7,417	35.3%	32.2	56.8%	14.9%
No BH	27,761	64.6%	20.5	52%	11.4%	42,447	61.2%	23.7	50.84	9.4%	13,612	64.7%	26.5	50.7%	10.9%

Source: Cutler Institute analysis of DSRIP Dataset. Numbers include attributed Beneficiaries with ≥10 months of enrollment in the period. Note: Beneficiaries are identified as having SUD based on diagnosis, use of SUD services including use of Buprenorphine as defined by the NH attribution extract specifications. For all periods, the total Medicaid population attributed to the IDNs are over the duration of the period.

Table 0-3: Chronic Conditions among Medicaid Beneficiaries by IDN

IDN	Pre-Demonstration Period (2013-2015)				Demonstration Period (2016-2019)				Demonstration Pandemic Period (2020)			
	Percent with SUD Diagnosis	Percent with 1 Chronic Condition	Percent with 2 Chronic Conditions	Percent with 3+ Chronic Conditions	Percent with SUD Diagnosis	Percent with 1 Chronic Condition	Percent with 2 Chronic Conditions	Percent with 3+ Chronic Conditions	Percent with SUD Diagnosis	Percent with 1 Chronic Condition	Percent with 2 Chronic Conditions	Percent with 3+ Chronic Conditions
IDN 1:	60,126 Beneficiaries				105,119 Beneficiaries				32,578 Beneficiaries			
BH	11.3%	11.0%	2.7%	0.6%	17.3%	11.4%	2.4%	0.4%	19.6%	11.4%	2.5%	0.57%
No BH	0.0%	4.8%	1.2%	0.3%	0.0%	4.9%	1.1%	0.2%	0.0%	5.0%	1.1%	0.2%
IDN 2:	43,280 Beneficiaries				68,036 Beneficiaries				20,762 Beneficiaries			
BH	10.9%	12.2%	3.2%	0.5%	17.7%	12.4%	2.8%	0.4%	19.1%	12.5%	2.9%	0.4%
No BH	0.0%	5.7%	1.0%	0.5%	0.0%	5.4%	1.0%	0.1%	0.0%	5.4%	1.0%	0.1%
IDN 3:	52,571 Beneficiaries				90,340 Beneficiaries				28,828 Beneficiaries			
BH	11.4%	12.6%	2.8%	0.6%	20.1%	12.7%	2.4%	0.4%	22.8%	12.5%	2.4%	0.4%
No BH	0.0%	5.1%	0.9%	0.1%	0.0%	5.4%	1.0%	0.1%	0.0%	5.6%	0.9%	0.1%
IDN 4:	100,076 Beneficiaries				173,151 Beneficiaries				53,808 Beneficiaries			
BH	12.6%	12.9%	3.2%	0.7%	18.8%	12.6%	2.3%	0.6%	20.0%	13.1%	2.9%	0.6%
No BH	0.2%	5.6%	1.3%	0.2%	0.2%	5.8%	1.2%	0.2%	0.0%	5.6%	1.1%	0.6%
IDN 5:	41,006 Beneficiaries				62,977 Beneficiaries				19,222 Beneficiaries			
BH	12.7%	12.2%	3.1%	0.7%	21.1%	12.0%	2.9%	0.5%	23.3%	12.2%	2.5%	0.4%
No BH	0.0%	4.6%	1.0%	0.2%	0.0%	5.2%	1.1%	0.2%	0.1%	4.5%	1.0%	0.2%
IDN 6:	71,334 Beneficiaries				120,192 Beneficiaries				37,764 Beneficiaries			
BH	11.7%	12.9%	3.5%	0.8%	19.4%	12.5%	3.0%	0.7%	20.7%	12.7%	2.6%	0.5%
No BH	0.1%	5.6%	1.4%	0.3%	0.1%	5.8%	1.2%	0.3%	0.0%	5.6%	1.2%	0.2%
IDN 7:	43,001 Beneficiaries				69,363 Beneficiaries				21,029 Beneficiaries			
BH	9.0%	12.9%	3.4%	0.7%	14.0%	12.6%	3.1%	0.6%	17.5%	12.6%	2.9%	0.5%
No BH	0.0%	6.0%	1.7%	0.4%	0.1%	6.0%	1.4%	0.3%	0.0%	5.7%	1.3%	0.3%

Source: Cutler Institute analysis of DSRIP Dataset. Numbers include attributed Beneficiaries with ≥10 months of enrollment in the period. Note: Beneficiaries are identified as having SUD based on diagnosis, use of SUD services including use of Buprenorphine as defined by the NH attribution extract specifications. For all periods, the total Medicaid population attributed to the IDNs are over the duration of the period.

6.1 Research Question 1

Access and Quality of Care, Service Utilization, Cost of Care, Population Health

6.1.1 Overview & Discussion of Hypotheses

> Was the DSRIP Demonstration effective in achieving the goals of better care for individuals (including access to care, quality of care, health outcomes), better health for the population, or lower cost through improvement? Was there any variation between IDNs/geographic regions/market areas? To what degree can improvements be attributed to the activities undertaken under DSRIP?

Research Question 1 encompasses five domains of the Demonstration's evaluation (access to care, quality of care, service utilization, cost of care, population health). The associated hypotheses postulate that, regardless of IDN, geographic location or market area, when compared to before the Demonstration, individuals will receive better care by the end of the Demonstration. Below is a list of hypotheses and an indication of whether the hypothesis was supported by analysis (Table 6.1-1).

Table 6.1-1: Research Question 1 Summary-at-a-Glance

Waiver Goal: Improve Access to Care, Quality of Care, and Health Outcomes While Reducing Health Care Costs	
Hypothesis	**Analysis Supports Hypothesis**
H1.1 Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care;	Yes
H1.2 Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care;	Yes
H1.3 Population health will improve;	Partially Supported
H1.4 The total cost of care will be lower for Medicaid Beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders;	No
H1.5 The rate of avoidable hospital re-admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower;	No
H1.6 The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders will be lower; and	Partially Supported
H1.8 Average length of stay for inpatient psychiatric care at New Hampshire Hospital will be lower.	No
Note: Hypotheses 1.7, 1.9, and 1.10 were removed from the study. See Appendix E for more details	

Summary:
     2 hypotheses are supported
     2 hypotheses are partially supported
     3 hypotheses are not supported	

Research Question 1: Results support waiver goal	

Research Question 1 had seven hypotheses (see above). Two of the hypotheses measures supported the waiver goal, two partially supported the waiver goal, and three did not support the waiver goal. **Therefore, as the majority of the hypotheses were supported or partially supported, the DSRIP Demonstration achieved its goal of better care for individuals.**

The first hypothesis had eighteen measures – of which four measures supported this hypothesis, six partially supported the hypothesis, and eight did not support the hypothesis. As the majority of the measures either fully or partially supported the hypothesis, **the DSRIP Demonstration successfully led to a higher quality of care for individuals with behavioral health or co-occurring physical and behavioral health disorders.**

The second hypothesis had five measures – of which one supported the hypothesis, three partially supported the hypothesis, and one did not support the hypothesis. Therefore, **the Demonstration successfully led to greater access to care for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders.**

The third hypothesis had two measures based on qualitative data (administrative and provider interviews) and data from the Behavioral Risk Factor Surveillance Survey (BRFSS). Data from the interviews partially supported improvements in strategies to improve population health and survey data did not show enough evidence to support improvements in population health. **While findings on whether the DSRIP Demonstration led to improvements in population health were mixed**, it is important to note that this may be in part due to the fact that the BRFSS data analyzed for this measure had several limitations discussed in Section 5.3.

The fourth hypothesis had eight measures based on Medicaid costs. Only one measure showed clear cost reductions (emergency department costs) and one measure partially supported whether there were improvements in cost (total cost of all outpatient care). There were no significant reductions in costs for all of the other cost measures. **The DSRIP Demonstration did not lead to lower costs of care for Medicaid Beneficiaries.**

The last three hypothesis pertained to service utilization. Hypothesis five was not supported through analysis, as neither of the measures supported improvements in rates of hospital readmissions; and, therefore, the evaluation found **the rate of avoidable re-admissions was not lower during any part of the Demonstration.** Hypothesis six was only partially supported the hypothesis; while the evidence was limited, the evaluation of the **DSRIP Demonstration showed some progress towards reducing the statewide rate of avoidable hospital admissions.** The final hypothesis related to service utilization was not supported as analysis of claims data showed that **the length of stay for inpatient psychiatric care at New Hampshire Hospital was not lower at the end of the Demonstration.**

For more details on the hypothesis and their associated measures, please see the [Summary](#) at the end of this section.

Below is a detailed discussion of each domain within research question one, its associated measures, and the evaluation findings. Key Findings for each domain are also presented within the next section.

6.1.2 Access to Care

Access to Care Key Findings

Cancer Screenings

- There were no significant changes in cervical cancer screenings from 2014 to 2018. However, BRFSS respondents (ages 21-65) without a behavioral health flag (self-reported by survey respondent to have 14 or more days of poor mental health days in the past 30 days) were significantly more likely to receive cervical cancer screenings than respondents with a behavioral health flag;
- Medicaid claims data shows Beneficiaries with a behavioral health disorder were significantly more likely to receive breast cancer screenings than those without a behavioral health disorder; and
- Analysis of BRFSS data shows there were no significant changes in colorectal cancer screenings from 2014 to 2018.

Health Care Visits

- Beneficiaries reported some improvements in access to care such as extended appointment hours, being able to contact their doctor 24 hours a day, and the expanded use of telehealth during the COVID-19 pandemic;
- Findings from both providers and Beneficiaries indicate the integration of behavioral healthcare providers into medical settings increased access to services by minimizing or avoiding the stigma some Beneficiaries felt around seeking behavioral health treatment;
- Beneficiaries with a behavioral health disorder were significantly more likely to receive an adolescent well-care visit compared to those without a behavioral health disorder during the Demonstration and Demonstration Pandemic periods However, all Beneficiaries were significantly less likely to receive well-care visits in the Demonstration period when compared to the pre-Demonstration study period;
- Beneficiaries aged 12-19 years old with a behavioral health disorder were significantly more likely to have a primary care visit compared to those without a behavioral health disorder in the Demonstration periods;
- Adult beneficiaries with a behavioral health disorder were significantly more likely to receive primary care compared to those without a behavioral health disorder during both the Demonstration and Demonstration Pandemic periods;
- While the proportion of adults with an ambulatory/preventive care visit significantly decreased over time for all Beneficiaries, the decrease in the rate of ambulatory and preventive care visits over time was greater for Beneficiaries without a behavioral health disorder; and
- There were no significant improvements in access to behavioral health care visits between the pre-Demonstration and Demonstration periods.

Medication Utilization and Management

- There was a significant increase in the likelihood of using AOD related treatment services between the pre-Demonstration and Demonstration periods.

6.1.2.1 USPSTF: Cervical Cancer Screening

The U.S. Preventive Services Task Force recommends screening for cervical cancer every three years for women ages 21 to 29 and every five years for women ages 30 to 65.[45] Behavioral Health Risk Factor Surveillance System (BRFSS) data was utilized to look at statewide cervical cancer screening rates based on self-reported frequency of Pap tests. Only data for 2014 and 2018 were available.

In 2018, 78% of BRFSS respondents (ages 21-65) with a behavioral health flag[5] had a Papanicolaou test (Pap test) in the past three years. This is a slight, but not significant, increase from 2014 (77%) (Table 6.1-2. Cervical Cancer Screening Over Time). Respondents ages 21-65 without a behavioral health flag were significantly more likely to have had a Pap test in the past three years than respondents who had a behavioral health flag (p<0.05, data not shown).

Compared to the national cervical cancer screening results for all respondents[46] (80%), New Hampshire had a higher screening rate (84%). Furthermore in 2018, 86% of respondents ages 30 to 65 with a behavioral health flag had a cervical cancer screening in the past five years, an increase from 2014 (82%). There was no change from 2014 to 2018 for the overall respondent pool.

Table 6.1-2. Cervical Cancer Screening Over Time

| Cervical Cancer Screening:	2014		2018		Difference between 2014 and 2018		
	Weighted Frequency	Percent	Weighted Frequency	Percent	Change in Percentage Points	Trend	p < 0.05
Within the past 3 years (ages 21-65, all respondents)	272,875	85%	278,500	84%	-0.02	▼	No
Within the past 3 years (ages 21-65, BH flag only)	27,387	77%	48,235	78%	0.01	▲	No
Within the past 5 years (ages 30-65, all respondents)	267,682	89%	279,641	89%	0.00	N/A	No
Within the past 5 years (ages 30-65, BH flag only)	29,553	82%	49,050	86%	0.04	▲	No

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[5] Behavioral Health Flag: self-reported by survey respondent to have 14 or more days of poor mental health days in the past 30 days

6.1.2.2 Breast Cancer Screening

The U.S. Preventive Services Task Force (USPSTF)[6] and American College of Physicians (ACP)[7] recommend women ages 50 to 74 have biennial mammograms for breast cancer screening. The breast cancer screening measure calculates the percentage of women 50-74 years of age that had a biennial mammogram screening for breast cancer.

In both the behavioral health and non-behavioral health groups, a greater percentage of women aged 50 to 74 were screened for breast cancer after implementation of the Demonstration. Women Beneficiaries with behavioral health disorders had a higher percentage of screenings than women without behavioral health disorders throughout the study period (Figure 6.1—1). Rates of breast cancer screening for women with behavioral health disorders increased from 38% to 46% between the pre-Demonstration and Demonstration periods. Breast cancer screening rates for women without behavioral health disorders increased from 30% to 39% during that same period. The screening rate dropped between the Demonstration pandemic period compared with the Demonstration period but remained significantly higher than the years prior to the Demonstration. However, even with these increases in screening rates, during the Demonstration and Demonstration pandemic periods, New Hampshire's rate of screening remained lower than the national averages for breast cancer screenings (58.3% to 58.9%; 53.7%).[8]

Figure 6.1—1. Percentage of Breast Cancer Screening Over Time
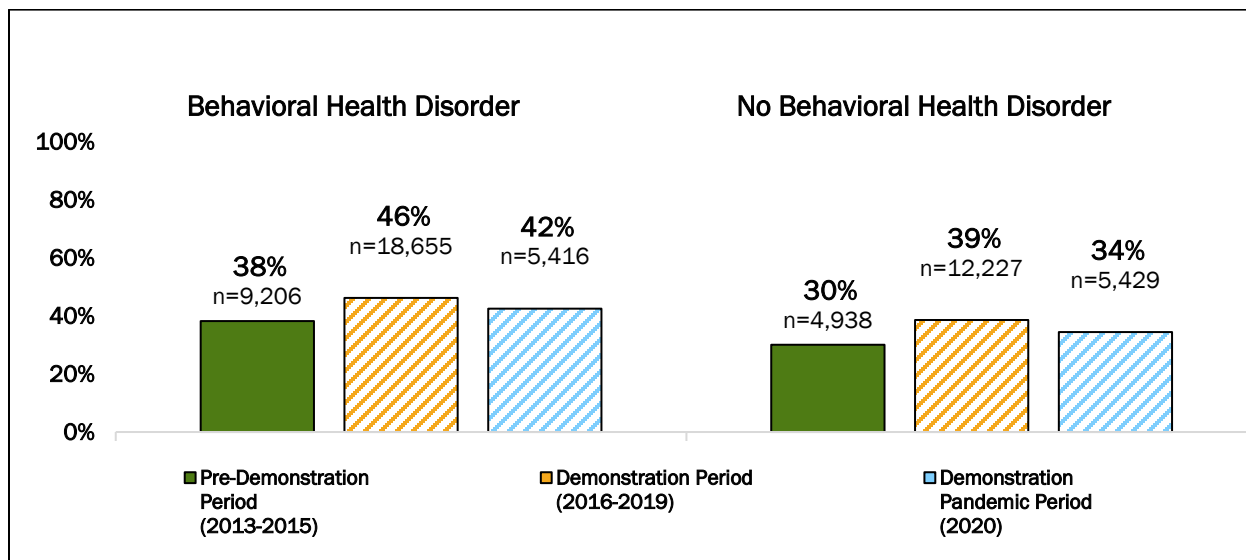
* Pattern within a column indicates significant change from Pre-Demonstration period

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[6] USPSTF Final recommendation: https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/breast-cancer-screening1 ; Retrieved Dec 20, 2021

[7] ACP recommendations: https://www.acponline.org/acp-newsroom/acp-issues-guidance-statement-for-breast-cancer-screening-of-average-risk-women-with-no-symptoms; Retrieved Dec 20, 2021

[8] National average HEDIS® benchmarks are not broken out by populations with or without behavioral health disorders.

When comparing Beneficiaries with behavioral health conditions to a matched group of non-behavioral health Beneficiaries with similar characteristics[9], breast cancer screenings were more likely to occur among the behavioral health group than the non-behavioral health group in all three time periods. Compared to the matched group of Beneficiaries without behavioral health conditions (Table 6.1-3), women Beneficiaries with behavioral health disorders were:

- ◆ **26% more likely** to have a mammogram screening in the pre-Demonstration (2013-2015)
- ◆ **25% more likely** to have a mammogram screening post implementation of the Demonstration (2016-2019)
- ◆ **32% more likely** to have a mammogram screening during the Demonstration pandemic period (2020)

The screening rates remained unchanged between the pre-Demonstration period and the Demonstration period for both those with and without behavioral health disorders. However, during the Demonstration pandemic period, the rates of screening decreased for both groups. The screening rates were 18.5% less likely to occur for beneficiaries without behavioral health disorders and 14.5% less likely for the behavioral health; however, the rate of decrease was similar (not significant) for both groups.

Table 6.1-3. Generalized Linear Models Estimating Breast Cancer Screenings

Propensity Matched Sample (N=119,938)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.2557	0.0482	1.1648	1.3538	<.0001
Demonstration Period (BH to Non-BH)	1.2525	0.0333	1.1889	1.3195	<.0001
Demonstration Pandemic Period (BH to Non-BH)	1.3172	0.0525	1.2182	1.4243	<.0001
Change Pre-Demonstration/ Demonstration Period BH sample	1.0069	0.0304	0.9490	1.0683	<.8205
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.8549	0.0329	0.7927	0.9220	<.0001
Change Pre-Demonstration/ Demonstration Period Non-BH sample	1.0095	0.0345	0.9440	1.0795	<.7831
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.8150	0.0326	0.7536	0.8815	<.0001

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[9] Propensity score matching, (PSM) was used to construct an artificial control group for regression analyses because there was no available random control group available for this evaluation. A control group of non-behavioral health Beneficiaries with similar characteristics including age, gender and risk score, where matched to Beneficiaries with behavioral health conditions to estimate the impact the Demonstration on key outcomes of interest. Please see Section 4.2.1.4.2 for more details on multivariate analysis and PSM.

Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH vs. Non-BH Time Interaction (Demonstration Period)	0.9974	0.0432	0.9163	1.0858	0.9528
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	1.0490	0.0560	0.9448	1.1646	0.3705

*Bold indicates significant (p<0.05)

Additional regression analysis of the behavioral health sample, in the absence of the comparison group, did not show a significant change between the pre-Demonstration and Demonstration periods when controlling for Beneficiary characteristics such as age, gender and geographic location of the beneficiary (Table 6.1-4). For the Unmatched Behavioral Health sample:

⬥ The decrease between the pre-Demonstration and Demonstration pandemic periods of 15% was significant;
⬥ Screening rates were lower for dually eligible and older beneficiaries, but higher for the expansion population; and
⬥ Beneficiaries with a higher risk score had lower screening rates.

Table 6.1-4: Generalized Linear Models Estimating Breast Cancer Screenings Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	1.2863	0.2814	0.7347	1.8378	<.0001
Demonstration Period	0.0721	0.0493	-0.0245	0.1688	0.1434
Demonstration Pandemic Period	-0.1617	0.0665	-0.2921	-0.0314	**0.0150**
Age	-0.0158	0.0047	-0.0251	-0.0065	**0.0008**
Dual Eligible	-1.3711	0.0571	-1.483	-1.2591	**<.0001**
Expansion Population	0.2393	0.0626	0.1165	0.3620	**0.0001**
ACG Risk Score	-0.0097	0.0029	-0.0153	-0.0040	**0.0008**
Large Rural	-0.1032	0.0689	-0.2382	0.0317	0.1338
Small Rural	-0.0043	0.0798	-0.1607	0.1521	0.9573
Isolated Rural	-0.0087	0.0859	-0.1771	0.1596	0.9192
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0748	0.0530	0.9758	1.1838	0.1434
BH Demonstration vs Pre-Demonstration Period	0.8507	0.0566	0.7467	0.9691	**0.0150**

*Bold indicates significant (p<0.05)

6.1.2.3 USPSTF: Colorectal Cancer Screening

The U.S. Preventive Services Task Force (USPSTF)[47] recommends screening for colorectal cancer starting at age 50 until age 75. The Behavioral Health Risk Factor Surveillance System (BRFSS) data was utilized to look at colorectal cancer screening via sigmoidoscopy or colonoscopy within the past three years. Only data for 2014 and 2018 were available.

In 2018, 53% of respondents ages 50-74 with behavioral health flag (14 or more days of poor mental health days in the past 30 days), had a screening for colorectal cancer in the past three years. There was no difference when compared to the overall respondent population and there was no significant increase in screening rates over the course of the Demonstration. Despite the stable trend, rates of screening for colorectal cancer in New Hampshire remain similar to national trends.[46]

Table 6.1-5. Colorectal Cancer Screening Over Time

| | 2014 | | 2018 | | Difference between 2014 and 2018 | | |
	Weighted Frequency	Percent	Weighted Frequency	Percent	Change in Percentage Points	Trend	P < 0.05
Within the past 3 years (ages 50-74)	162,839	52%	178,707	53%	0.01	▲	No
Within the past 3 years (ages 50-74, BH flag)	11,724	53%	16,955	53%	0.00	N/A	No

6.1.2.4 Adolescent Well Care Visit

Comprehensive annual check-ups are recommended for adolescents (ages 12 to 21). NH Medicaid promotes children and adolescent preventive health through the American Academy of Pediatrics (AAP) Bright Futures guidelines.[10] Annual check-ups are a key part of well-care. This indicator measures the percentage of adolescent Medicaid Beneficiaries who had a well-care visit within the calendar year.

Adolescents with a behavioral health disorder were more likely to have well-care visits than adolescents without behavioral health disorders in all study periods. Well-care visit rates declined over the study period for both groups -- from 53% in the pre-Demonstration period to 51% in the Demonstration period for adolescents with a behavioral health disorder. For adolescents without a behavioral health disorder, the drop was from 50% in the pre-Demonstration period to 45% in the Demonstration period. There was further decline during the Demonstration pandemic period for both populations. In the Demonstration period, the

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[10] Launched by HRSA's Maternal and Child Health Bureau in 1990, the Bright Futures initiative is focused at the American Academy of Pediatrics and a collaborative of other federally- and State-funded Bright Futures projects. More information can be found at: https://www.brightfutures.org/

National average HEDIS® benchmarks for adolescent well-care visits were higher than the NH rates ranging from 50.6% to 55.5% over the same period.[11]

Figure 6.1—2. Percentage of Adolescent Well-Care Visits over Time (ages 12-21)-Unadjusted
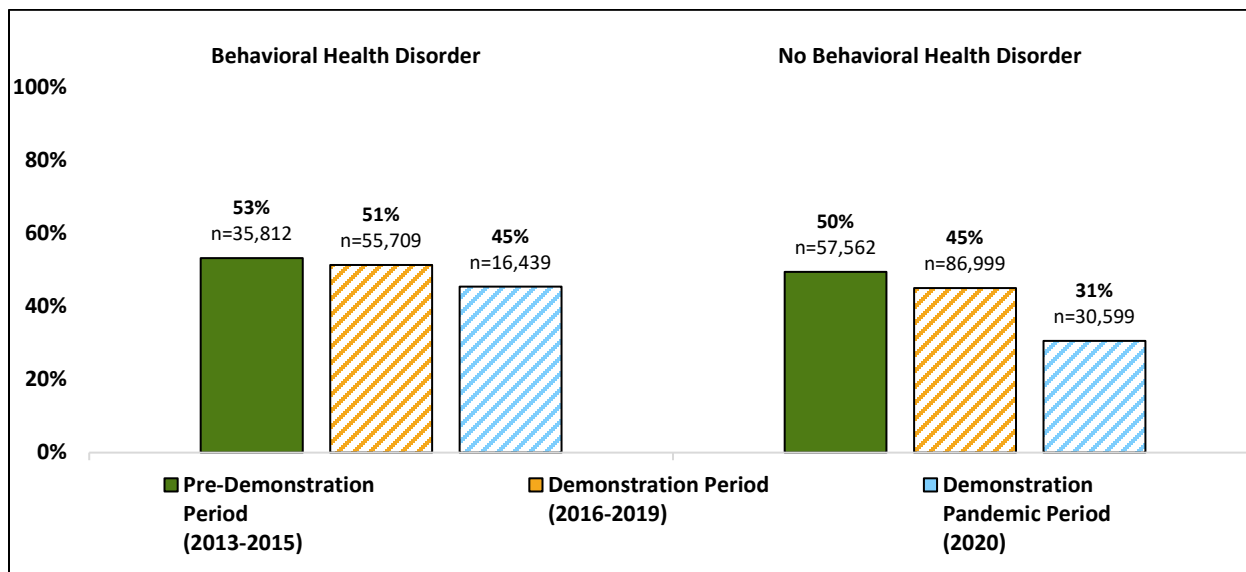
* Pattern within a column indicates significant change from Pre-Demonstration period

Multivariate analysis (Table 6.1-6) shows adolescents with a behavioral health disorder are more likely to have well-care visits than adolescents without a behavioral health disorder. Compared to Beneficiaries without a behavioral health disorder, adolescent beneficiaries with behavioral health disorders were:

✦ **7% more likely** to have an adolescent well-care visit in the pre-Demonstration (2013-2015).

✦ **33% more likely** to have an adolescent well-care visit post implementation of the Demonstration (2016-2019); and

✦ **63% more likely** to have an adolescent well-care visit during the Demonstration pandemic period (2020)

Adolescent well-child visits significantly decreased for both groups of adolescents between the pre-Demonstration and Demonstration study periods. Adolescents without a behavioral health disorder had a greater rate of decline in well-child visits than adolescents with a behavioral health disorder.

✦ There was a decline of 34.5% for non-behavioral health disorder group and 18.8% for behavioral health disorder group between the pre-Demonstration to Demonstration period.

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[11] National average HEDIS® benchmarks are not broken out by populations with or without behavioral health disorders.

◆ There was a decline of 61.7% for non-behavioral health disorder group and 41.5% for behavioral health disorder group between the pre-Demonstration and the Demonstration pandemic period.

◆ Although both the behavioral health disorder and non-behavioral health disorder populations were less likely to have an adolescent well-child visit in the Demonstration and pandemic periods, the rate of decline was significantly smaller among adolescents with a behavioral health disorder.

Table 6.1-6. Generalized Linear Models Estimating Adolescent Well-Care Visits

Propensity Matched Sample (N= 194,032)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.0689	0.0175	1.0352	1.1037	**<.0001**
Demonstration Period (BH to Non-BH)	1.3256	0.0177	1.2913	1.3607	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.6313	0.0391	1.5564	1.7098	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	0.8123	0.0113	0.7905	0.8348	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.5846	0.0115	0.5626	0.6075	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.6550	0.0096	0.6365	0.6741	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.3831	0.0082	0.3674	0.3994	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	1.2401	0.0249	1.1923	1.2899	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	1.5261	0.0440	1.4424	1.6148	**<.0001**

*Bold indicates significant (p<0.05)

Additional regression analysis on only adolescents with a behavioral health disorder did not show a significant change over time when controlling for covariates (Table 6.1-7).

Table 6.1-7. Generalized Linear Models Estimating Adolescent Well-Care Visits
Unmatched Behavioral Health Sample

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	3.1036	0.2432	2.6270	3.5802	<.0001
Demonstration Period	-0.0145	0.0642	-0.1403	0.1113	0.8209
Demonstration Pandemic Period	-0.0740	0.0854	-0.2414	0.0933	0.3858
Age	-0.1902	0.0143	-0.2183	-0.1622	**<.0001**
Female	0.1417	0.0611	0.0219	0.2615	**0.0205**
Dual Eligible	0.1790	0.2480	-0.3072	0.6651	0.4706
Expansion Population	-0.4378	0.0835	-0.6015	-0.2740	**<.0001**
ACG Risk Score	-0.0094	0.0083	-0.0256	0.0069	0.2577
Large Rural	-0.1003	0.0786	-0.2544	0.0538	0.2021
Small Rural	-0.2494	0.0919	-0.4296	-0.0693	**0.0067**
Isolated Rural	0.0171	0.1093	-0.1971	0.2313	0.8757
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9856	0.0633	0.8691	1.1177	0.8209
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9286	0.0793	0.7856	1.0978	0.3858

*Bold indicates significant (p<0.05)

When examining differences in rates of visits across IDNs, compared to the pre-Demonstration period, most IDNs saw a decrease in adolescent well-care visits during the Demonstration period, with the exception of IDN 1 which saw an increase from 47% to 49% among the behavioral health population (Figure 6.1—3). The decrease in adolescent well-care visits continued in the Demonstration pandemic period.

Figure 6.1—3. Percentage of Adolescent Well-Care Visits by IDN Behavioral Health Population (Unadjusted)
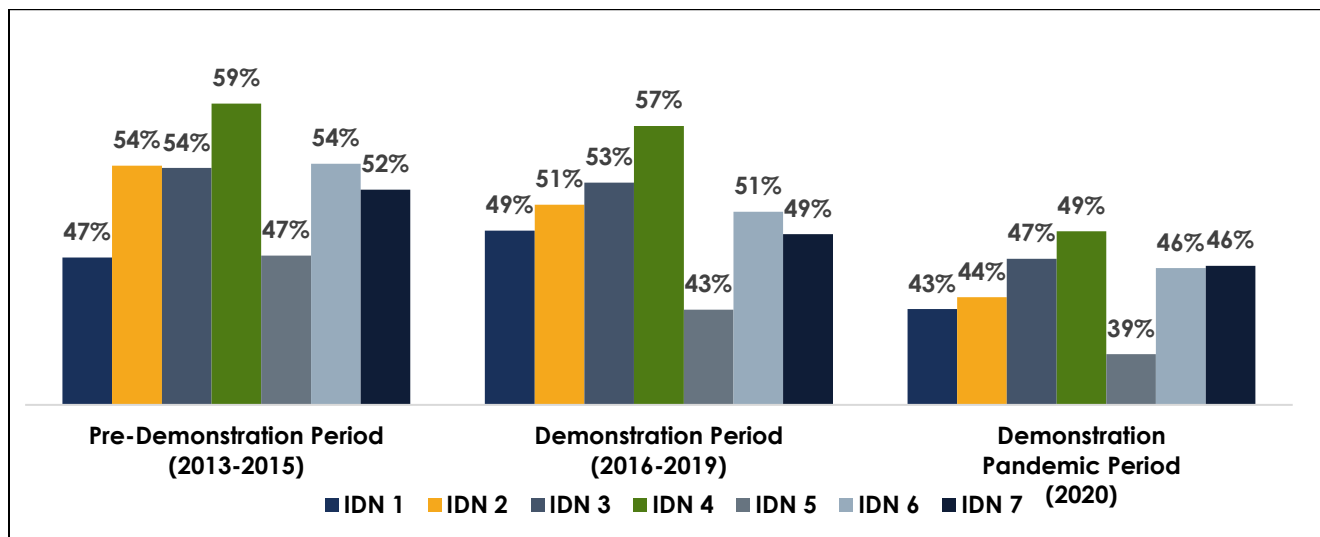
Without controlling for Beneficiary characteristics, results show significant differences for some IDNs compared to IDN 2 for adolescent well-care visits (Table 6.1-8). Significant differences include:

⬥ A higher percentage of Beneficiaries with behavioral health disorders in IDN 4, had an adolescent well-care visits in the pre-Demonstration period, while a lower percentage had visits in IDNs 1 and 5;

⬥ A higher percentage of Beneficiaries with behavioral health disorders in IDNs 3 and 4 had an adolescent well-care visits during the Demonstration period, while access to adolescent well-care visits was significantly lower in IDN 1, 5 and 7; and

⬥ A higher percentage of Beneficiaries with behavioral health disorders in IDN 4 had adolescent well-care visits during the Demonstration pandemic period and fewer beneficiaries in IDN 5.

Table 6.1-8. Adolescent Well Care Visits for IDNs with Significant Differences Compared to IDN2 Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Adolescent Well-Care Visit – BH Population	IDN 1	▼	IDN 1	▼	IDN 4	▲
	IDN 4	▲	IDN 3	▲	IDN 5	▼
	IDN 5	▼	IDN 4	▲		
			IDN 5	▼		
			IDN 7	▼		

After controlling for Beneficiary characteristics, regression results showed significant differences for two IDNs over time as compared to IDN 2. IDN 2 experienced a significant rate of decline between the pre-Demonstration period and both Demonstration periods. Compared to IDN 2:

- ✦ IDN 7 experienced a significantly greater rate of decline in the Demonstration pandemic (Figure 6.1—5).
- ✦ IDN 1 experienced a significant increase in access to adolescent well care visits in the Demonstration period. In contrast, IDN 1 experienced a significantly greater rate of decline in the Demonstration pandemic period (Figure 6.1—4 and Figure 6.1—5).
- ✦ There was no difference in the rates of decline observed in the other IDNs in either post period.

Figure 6.1—4. Results of Generalized Linear Model Estimating Rate of Change of Adolescent Well Care Visits Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
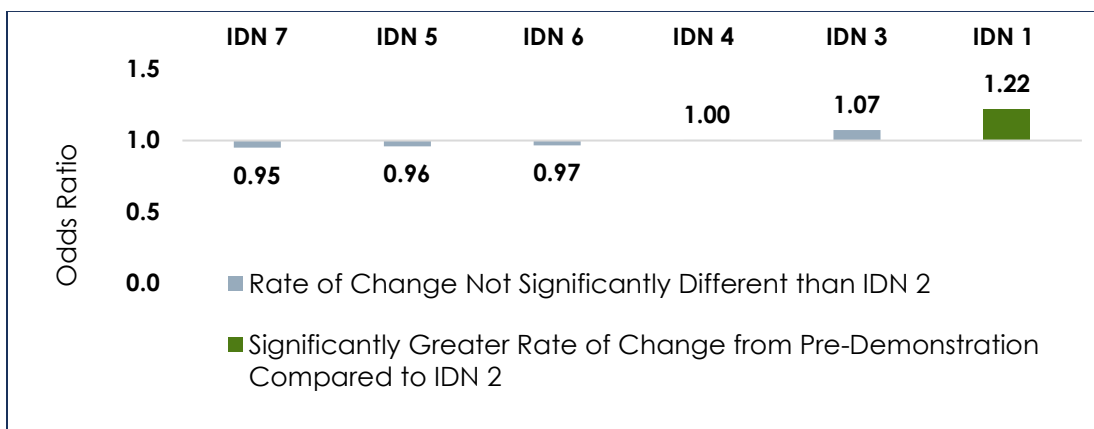
Figure 6.1—5. Results of Generalized Linear Model Estimating Rate of Change of Adolescent Well Care Visits Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
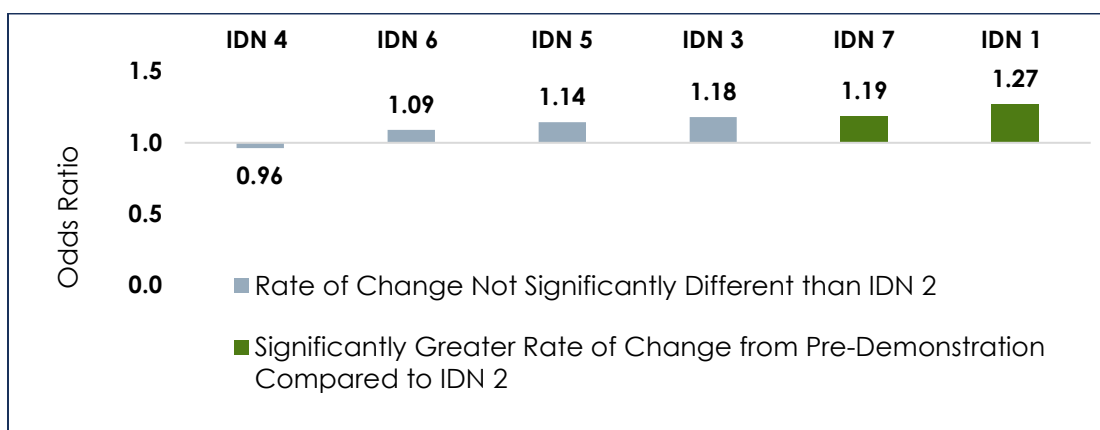
Table 6.1-9. Generalized Linear Models Estimating Adolescent Well-Care Visits
Behavioral Health Population

Parameter	Demonstration Period			Demonstration Pandemic Period		
	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration
IDN 2	0.8064	**<.0001**	▼	0.5522	**<.0001**	▼
Time Interaction						
IDN 1	1.2096	**0.0005**	▲	1.2841	**0.0012**	▲
IDN 3	1.0617	0.3056	▲	1.1518	0.0846	▲
IDN 4	1.0142	0.7826	▲	0.9876	0.8626	▼
IDN 5	0.9715	0.6378	▼	1.1497	0.1147	▲
IDN 6	0.9595	0.4385	▼	1.1007	0.2046	▲
IDN 7	0.9600	0.4929	▼	1.2056	**0.0261**	▲

*Bold indicates significant (p<0.05)

6.1.2.5 Primary Care Visits for Beneficiaries 12 to 19 Years of Age

Access to primary care influences the health and well-being of children and adolescents. Regular access to primary care services leads to health screenings, appropriate treatment, and preventative services. Quality services can reduce non-urgent ER visits for children.[48] This measure examines the percent of beneficiaries (ages 12 to 19) with one or more primary care visits in the past 12 months. This measure is not limited to a particular type of primary care visit as was measured in the Adolescent Well-Care visit examined above.

Adolescents with a behavioral health disorder consistently had a higher rate of primary care visits when compared to adolescents without a behavioral health disorder. Ninety-five percent of adolescents with a behavioral health disorder had a primary care visit during the pre-Demonstration and Demonstration periods. Adolescents without a behavioral health disorder had less access to primary care visits during the same periods (89% to 86%). Access to primary care further declined for adolescents without a behavioral health disorder during the Demonstration pandemic period to 77%. While access to primary care visits declined for both groups during the Demonstration Demonstration pandemic period, the rate of decline was not as dramatic among adolescents with a behavioral health disorder. During the Demonstration period, the national HEDIS average for this measure ranged from 88.5% to 88.8%.[12] This range of averages is comparable to the non- behavioral health adolescent population; however, adolescents in NH with a behavioral health disorder were more likely to have primary care visits when compared to the national HEDIS data.

Figure 6.1—6. Percentage of Primary Care Visits over Time (ages 12-19) - Unadjusted
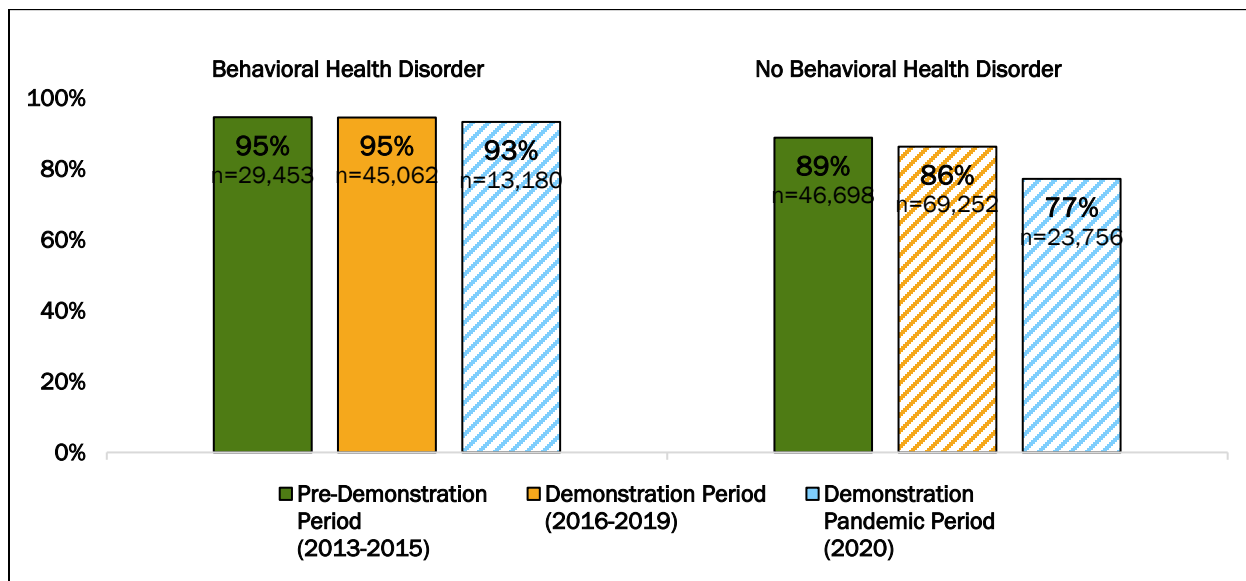
* Pattern within a column indicates significant change from Pre-Demonstration period

When comparing adolescents with behavioral health conditions to a matched group with similar characteristics without behavioral health conditions, adolescents with behavioral

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[12] National average HEDIS® benchmarks are not broken out by populations with or without behavioral health disorders.

health disorders were significantly more likely to have primary care visits. Compared to the non-behavioral health disorder group (Table 6.1-10), adolescent beneficiaries with behavioral health disorders were:

- **37% more likely** to have a primary care visit prior to the Demonstration (2013-2015);
- **Over two times (2.25) more likely** to have a primary care visit in the post implementation period (2016-2019); and
- **Three times more likely** to have a primary care visit during the Demonstration pandemic period (2020)

However, both groups of adolescents experienced a significant decline in the probability of having a primary care visit over the course of the Demonstration yet, the rate of decline was greater for adolescents without behavioral health disorders:

- In the Demonstration period, odds decreased by 44.4% for adolescents without behavioral health disorders compared to only 8.3% for those with behavioral health disorders; and
- In the pandemic period, odds decreased by 66.5% for adolescents without behavioral health disorders compared to 25% for those with behavioral health disorders.

Table 6.1-10. Generalized Linear Models Estimating Primary Care Visits (12-19 Years)

Propensity Matched Sample (N=156,991)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.3671	0.0494	1.2737	1.4674	**<.0001**
Demonstration Period (BH to Non-BH)	2.2549	0.0583	2.1434	2.3721	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	3.0641	0.1142	2.8482	3.2964	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	0.9173	0.0296	0.8612	0.9772	**0.0074**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.7505	0.0304	0.6931	0.8126	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.5562	0.0155	0.5266	0.5874	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.3348	0.0110	0.3140	0.3570	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	1.6494	0.0689	1.5198	1.7901	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	2.2413	0.1148	2.0273	2.4779	**<.0001**

*Bold indicates significant (p<0.05)

Looking at adolescents with behavioral health disorders, without a comparison group, there was no significant difference in their access to primary care over the study periods when controlling for key factors such as age, gender and geographic location (Table 6.1-11).

Table 6.1-11. Generalized Linear Models Estimating Primary Care Visits (12-19 years old) Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	3.6513	0.9010	1.8855	5.4172	<.0001
Demonstration Period	-0.2572	0.2131	-0.6749	0.1605	0.2274
Demonstration Pandemic Period	-0.0372	0.2962	-0.6177	0.5434	0.9001
Age	-0.0371	0.0564	-0.1476	0.0733	0.5100
Female	1.2634	0.2123	0.8473	1.6795	**<.0001**
Dual Eligible	-3.9395	1.2802	-6.4487	-1.4303	**0.0021**
Expansion Population	-0.5785	0.2956	-1.1579	0.0008	0.0503
ACG Risk Score	0.0398	0.0329	-0.0247	0.1042	0.2267
Large Rural	-0.3859	0.2479	-0.8718	0.1000	0.1196
Small Rural	-0.3682	0.2815	-0.9200	0.1835	0.1909
Isolated Rural	0.5203	0.4806	-0.4217	1.4623	0.2790
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.7732	0.1648	0.5092	1.1741	0.2274
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9635	0.2854	0.5392	1.7218	0.9001

*Bold indicates significant (p<0.05)

While access to primary care for adolescents with behavioral health conditions is very high in NH, there were differences observed across IDNs (Figure 6.1—7).

Figure 6.1—7. Percentage of Primary Care Visits for Adolescents by IDN Behavioral Health Population (Unadjusted)
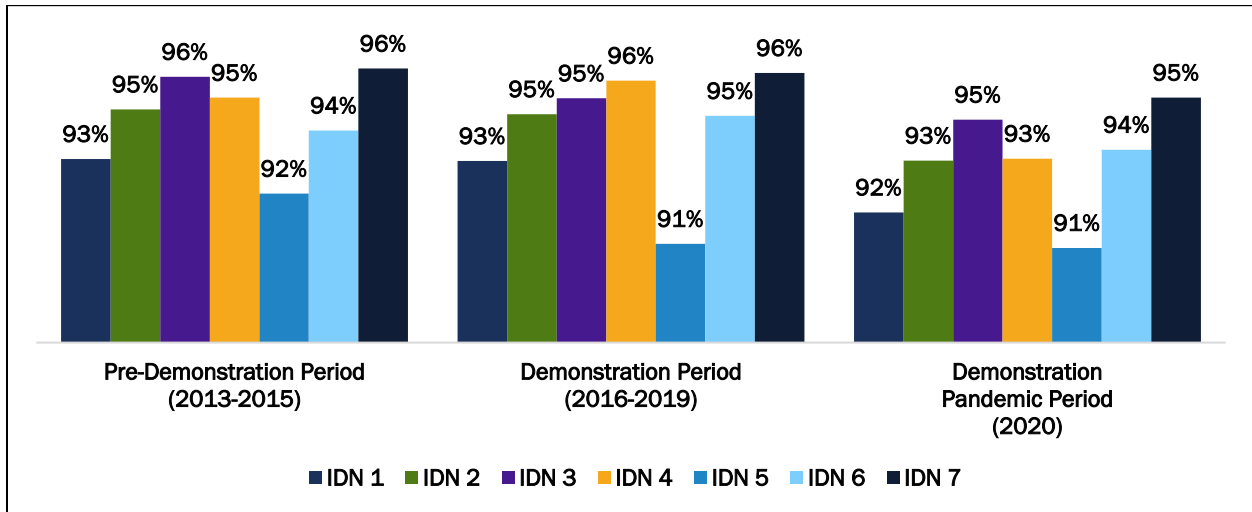
When compared to IDN 2, IDN 7 had consistently higher rates of primary care visits and IDN 5 had lower rates of adolescent primary care visits among adolescents with behavioral health conditions across all study periods (Table 6.1-12). IDN 1 had lower rates in the pre-Demonstration and Demonstration periods while IDN 4 saw an increase in the Demonstration period.

Table 6.1-12. Primary Care Visits for Adolescents for IDNs with Significant Differences Compared to IDN 2– Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Primary Care Visits (Ages 12-19)	IDN 1	▼	IDN 1	▼	IDN 5	▼
	IDN 5	▼	IDN 4	▲	IDN 7	▲
	IDN 7	▲	IDN 5	▼		
			IDN 7	▲		

After controlling for covariates, results showed no significant differences over time in primary care visits among adolescents with behavioral health conditions (Table 6.1-13).

Table 6.1-13. Generalized Linear Models Estimating Primary Care Visits (12-19 Years) by IDN

Parameter	Demonstration Period			Demonstration Pandemic Period		
	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration
IDN 2	1.0069	0.9479	▲	0.8141	0.1264	▼
Time Interaction						
IDN 1	0.9454	0.6680	▼	0.9518	0.7634	▼
IDN 3	0.8450	0.2535	▼	0.9352	0.7172	▼
IDN 4	1.0984	0.4620	▲	0.8873	0.4562	▼
IDN 5	0.8297	0.1890	▼	1.0675	0.7230	▲
IDN 6	1.0510	0.7070	▲	1.2056	0.2721	▲
IDN 7	1.0133	0.9324	▲	1.2331	0.3206	▲

*Bold indicates significant (p<0.05)

6.1.2.6 Beneficiary Experience of Accessing Care

There were common themes related to Beneficiaries perceived experiences accessing care between the 2019 and 2021 interviews. To better understand the integration process, interviews addressed Beneficiary behavioral healthcare and physical healthcare. Beneficiaries articulated diverse sets of challenges affecting their access to care across different sectors. Beneficiaries with behavioral health conditions described persistent barriers to accessing care. Beneficiaries reported that transportation remains a major obstacle to treatment initiation and engagement. It is well documented that in rural areas, transportation can be a barrier to accessing medical and/or behavioral health services.

In addition, Beneficiaries reported that physical and sensory disabilities can make a visit to a provider very challenging or impossible. Second floor or hard to reach offices, incompatible technology for individuals with a hearing impairment can make receiving services difficult.

> *"The communication with the providers for, I mean, you're just like leaving messages and no one calls back and it just is terrible."*
> - Medicaid Beneficiary (2019)

Finally, Beneficiaries mentioned other challenges to accessing behavioral health services such as a lack of knowledge of available resources in their area; stigma related to SUD; having to make connections for behavioral health directly without assistance; difficulty communicating or making contact with providers; insufficient time with providers; and poor communication related to changes to office hours or appointments.

> *"As far as getting an appointment with the mental health, and when you're telling them that you need to see somebody, taking weeks is not a good thing."*
> - Medicaid Beneficiary (2019)

Workforce issues also lead to limited available providers, fewer treatment options and locations as well as long wait times for services, all of which have an impact on Beneficiaries' access to care. Beneficiaries were divided in terms of their perception of access to behavioral health providers. For those who encountered less than favorable access, wait time to be seen (intake) was the most prevalent complaint. Some Beneficiaries mentioned waiting a year or more for behavioral health services. Many Beneficiaries noted that treatment services were simply not available in their community, or they experienced a lot of turnover in their provider care team. Across both interview periods, Beneficiaries mentioned that turnover among their providers discouraged them from maintaining engagement in their treatment, as having to repeatedly recount their behavioral health and medical history to a new provider was an unwanted experience.

Consistent with the existing research, Beneficiaries frequently cited financial barriers as obstacles to accessing care. Insurance coverage and out-of-pocket costs, such as losing pay at work for appointments and transportation costs, were the most common topics mentioned by the interviewees. They also noted the complexity of their insurance coverage through Medicaid (as well as Medicare) and expressed frustration with trying to navigate the benefit packages in order to pay for their medications or find behavioral health providers that would see them.

> *"The doctor's office will tell you they can't schedule it because they gotta get preapproval. Well, then you talk to the secondary insurance and the secondary insurance says that's not so, they don't need preapproval. So, again, it's the left hand doesn't know what the right hand's doing and that gets frustrating sometimes."*
>
> - Medicaid Beneficiary (2019)

Figure 6.1—8 below, summarizes the primary ways in which Beneficiaries acknowledged systemic factors impeding their healthcare access.

Figure 6.1—8.

Beneficiary Perspectives on Access

Staff Turnover – Beneficiaries notice how turnover affects provider availability

Accessibility – Beneficiaries with sensory and physical disabilities feel like the healthcare system could do more to support them

Technology – Some Beneficiaries express being unfamiliar or uncomfortable with new technology in use by providers

Treatment Location – Some Beneficiaries with SUD note that a lack of treatment facilities and providers means traveling long distances for treatment

Most of the Beneficiaries interviewed in 2021 had used **telehealth** to access healthcare services in the previous year due to COVID-19.

Most of the Beneficiaries who had used telehealth believed that it made accessing care **easier** because:

- Reduced need for childcare to attend appointments
- No travel time, transportation costs, or concerns around securing transportation associated with telehealth
- Less anxiety around attending mental health counseling from home

There were some concerns about not having sufficient internet connection to reliably attend telehealth appointments

Source: 2019 and 2021 Beneficiary Interviews

There was some evidence that access to care had improved for Beneficiaries based on qualitative data collected in 2021. Beneficiaries described being able to reach their doctor's office 24 hours a day or make appointments at more convenient times than they had been able to in the past, such as in the evenings. These improvements were most frequently reported by Beneficiaries in IDN 7. Other Beneficiaries reported a decrease in wait times to see a provider. They also acknowledged ways in which access to care was facilitated during the COVID-19 pandemic and related changes to internal organizational policy. Reports of improved access may have been influenced by changes to healthcare organizations that occurred in 2020, including the expansion of telehealth.

> *"I just got an appointment for like 5:40 at night, which is crazy because...for the longest time, you couldn't see them after 4:00 because they were closed."*
>
> - Medicaid Beneficiary (2021)

There were extensive reports from beneficiaries, corroborated by providers, that the expansion of telehealth facilitated improved access during the final year of the Demonstration. While some beneficiaries mentioned that limited access to technology and

internet was a problem, the use of telehealth was primarily referenced as a benefit. The availability of telehealth mitigated challenges to access including:

- Need for childcare to attend in-person appointments
- Need for transportation to attend in-person appointments (concerns around securing reliable transportation, paying for gas, or the time associated with traveling to appointments)
- Anxiety around attending in-person appointments

"I wasn't really aware of telehealth visits for people like me before the pandemic."

"We live.. it's in the middle of freaking nowhere... it's a long drive to get to anywhere we need to be, so having it over Zoom, for me, personally, has been kind of helpful"

- Medicaid Beneficiaries (2021)

6.1.2.7 Annual Primary Care Visit

This measure identifies the percentage of adults' (20 and older) use of ambulatory or preventive care visits.[49] Primary care is often the first place individuals with behavioral health concerns present and prior research shows that primary care physicians provide a considerable amount of office-based behavioral health services.[49] Moreover, individuals with behavioral health conditions comprise a medically complex population with high care needs; ongoing engagement with a primary care team is critical for improving patient outcomes, improving quality of life, and reducing associated heath care costs.

Over the study period, access to ambulatory or preventive care visits was higher for the behavioral health population than the non-behavioral health population (Figure 6.1—9). Adult access to preventive/ambulatory health services declined over the study period. Non-behavioral health adults experienced a significantly higher rate of decline in service use. Further decline occurred during the Demonstration Demonstration pandemic period. There are no national HEDIS® benchmarks for this measure.

Figure 6.1—9. Annual Access to Ambulatory / Preventive care Visits Over Time (Adults) - Unadjusted
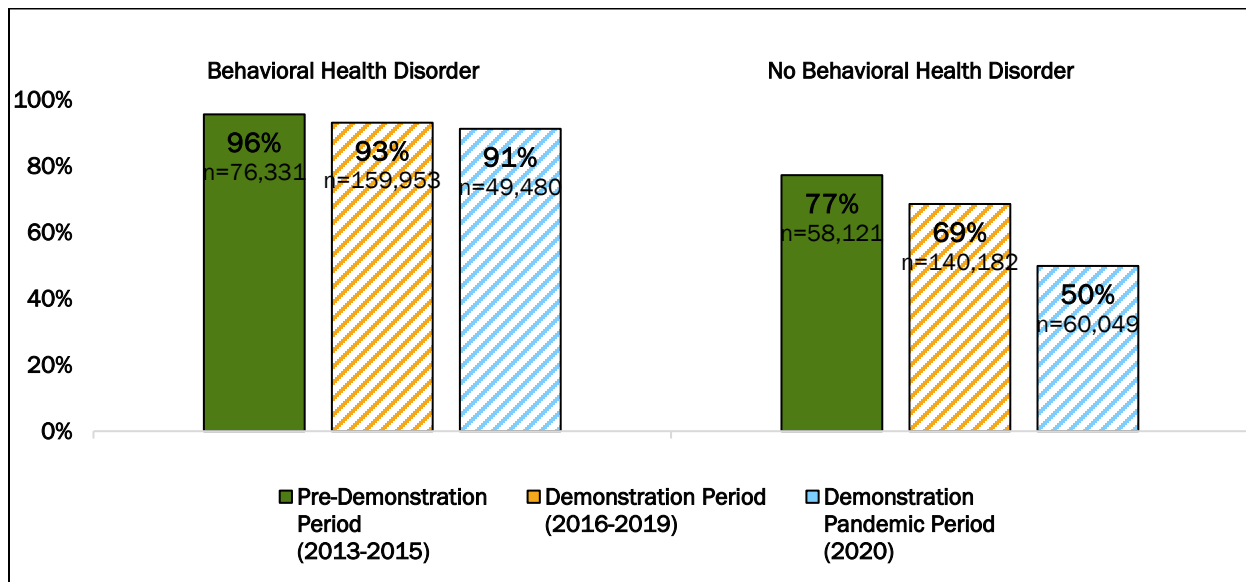
*Pattern within a column indicates significant change from Pre-Demonstration period

Results of the multivariate analysis (Table 6.1-14) shows that Beneficiaries with a behavioral health disorder were significantly more likely to have an ambulatory/preventive care visit than Beneficiaries with no behavioral health disorder in the Demonstration and Demonstration Pandemic periods. Compared to the non-behavioral health disorder sample, Beneficiaries with behavioral health disorders were:

- **Over three (3.5) times more likely** to have an ambulatory/preventive care visit prior to the Demonstration (2013-2015);
- **Almost 4 (3.8) times more likely** to have an ambulatory/preventive care visit post implementation of the Demonstration (2016-2019); and
- **Five times more likely** to have an ambulatory and preventive care visit during the Demonstration pandemic period (2020).

The proportion of adults with an ambulatory/preventive care visit significantly decreased over time. However, the decrease in the rate of ambulatory and preventive care visits over time was greater for Beneficiaries without a behavioral health disorder than those with behavioral health disorders:

⬥ There was a decline of 29.9% for Beneficiaries without behavioral health disorders and 22.8% for those with behavioral health disorders in the Demonstration period; and
⬥ There was a decline of 57.9% for Beneficiaries without behavioral health disorders and 40.0% for with behavioral health in the Demonstration Pandemic period.

Table 6.1-14. Generalized Linear Models Estimating Ambulatory / Preventive Care Visits

Propensity Matched Sample (N=418,502)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	3.5168	0.0631	3.3953	3.6427	**<.0001**
Demonstration Period (BH to Non-BH)	3.8726	0.0489	3.7778	3.9696	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	5.0118	0.0896	4.8393	5.1905	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	0.7720	0.0126	0.7477	0.7971	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.5998	0.0121	0.5764	0.6240	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.7011	0.0078	0.6859	0.7166	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.4209	0.0059	0.4095	0.4325	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	1.1011	0.0216	1.0596	1.1443	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	1.4251	0.0347	1.3587	1.4947	**<.0001**

*Bold indicates significant (p<0.05)

Similarly, the decrease in the proportion of adults with an ambulatory or preventive care visits for the behavioral health group only was significant after controlling for covariates (Table 6.1-15) in both the Demonstration (14%) and Demonstration Pandemic (17%) periods.

Table 6.1-15. Generalized Linear Models Estimating Ambulatory / Preventive Care Visits Unmatched Behavioral Health Sample

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	2.0874	0.1243	1.8437	2.3310	<.0001
Demonstration Period	-0.1512	0.0665	-0.2815	-0.0209	**0.0229**
Demonstration Pandemic Period	-0.1920	0.0829	-0.3544	-0.0296	**0.0205**
Age	0.0247	0.0024	0.0200	0.0293	**<.0001**
Female	1.1106	0.0516	1.0094	1.2119	**<.0001**
Dual Eligible	0.5853	0.0956	0.3979	0.7727	**<.0001**
Expansion Population	-0.7219	0.0644	-0.8481	-0.5957	**<.0001**
ACG Risk Score	0.0753	0.0087	0.0582	0.0924	**<.0001**
Large Rural	-0.1040	0.0693	-0.2398	0.0317	0.1330
Small Rural	0.0017	0.0825	-0.1600	0.1635	0.9831
Isolated Rural	0.4835	0.1243	0.2398	0.7272	**0.0001**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8597	0.0572	0.7546	0.9793	**0.0229**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.8253	0.0684	0.7016	0.9708	**0.0205**

*Bold indicates significant (p<0.05)

As noted in the overall results, access to ambulatory / preventive care visits for adult Beneficiaries with behavioral health disorders was very high ranging from 94% to 97% across IDNs in the pre-Demonstration period (Figure 6.1—10). While this rate declined over the study period, access to adults with behavioral health disorders remained above 90% even in the Demonstration pandemic period. When looking at rates of visits at the IDN level, over the study periods, IDN 7 had the highest access rates (97% to 93%) and IDN 1 the lowest rates (94% to 90%).

Figure 6.1—10. Percentage of Ambulatory and Preventive Care for Adults by IDN Behavioral Health Population (Unadjusted)
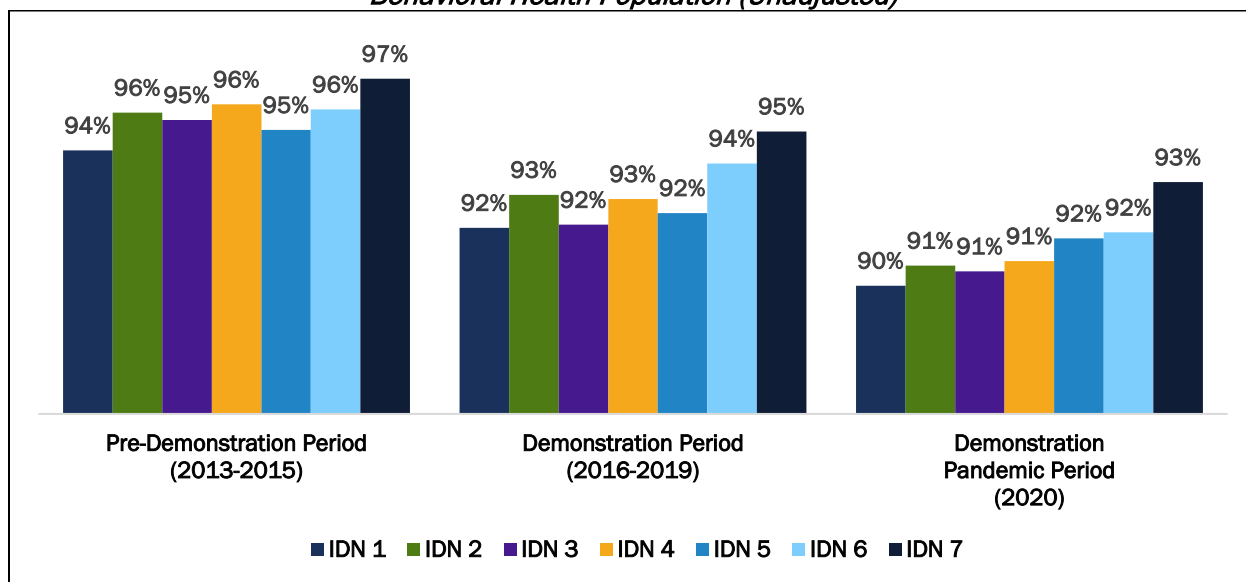
Without controlling for additional factors such as age and gender, results show significant differences for some IDNs compared to IDN 2 (Table 6.1-16). Significant differences compared to IDN 2 include:

- ✦ Lower access to ambulatory / preventive care visits for adult in IDN 1 in the pre-Demonstration period;
- ✦ Higher access to access to ambulatory / preventive care visits for adult for IDN 7 in the pre–Demonstration period;
- ✦ Lower access to access to ambulatory / preventive care visits for adult in IDNs 1,3, and 5 in the Demonstration period; and
- ✦ Higher access to ambulatory / preventive care visits for adult for IDNs 6 and 7 in both Demonstration periods (including Demonstration pandemic period).

Table 6.1-16. Ambulatory and Preventive Care for Adults by IDNs with Significant Differences Compared to IDN 2– Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Ambulatory and Preventive care Visits – Adults	IDN 1	▼	IDN 1	▼	IDN 6	▲
	IDN 7	▲	IDN 3	▼	IDN 7	▲
			IDN 5	▼		
			IDN 6	▲		
			IDN 7	▲		

After controlling for covariates, results showed significant declines in the rate of access for IDN 2 over the Demonstration pandemic period. No IDNs were significantly different than IDN 2.

Table 6.1-17. Generalized Linear Models Estimating Ambulatory and Preventive Care Visits for Adults – Behavioral Health Population

Parameter	Demonstration Period (2016-2019)			Demonstration Pandemic Period (2020)		
	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration
IDN 2	**0.8012**	**0.0009**	▼	**0.6110**	**<.0001**	▼
Time Interaction						
IDN 1	1.1040	0.2407	▼	1.1451	0.1672	▼
IDN 3	0.9199	0.3655	▼	1.0375	0.7266	▼
IDN 4	0.9400	0.4334	▼	0.9994	0.9952	▲
IDN 5	1.035	0.7127	▲	1.3387	**0.0087**	▼
IDN 6	1.1560	0.0846	▼	1.1752	0.0971	▲
IDN 7	1.0263	0.7999	▼	0.9835	0.8895	▼

*Bold indicates significant (p<0.05)

Figure 6.1—11 and Figure 6.1—12 present the percent of Beneficiaries with ambulatory and preventative care visits by four chronic conditions' subpopulations (asthma, COPD, CVD, diabetes). Beneficiaries with behavioral health disorders and a chronic condition had high access to ambulatory/preventive visits, even though some of the slight decreases in rates over the period were significant as compared to the pre-Demonstration period. Compared to the pre-Demonstration period:
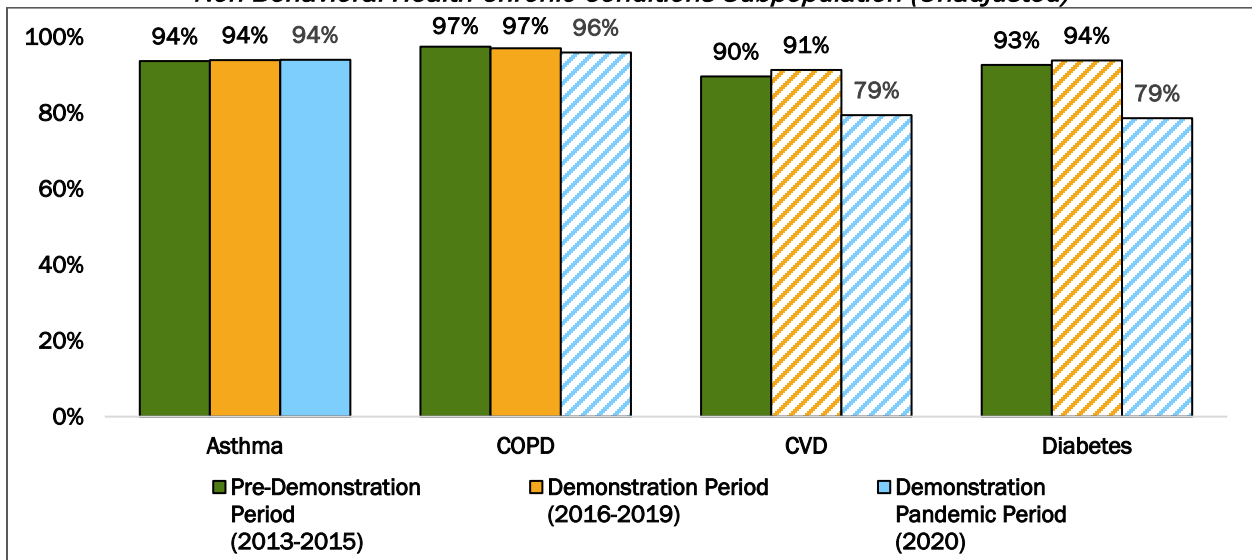
- ◆ Beneficiaries without behavioral health disorders' access to ambulatory/preventive visits, was lower than that observed in the behavioral health population;
- ◆ A slight, though significant improvement in access was observed for Beneficiaries without behavioral health disorders and CVD (90% to 91%) or diabetes (93% to 94%) in the Demonstration periods; and
- ◆ With the exception of asthma, for the Beneficiaries without behavioral health disorders, all experienced a decline in access to ambulatory/preventive care visits in the Demonstration Pandemic period. The decline was greatest in Beneficiaries without behavioral health disorders and CVD (decline of 12%) and diabetes (decline of 15%).

Figure 6.1—11. Ambulatory and Preventive Care Visits
Behavioral Health Chronic Conditions Subpopulation (Unadjusted)
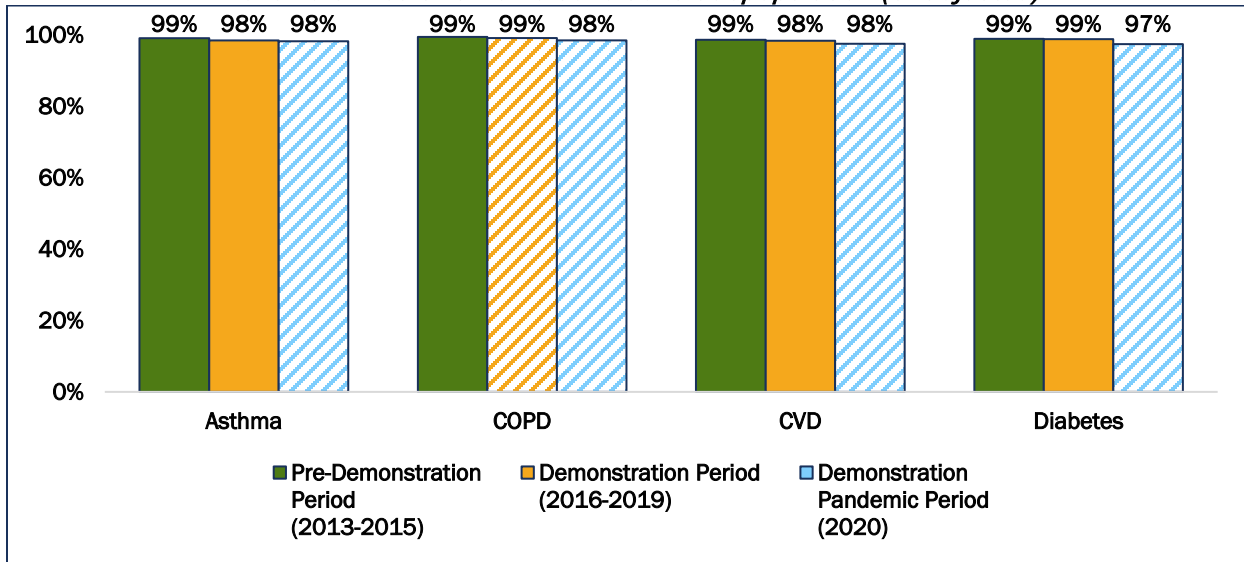
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—12. Ambulatory and Preventive Care Visits
Non-Behavioral Health Chronic Conditions Subpopulation (Unadjusted)

*Pattern within a column indicates significant change from Pre-Demonstration period

Results show that Beneficiaries with a behavioral health disorder were significantly more likely to have an ambulatory/preventive care visit than Beneficiaries with no behavioral health disorder in the Demonstration periods (Table 6.1-18). Compared to the non-behavioral health disorder group with chronic conditions in the pre-Demonstration Period, Beneficiaries with behavioral health disorders and chronic conditions were:

◆ **Over four or five times more likely** to have an ambulatory/preventive care visit based on their chronic condition prior to the Demonstration (2013-2015);

- **Over three times more likely** to have an ambulatory/preventive care visit post implementation of the Demonstration (2016-2019), although with Beneficiaries with asthma were slightly lower at 2.5 times more likely; and
- **With the exception of asthma where there was no significant difference, 2.4 to 4 times more likely** to have an ambulatory/preventive care visit during the Demonstration Pandemic period (2020).

Examining change from the pre-Demonstration period (Table 6.1-18):

- No significant change in the Demonstration sample with behavioral health disorders and chronic conditions was observed;
- For those without behavioral health disorders and diabetes or CVD access to ambulatory and preventive care significantly improved (33% for diabetes; 38% for CVD) in the pandemic period.
- With the exception of asthma, access to ambulatory and preventive care significantly declined for both samples in the Demonstration Pandemic period.

The rate of decline in access to ambulatory and preventive visits between the pre-Demonstration period and the Demonstration period for Beneficiaries in the BH sample with CVD or diabetes was significantly greater for the Beneficiaries without behavioral health disorders and the same condition. The rate of decline was similar in the asthma and COPD subpopulations.

With the exception of asthma where the rate of access for the non-behavioral health sample declined significantly faster, the rate of change in access to ambulatory and preventive care for adults between the pre and the Pandemic period was similar for the other chronic conditions.

Table 6.1-18. Generalized Linear Models Estimating Ambulatory and Preventive Care Visits –
Propensity Matched Sample by Chronic Conditions

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value
Pre-Demonstration Period (BH to Non-BH)	4.5761	**0.0002**	3.9094	**<.0001**	4.5001	**<.0001**	4.663	**<.0001**
Demonstration Period (BH to Non-BH)	2.4853	**<.0001**	3.3998	**<.0001**	3.0338	**<.0001**	3.5049	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.5552	0.1526	2.4992	**<.0001**	4.0496	**<.0001**	4.1834	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	0.6173	0.1501	0.7880	0.2524	0.9320	0.5385	0.9988	0.9905
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.4752	**0.0396**	0.4641	**0.002**	0.6208	**0.0010**	0.4379	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	1.1367	0.6316	0.9062	0.4195	1.3824	**<.0001**	1.3289	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	1.3982	0.3346	0.7260	**0.0448**	0.6898	**<.0001**	0.4881	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	0.5431	0.1616	0.8697	0.5625	0.6742	**0.0021**	0.7516	**0.0092**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.3398	**0.0340**	0.6393	0.1288	0.8999	0.5125	0.8971	0.3829

*Bold indicates significant (p<0.05)

There was significant change in access to ambulatory/preventive care visits over time when controlling for co-variates such as age and gender when looking at only individuals with behavioral health conditions and co-occurring chronic disease (Table 6.1-19). For the Beneficiaries with a behavioral health condition as well as a chronic diseases:

- There was a significant decline between the pre-Demonstration and Demonstration for Beneficiaries with COPD;
- There was a significant decline between the pre-Demonstration and Demonstration Pandemic periods among the COPD and CVD subpopulations;

- Access was lower for the expansion population among the CVD and diabetes subpopulations;
- Higher access was associated with female and older Beneficiaries for COPD;
- Higher access was associated with higher ACG scores for Beneficiaries with CVD; and
- Higher access was associated for those with COPD that reside in large urban areas. No other significant association was found with geographic location.

Table 6.1-19. Generalized Linear Models Estimating Ambulatory and Preventive Care Visits Beneficiaries with Chronic Conditions – Unmatched Behavioral Health Sample

Parameter	COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	3.0746	**<.0001**	4.4033	**<.0001**	6.4422	**<.0001**
Demonstration Period	-0.9188	**0.0072**	-0.3705	0.5147	-0.1706	0.6046
Demonstration Pandemic Period	-1.4128	**0.0003**	-1.2496	**0.0482**	-0.3299	0.4398
Age	0.0344	**0.0034**	0.0269	0.1111	-0.0247	0.0675
Female	0.6070	**0.0143**	0.2021	0.5686	0.6172	**0.0158**
Dual	0.2582	0.3893	-0.7094	0.0671	0.1739	0.5624
Expansion	-0.4487	0.0927	-1.1834	**0.0015**	-0.7833	**0.0078**
ACG Risk Score	0.0288	0.1196	0.0768	**0.0208**	0.0396	0.1474
Large Rural	1.2506	**0.0147**	-0.5225	0.2446	-0.4286	0.2011
Small Rural	0.3565	0.3405	-0.4245	0.4383	0.1997	0.6752
Isolated	0.0654	0.8675	0.8041	0.4348	-0.2829	0.5154
	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	0.3990	**0.0072**	0.6904	0.5147	0.8432	0.6046
BH Demonstration Pandemic vs Pre-Demonstration Period	0.2435	**0.0003**	0.2866	**0.0482**	0.719	0.4398

*Asthma not included in model due to lack of variance on the measure
*Bold indicates significant (p<0.05)

6.1.2.8 Behavioral Health Care Visits

One of the goals of the DSRIP Demonstration was to improve access to behavioral health care. This measure looks at access to behavioral health services for Beneficiaries aged twelve and over with a behavioral health disorder.

Approximately four out of five beneficiaries with a behavioral health disorder received behavioral health care services over the study period. A significant decrease in service use was observed from a high of 82% in the pre-Demonstration period to 80% in the Demonstration. Note that a similar decline occurred during the Demonstration Pandemic period. There were no national HEDIS® benchmarks for comparison.

Figure 6.1—13. Use of Behavioral Health Care Visits Over Time
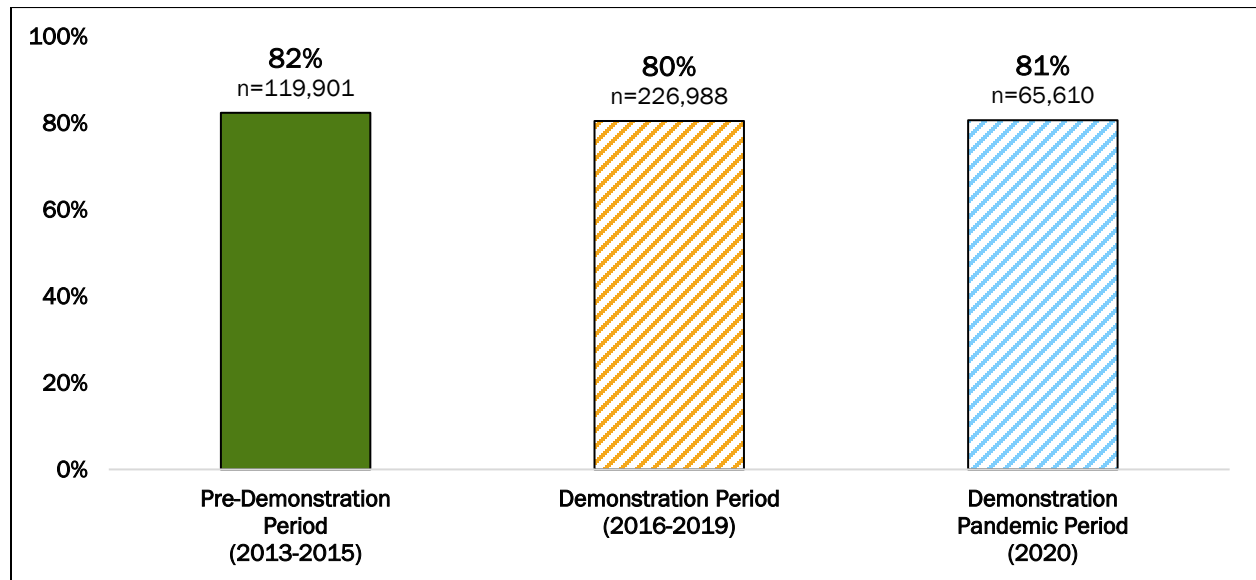
* Pattern within a column indicates significant change from Pre-Demonstration period

When controlling for covariates including age and gender, the observed decrease in access to behavioral health services was not significant in the Demonstration period but was significant in the Demonstration pandemic period (3%). Increased access to behavioral health visits was significantly related to Dual eligible Beneficiaries and individuals with higher risk scores (Table 6.1-20). Lower access was associated with being female, older and residing in rural areas.

Table 6.1-20. Generalized Linear Models Estimating Behavioral Health Care Visits Behavioral Health Population

Unmatched Sample (N=412,495)					
Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	2.3184	0.0160	2.2871	2.3497	<.0001
Demonstration Period	-0.0020	0.0091	-0.0199	0.0159	0.8243
Demonstration Pandemic Period	-0.0341	0.0119	-0.0575	-0.0108	**0.0042**
Age	-0.0273	0.0004	-0.0280	-0.0266	**<.0001**
Female	-0.1727	0.0111	-0.1945	-0.1509	**<.0001**
Dual Eligible	1.3386	0.0214	1.2966	1.3806	**<.0001**
Expansion Population	-0.1491	0.0107	-0.1701	-0.1281	**<.0001**
ACG Risk Score	0.0516	0.0014	0.0489	0.0544	**<.0001**
Large Rural	-0.1002	0.0141	-0.1278	-0.0726	**<.0001**
Small Rural	-0.1365	0.0162	-0.1683	-0.1046	**<.0001**
Isolated Rural	-0.2070	0.0179	-0.2421	-0.1719	**<.0001**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9980	0.0091	0.9803	1.0160	0.8243
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9664	0.0115	0.9441	0.9893	**0.0042**

*Bold indicates significant (p<0.05)

Over the course of the study periods, access to behavioral health care visits was fairly consistent across IDNs ranging from 78% to 84% (Figure 6.1—14).

Figure 6.1—14. Prevalence of Behavioral Health Care Visits by IDN (Unadjusted)
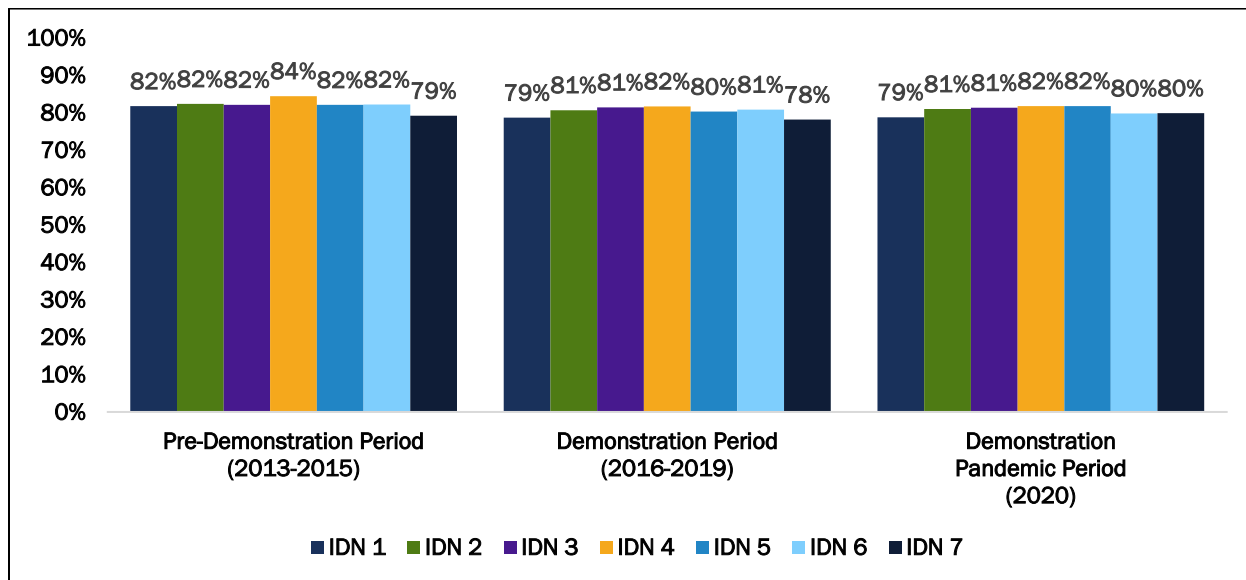
Results, not accounting for covariates such as age and gender, showed small but significant differences compared to IDN 2 (Table 6.1-21):

- ✛ In the pre-Demonstration period, IDN 4 had significantly higher rates of behavioral health care visits, IDN 7 had significantly lower rates with all other IDNs not being significant;
- ✛ In the Demonstration period, IDN 1 and 7 were significantly lower; and
- ✛ In the Demonstration pandemic period, only IDN 1 was significantly lower.

Table 6.1-21. Behavioral Health Care Visits by IDNs with Significant Differences Compared to IDN 2 – Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Behavioral Health Care Visits	IDN 4	▲	IDN 1	▼	IDN 1	▼
	IDN 7	▼	IDN 3	▲		
			IDN 4	▲		
			IDN 7	▼		

IDN 2 significantly declined by 8% in the Demonstration and 12% in the Demonstration Pandemic periods in behavioral health visits (Table 6.1-22). After controlling for covariates, only two IDNs had significant differences compared to IDN 2; Beneficiaries in IDN 1 and IDN 4 were 7% less likely to have a behavioral health care visits during the Demonstration period (Figure 6.1—15). There were no significant differences during the pandemic period (Figure 6.1—16).

Figure 6.1—15. Results of Generalized Linear Model Estimating Rate of Change of Behavioral Health Visits Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
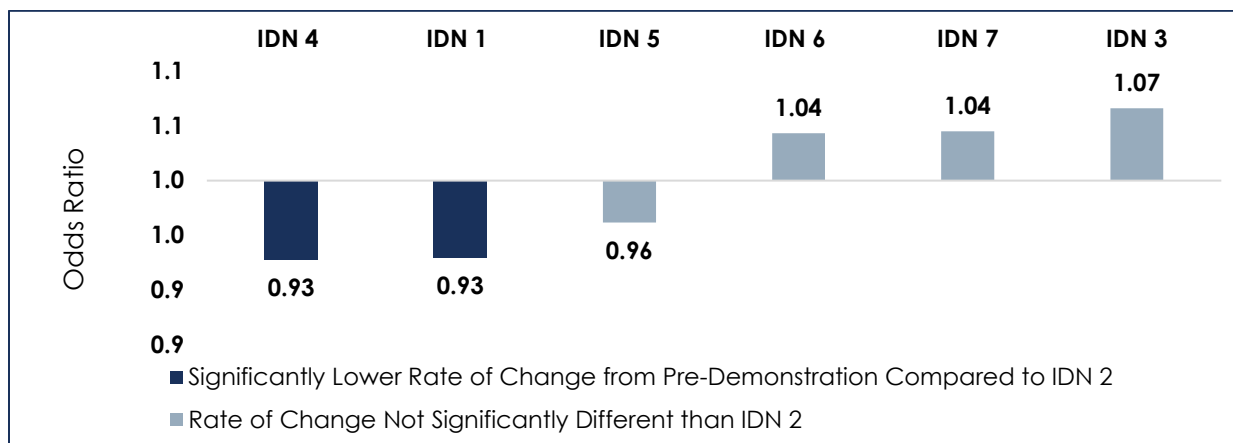
Figure 6.1—16. Results of Generalized Linear Model Estimating Rate of Change of Behavioral Health Visits Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
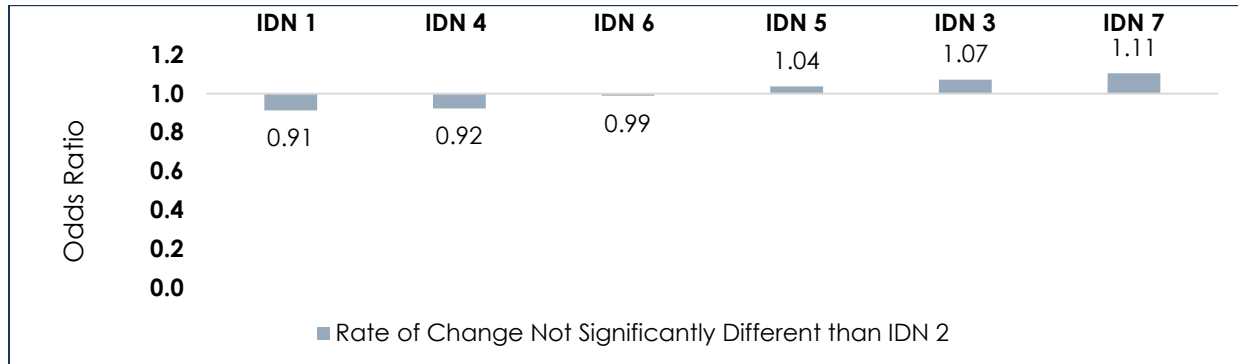

Table 6.1-22. Generalized Linear Models Estimating Behavioral Health Care Visits Behavioral Health Population

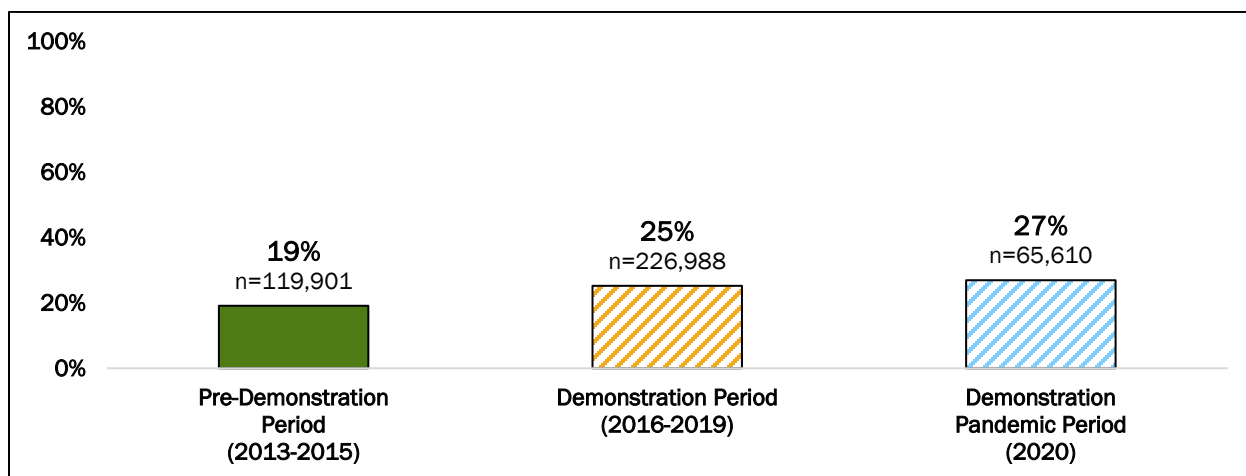| Parameter	Demonstration Period			Demonstration Pandemic Period		
	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration	Odds Ratio	P-Value	Increase or Decrease from Pre-Demonstration
IDN 2	0.9249	**0.0016**	▼	0.8844	**0.0002**	▼
Time Interaction						
IDN 1	0.9294	**0.0418**	▼	0.9136	0.0566	▼
IDN 3	1.0660	0.0833	▲	1.0716	0.1539	▲
IDN 4	0.9276	**0.0211**	▼	0.9240	0.0681	▼
IDN 5	0.9617	0.3279	▼	1.0367	0.4984	▲
IDN 6	1.0432	0.2154	▲	0.9892	0.8103	▼
IDN 7	1.0448	0.2567	▲	1.1054	0.0517	▲

*Bold indicates significant (p<0.05)

6.1.2.9 Substance Use Treatment Services

In September of 2014, NH Medicaid began to cover Alcohol and Other Drug (AOD) treatment services for the NH Expansion population. Prior to this time, contractors delivered services that were paid through the Substance Abuse and Mental Health Administration (SAMHSA) block grant funds. In July 2017, Medicaid coverage was expanded to cover AOD treatment services. This measure examines the use of substance use treatment services by Beneficiaries.

The utilization of substance use treatment services significantly increased from 19% during the pre-Demonstration period to 25% during the Demonstration period (Figure 6.1—17). There was an additional increase in the rate of substance use treatment services during the Demonstration Pandemic period (27%). There were no national HEDIS® benchmarks for this measure.

Figure 6.1—17. Use of Substance Use Treatment Services Over Time

*Pattern within a column indicates significant change from Pre-Demonstration period

While an increase in the likelihood of using AOD related treatment services is observed after controlling for Beneficiary characteristics of interest in the Demonstration period (14%), this is most likely due to the impact of the policy change in service coverage. Of significance is that this increase in service use continued in the Demonstration Pandemic period (20%).

Table 6.1-23. Generalized Linear Models Estimating Substance Use Treatment Services Behavioral Health Population

Behavioral Health Population (N=412,495)					
Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-1.4994	0.0143	-1.5275	-1.4713	<.0001
Demonstration Period	0.1304	0.0088	0.1131	0.1478	**<.0001**
Demonstration Pandemic Period	0.1808	0.0110	0.1592	0.2024	**<.0001**
Age	0.0057	0.0003	0.0051	0.0064	**<.0001**
Female	-0.7069	0.0117	-0.7298	-0.6839	**<.0001**
Dual Eligible	-0.1931	0.0189	-0.2301	-0.1561	**<.0001**
Expansion Population	0.5486	0.0116	0.5258	0.5713	**<.0001**
ACG Risk Score	0.0498	0.0009	0.0481	0.0514	**<.0001**
Large Rural	-0.0772	0.0164	-0.1093	-0.0451	**<.0001**
Small Rural	-0.1413	0.0196	-0.1797	-0.1028	**<.0001**
Isolated Rural	-0.2938	0.0226	-0.3381	-0.2496	**<.0001**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.1393	0.0101	1.1197	1.1592	**<.0001**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1982	0.0132	1.1726	1.2243	**<.0001**

*Bold indicates significant (p<0.05)

6.1.3 Quality of Care
Quality of Care Key Findings

Health Care Visits and Follow-Ups

- Some Beneficiaries noted positive changes in the quality of care they were receiving. Most Beneficiaries reported being satisfied with the level of patient-centered care delivered by their providers.
- Follow-up visits after hospitalization for mental illness were more likely within 30 days in the Demonstration period. In the Demonstration pandemic period, visits were more likely within 7 or 30 days; and
- Follow-up visits for children prescribed ADHD medication were more likely within 210 days (continuation and management phase) in the Demonstration period

Treatment

- For adolescents (ages 13-17), there were no significant changes in the likelihood of initiation and engagement in AOD treatment during all Demonstration periods;
- For the adult population (18+), initiation and engagement in AOD treatment was more likely within 30 days during the Demonstration period and 14 or 30 days during the Demonstration pandemic period; and
- First-line psychosocial care for children and adolescents on antipsychotics was less likely during the Demonstration pandemic period (2020).

Screening and Monitoring

- Beneficiaries with schizophrenia or bipolar disorder who were using antipsychotic medications were more likely to be screened for diabetes during the pandemic period;
- Beneficiaries with schizophrenia were more likely to have LDL-C and HbA1c tests in the Demonstration and pandemic periods;
- Beneficiaries with cardiovascular disease and schizophrenia were not more likely to receive cardiovascular monitoring in the Demonstration periods; and
- Children and adolescents on antipsychotics were not more likely to receive metabolic monitoring in all Demonstration periods.

Medication Utilization and Management

- Antidepressant medication management during the acute phase (first three months of treatment) was more likely during the pandemic period;
- Beneficiaries with schizophrenia were more likely to adhere to antipsychotic medications in the Demonstration pandemic period; and
- Beneficiaries with the greatest risk (i.e., unmatched sample) were less likely to use opioids at a high dosage during the Demonstration period.

6.1.3.1 Experiences of Health Care with DSRIP

Beneficiaries' satisfaction with the quality of the health care service they received seemed to hinge on being treated with respect by providers; having those that provide care take their time during appointments; and, having a provider with the communication skills to effectively listen, hear, and empathize with them while they were under their care. Among the Beneficiaries who discussed their behavioral health condition or substance use disorder, most affirmed that their PCP was aware of their behavioral health conditions(s). The majority of interviewed participants thought that there was communication of some sort between their PCP and the behavioral health providers, but Beneficiaries expressed that they were not always exactly sure how or when that communication occurred. It was reported by many Beneficiaries that their PCP was the principal manager for their medications for behavioral health issues.

An additional theme related to quality of care that emerged from Beneficiary interviews was the importance of flexibility of office hours and availability of care options, whether in-person or via telehealth. Nearly every Beneficiary that reported they took advantage of newly available telehealth services that were offered in response to the COVID-19 pandemic were satisfied with the quality of care they received and hoped to continue to be able utilize this option for receiving care in the future.

> *"It's (telehealth) so much better than having to go in and sit in the waiting room. I get more uptight if I'm sitting in front of the therapist, I think I get more stressed out, but being on the phone, I'm not so stressed out."*
>
> *"I wasn't really aware of telehealth visits for people like me before the pandemic."*
>
> -Medicaid Beneficiaries (2021)

In both 2019 and 2021, we asked Beneficiaries if, over the last 12 months, they had noticed any changes or improvements in the way they received services. We specifically probed for any changes with their medical care as well as with behavioral health care, including referrals to new providers or whether someone helped them organize their health care. Beneficiaries spoke about working with a wide variety of providers including caseworkers, social workers, nutritionists, and life coaches. Some Beneficiaries noted positive changes in the way their care was being handled during the Demonstration period.

> *"Well, I think I'm getting better care now . . .and better answers instead of beating around the bush. I feel like it's better because they can link me with those services and things that I need to do. My memory is horrible, I actually don't remember dates, times, things like that, so they help me remember everything, like every day. My job manager lady will call me every day and remind me what I need to do and stuff and check in with me and I really appreciate that."*
>
> -Medicaid Beneficiary (2019)

In both 2019 and 2021, less than ten Beneficiaries reported changes in social workers, vocational counselors, or case managers, over the previous 12 months. When staff turnover was discussed, it was largely due to maternity leave, provider retirement, providers leaving the system or area, and in 2021, staff re-deployments for COVID-19 pandemic services; overall, this finding shows continuity of care for Beneficiaries throughout both the

Demonstration and Demonstration pandemic periods. For the most part, any major changes in the integration or delivery of services that may have been Demonstration-driven were not entirely transparent to the Beneficiary and there were very few reports of disrupted care due to the pandemic.

> *"... they check up on me on the phone, leave messages on the answering machine if they can't get a hold of me, they'll ask we're just checking, could you give us a call back, you know, they're wonderful."*
>
> *"I find it better now than it actually was before the pandemic. I find the service is way better."*
> -Medicaid Beneficiaries (2021)

Ultimately, Beneficiaries interviewed in 2021 felt cared about by their providers. They appreciated the flexibility, patience, and engagement demonstrated by their primary care physician. Providers reportedly provided active outreach to Beneficiaries with high needs over the phone about appointments, referrals, and outstanding behavioral health or medical concerns, which helped to enhance trust between Beneficiaries and their providers. Some Beneficiaries also discussed how access to telehealth during the COVID-19 pandemic improved Beneficiary comfort during appointments, especially with behavioral health providers where sensitive topics felt more approachable to discuss in the comfort of their home as opposed to in the office.

Furthermore, the overall health care composite rating from the Beneficiary Experience Survey indicates the majority of Beneficiaries rate their health care positively. Over the three years of the survey administration, the statewide average for the mean composite score was 8.11 out of 10. *(Data not shown.)*

6.1.3.2 Antidepressant Medication Management

Initiation of antidepressant medication treatment must be closely monitored to assess improvement in symptoms of depression. An acute (first 3 months) and a continuation phase (continuous 6 months) are examined in this measure. During the acute phase, reduced symptoms of depression should be observed, followed by a six-month period of continued relief. Careful monitoring by providers is required.

Antidepressant medication management remained consistent during the pre and post periods of the Demonstration. During the acute phase of antidepressant treatment, over half (56%) of Beneficiaries received the required monitoring to induce remission in both the pre and post periods (Figure 6.1—18). Just over a third (36%) then received the continued management to preserve remission in both the pre and post periods. A significant improvement was observed in the Demonstration Pandemic period for both the acute (59%) and continuation (41%) phases of medication management.

The unadjusted NH rates were higher than the national HEDIS® benchmarks for the acute measure, which ranged from 50.5% to 54.5% in the pre-Demonstration period and from 53.1% to 55.0% in the Demonstration period. For the continuous measure, the unadjusted NH rates were more similar to national benchmarks in the pre-Demonstration period, as they ranged from 35.2% to 39.5% in the national data. In the Demonstration period, the NH rates were lower as the national data ranged from 37.9% to 39.3%.[50]

Figure 6.1—18. Percentage of Beneficiaries with Antidepressant Medication Monitoring (Acute and Continuation Phases) – Unadjusted
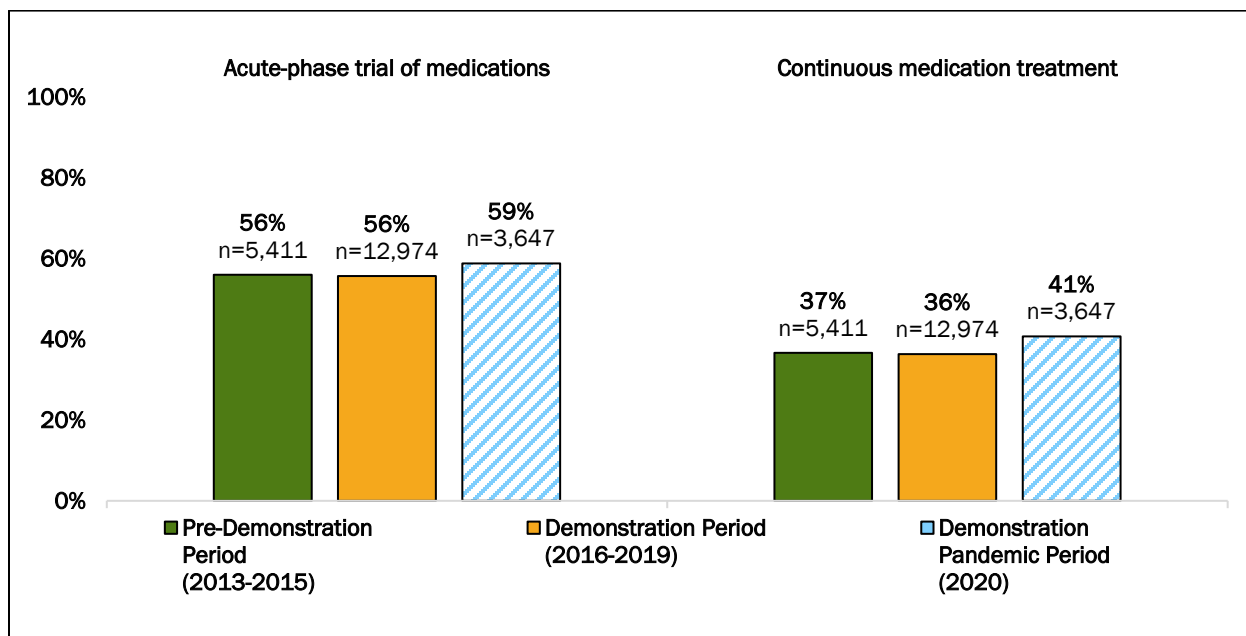
*Pattern within a column indicates significant change from Pre-Demonstration period

Multivariate analysis found no significant change in the Demonstration period for monitoring in the **acute phase**. However, a significantly higher (9%) likelihood of antidepressant medication monitoring during the acute phase was found in the Demonstration Pandemic

period when controlling for key factors such as age, gender and geography (Table 6.1-24). For the behavioral health population with antidepressant medication monitoring:

- Beneficiaries who were older, female, or living in small or isolated rural locations were more likely to have antidepressant medication monitoring in the first six months; and
- Beneficiaries with higher ACG risk scores were less likely to have antidepressant medication monitoring in the first six months.

Table 6.1-24. Generalized Linear Models Estimating Acute Antidepressant Medication Monitoring – Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.7714	0.0604	-0.8897	-0.6530	<.0001
Demonstration Period	-0.0451	0.0349	-0.1135	0.0233	0.1964
Demonstration Pandemic Period	0.0947	0.0456	0.0054	0.1841	**0.0376**
Age	0.0220	0.0012	0.0197	0.0242	**<.0001**
Female	0.2405	0.0308	0.1801	0.3008	**<.0001**
Expansion Population	0.1582	0.0311	0.0973	0.2191	**<.0001**
ACG Risk Score	-0.0153	0.0030	-0.0213	-0.0094	**<.0001**
Large Rural	0.0874	0.0389	0.0111	0.1636	**0.0247**
Small Rural	0.1319	0.0464	0.0410	0.2228	**0.0044**
Isolated Rural	0.0519	0.0544	-0.0547	0.1584	0.3400
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9559	0.0334	-0.1135	0.0233	0.1964
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0994	0.0501	0.0054	0.1841	**0.0376**

*Bold indicates significant (p<0.05)

There was no significant change in the **continuation phase** of medication management between the pre-Demonstration and Demonstration periods, when controlling for covariates. However, as shown in Table 6.1-25, there was a significantly higher likelihood that a Beneficiary would have continuous medication monitoring between the pre-Demonstration and Demonstration Pandemic periods (20%). For the Behavioral Health population with antidepressant medication monitoring:

- Screening rates were higher for the expansion population and lower for those with high ACG risk scores; and
- Higher screening rates were associated with Beneficiaries who were older, female, or those living in large or small rural geographic locations

Table 6.1-25. Generalized Linear Models Estimating Continuous Antidepressant Medication Monitoring – Behavioral Health

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	1.9559	0.0637	-2.0808	-1.8310	<.0001
Demonstration Period	-0.0184	0.0356	-0.0882	0.0515	0.6064
Demonstration Pandemic Period	0.1818	0.0462	0.0912	0.2723	**<.0001**
Age	0.0308	0.0012	0.0285	0.0331	**<.0001**
Female	0.2785	0.0322	0.2154	0.3417	**<.0001**
Expansion Population	0.1277	0.0323	0.0645	0.1910	**<.0001**
ACG Risk Score	-0.0079	0.0032	-0.0141	-0.0016	**0.0144**
Large Rural	0.0780	0.0401	-0.0006	0.1567	0.0519
Small Rural	0.1356	0.0470	0.0435	0.2278	**0.0039**
Isolated Rural	0.1128	0.0549	0.0052	0.2204	**0.0400**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9818	0.0350	0.9156	1.0528	0.6064
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1993	0.0554	1.0955	1.3130	**<.0001**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—19, acute phase antidepressant medication monitoring varied over the study periods by IDN. The percentage ranged 52% to 58% in the pre-Demonstration period, from 52% to 61% in the Demonstration period, and from 55% to 62% in the Demonstration Pandemic period. For the continuous phase (Figure 6.1—20), percentages were lower for all IDNs compared to the acute phase. IDN 1 had the highest percentage of acute and continuous phase antidepressant monitoring in the pre-Demonstration and Demonstration periods.

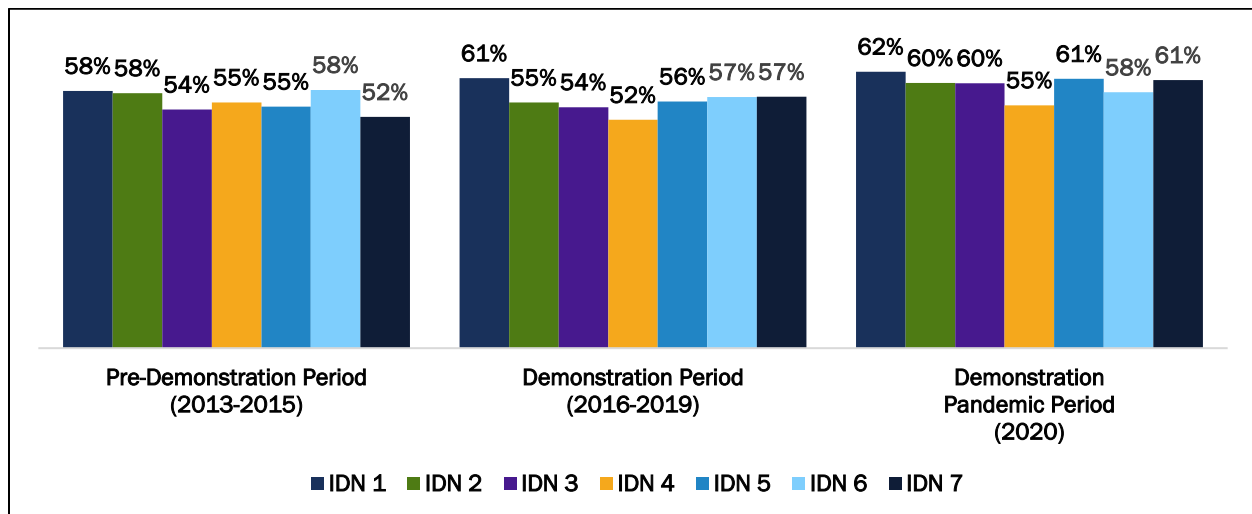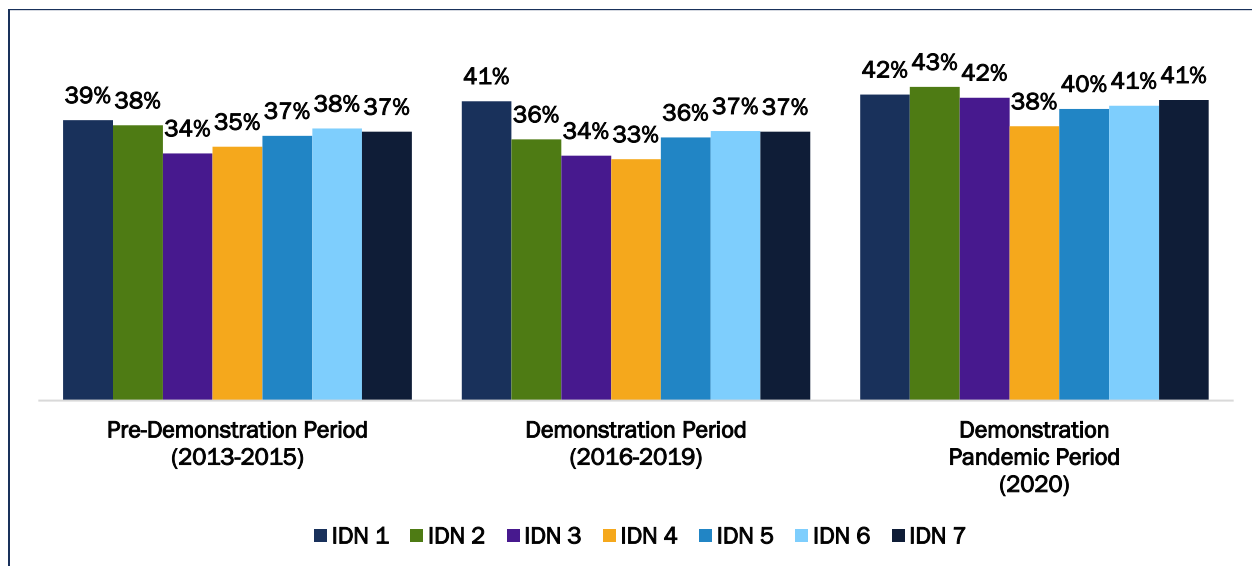*Figure 6.1—19. Percent of Acute Phase of Antidepressant Medication Monitoring by IDN*

Figure 6.1—20. Percentage of Beneficiaries with Continuation Phase of Antidepressant Medication Monitoring by IDN

Not controlling for other Beneficiary characteristics, regression results show significant differences for some IDNs compared to IDN 2 (Table 6.1-26):

- In the Demonstration Period, IDN 1 has significantly higher rates for the acute and continuous phases;
- In the Demonstration Period, IDN 4 had significantly lower rates in the acute phase

Table 6.1-26. IDNs with Significant Differences Compared to IDN 2 by Period - Antidepressant Medication Monitoring - Behavioral Health Population

Measure	Demonstration Period (2016-2019)	
	IDNs Significantly Different than IDN 2	Higher / Lower
AMM - Acute Phase	IDN 1 IDN 4	▲ ▼
AMM - Continuation Phase	IDN 1	▲

After controlling for age, gender, and patient acuity regression results did not show significant differences over time (Table 6.1-27, Table 6.1-28). Beneficiaries in IDN 2 were less likely to have antidepressant medication monitoring during the Demonstration phase and more like to have monitoring during the Demonstration Pandemic period; however, these findings were not statistically significant.

Table 6.1-27. Generalized Linear Models Estimating Acute Phase of Antidepressant Medication Monitoring – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.8730	0.2193	1.0649	0.6728
Time Interaction				
IDN 1	1.2266	0.1409	1.1230	0.5339
IDN 3	1.1539	0.3220	1.1984	0.3447
IDN 4	0.9637	0.7747	0.9006	0.5461
IDN 5	1.2189	0.1985	1.2063	0.3831
IDN 6	1.0237	0.8598	0.8848	0.4943
IDN 7	1.3018	0.0818	1.2575	0.2628

*Bold indicates significant (p<0.05)

Table 6.1-28. Generalized Linear Models Estimating Continuation Phase of Antidepressant Medication Monitoring – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.8903	0.2933	1.2201	0.1780
Time Interaction				
IDN 1	1.2156	0.1610	0.9511	0.7871
IDN 3	1.1324	0.3964	1.1844	0.3764
IDN 4	1.0587	0.6647	0.9679	0.8517
IDN 5	1.1601	0.3432	0.9695	0.8829
IDN 6	1.0945	0.4975	0.9444	0.7478
IDN 7	1.0756	0.6326	0.9113	0.6475

*Bold indicates significant (p<0.05)

### 6.1.3.3 Follow-up After Hospitalization for Mental Illness

Follow-up after mental health hospitalization is a measure of continuity of care for Beneficiaries (aged 6 and over) with mental health disorders or intentional self-harm. Regular follow-up with a mental health provider assures transitions back to the community and monitors reaction to medications.

In all three periods, approximately half of all hospital discharges for a behavioral health disorder, had a follow-up visit with a mental health practitioner within 7 days of discharge (Figure 6.1—21). Without controlling for other factors, a regression models found a significant decline in discharges for follow-up after mental health hospitalization in the Demonstration period compared to the pre-Demonstration period.

In all three periods, at least 64% of mental illness hospitalizations had a follow-up visit within 30 days of the discharge. Unadjusted regression found a significant decline in discharges for follow-up after mental health hospitalization in the Demonstration period than the pre-Demonstration period.

New Hampshire's rates were higher than the national average HEDIS® benchmarks in all periods for both the 7-day and 30-day measures. In the pre-Demonstration period, the 7-day national benchmarks ranged from 42.0% to 43.9% and the 30-day benchmarks ranged from 35.8% to 45.5%. In the Demonstration period, the 7-day national benchmarks ranged from 61.2% to 63.0% and the 30-day benchmarks ranged from 56.8% to 63.8%.[50]

Figure 6.1—21. Percentage of Discharges for Mental Health Hospitalization with Follow-up Visit – Unadjusted
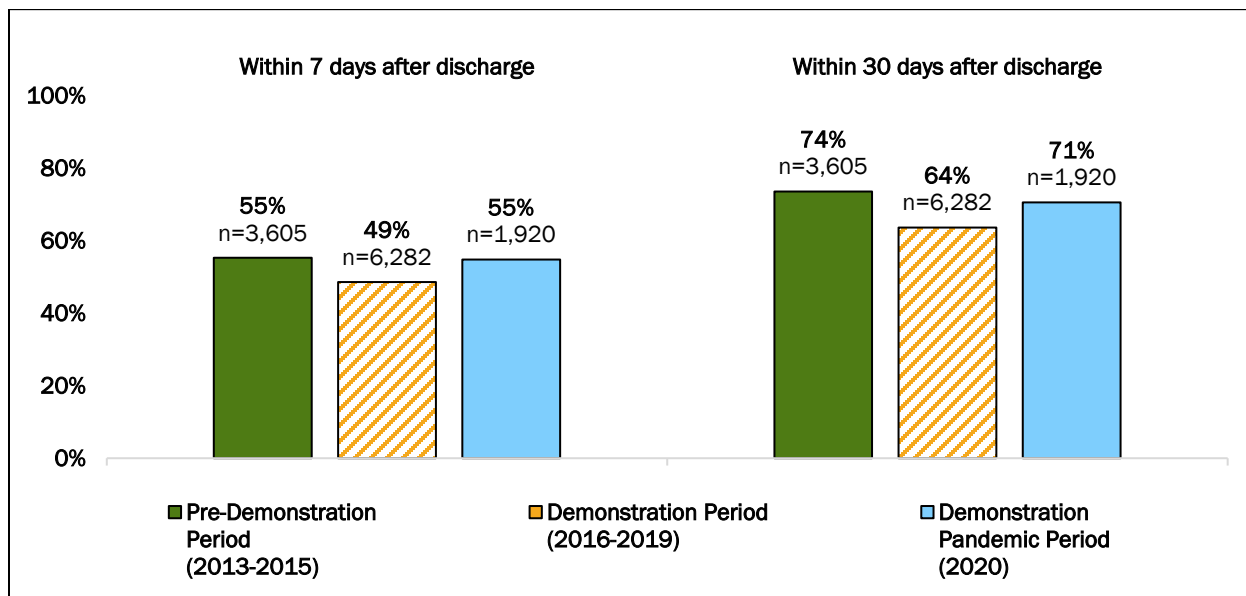
*Pattern within a column indicates significant change from Pre-Demonstration period

Multivariate analysis found a significantly higher (11%) likelihood of a 7-day follow-up visit following hospitalization in the Demonstration Pandemic period when controlling for age, gender, dual eligibility, whether the Beneficiary was enrolled in the expansion program,

patient acuity (ACG risk score), and rurality of Beneficiary location (Table 6.1-29). Results of the model also found that:

- Follow-up Visits within 7 days were more likely for dually eligible Beneficiaries, but lower for the expansion population;
- Higher follow-up rates were associated with females and geographic location (large & small rurality); and
- Lower follow-up visits rates were associated with Beneficiaries who were older

Table 6.1-29. Generalized Linear Models Estimating Mental Health Hospitalization Follow-up Visit within Seven Days - Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.6682	0.0269	-0.7210	-0.6154	<.0001
Demonstration Period	-0.0177	0.0192	-0.0552	0.0199	0.3566
Demonstration Pandemic Period	0.1004	0.0258	0.0498	0.1509	**0.0001**
Age	-0.0022	0.0007	-0.0036	-0.0008	**0.0018**
Female	0.0576	0.0189	0.0205	0.0947	**0.0024**
Dual Eligible	0.2818	0.0248	0.2332	0.3305	**<.0001**
Expansion Population	-0.3132	0.0260	-0.3641	-0.2624	**<.0001**
ACG Risk Score	-0.0007	0.0014	-0.0034	0.0020	0.6266
Large Rural	0.1084	0.0234	0.0626	0.1543	**<.0001**
Small Rural	0.1414	0.0277	0.0871	0.1957	**<.0001**
Isolated Rural	0.0567	0.0404	-0.0225	0.1358	0.1606
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9825	0.0188	0.9463	1.0201	0.3566
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1056	0.0285	1.0510	1.1629	**0.0001**

*Bold indicates significant (p<0.05)

Multivariate analysis controlling for patient characteristics showed significant changes over time for the 30-day follow-up. The likelihood of a 30-day follow-up visit following hospitalization decreased by 5% in the Demonstration period and increased by 5% in the Demonstration Pandemic period. Results of the model also found:

- A higher likelihood of follow-up visits were associated with dually eligible Beneficiaries but lower for the expansion population;
- A higher rate of follow-up visits were associated with being female, higher ACG score, and rural geographic location; and
- A lower rate of follow-up visits were associated with older Beneficiaries

Table 6.1-30. Generalized Linear Models Estimating Mental Health Hospitalization Follow-up Visit within Thirty Days - Behavioral Health Group

| Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.3607	0.0189	-0.3977	-0.3237	<.0001
Demonstration Period	-0.0508	0.0129	-0.0760	-0.0256	**<.0001**
Demonstration Pandemic Period	0.0507	0.0176	0.0162	0.0852	**0.0040**
Age	-0.0022	0.0005	-0.0032	-0.0013	**<.0001**
Female	0.0565	0.0135	0.0300	0.0831	**<.0001**
Dual Eligible	0.2142	0.0169	0.1811	0.2474	**<.0001**
Expansion Population	-0.2604	0.0187	-0.2970	-0.2237	**<.0001**
ACG Risk Score	0.0013	0.0009	-0.0005	0.0031	0.1705
Large Rural	0.0842	0.0163	0.0522	0.1162	**<.0001**
Small Rural	0.1279	0.0186	0.0914	0.1643	**<.0001**
Isolated Rural	0.0752	0.0272	0.0218	0.1286	**0.0058**
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9505	0.0122	0.9268	0.9748	**<.0001**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0520	0.0185	1.0163	1.0889	**0.0040**

*Bold indicates significant (p<0.05)

Among the chronic conditions' subpopulations (asthma, COPD, CVD, diabetes), there was a decline of follow-up visits after hospitalization for mental health within 7 days and 30 days over time, but this decline was not shown to be statistically significant through simple regression analysis (Figure 6.1—22, Figure 6.1—23).

Figure 6.1—22. Discharges for Mental Health Hospitalization with Follow-up Visit Within 7 Days by Chronic Conditions
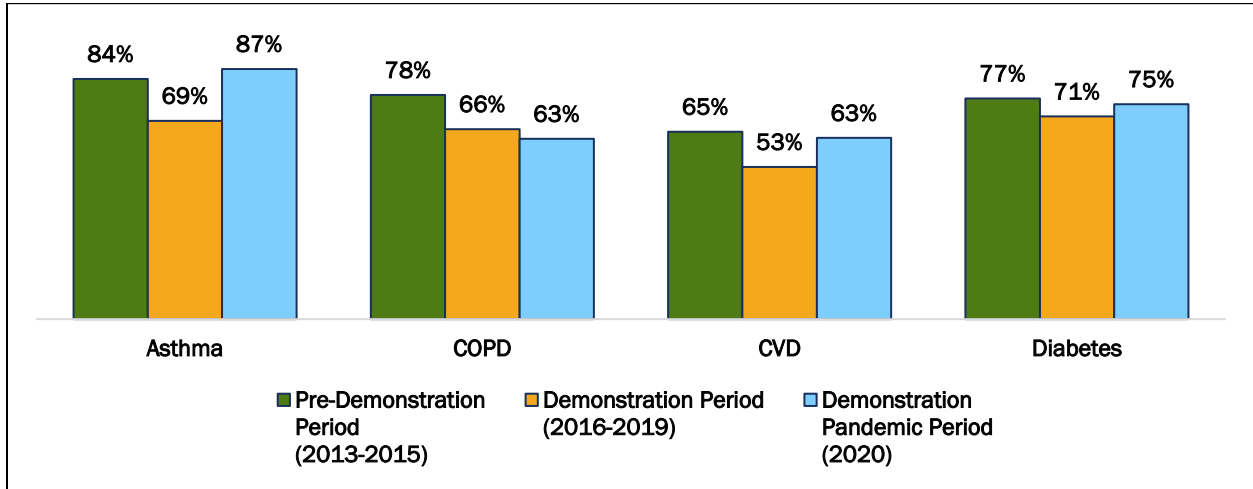
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—23. Discharges for Mental Health Hospitalization with Follow-up Visit Within 30 Days by Chronic Conditions
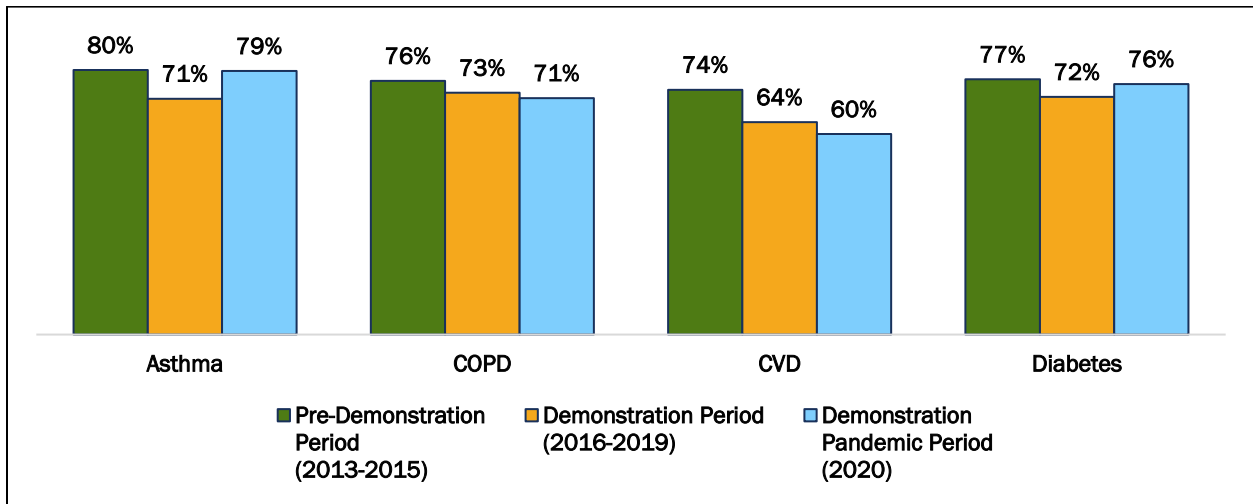
*Pattern within a column indicates significant change from Pre-Demonstration period

Chronic Conditions Multivariate Analysis - Medicaid Behavioral Health Population

There was no significant change in follow-up visits within 7 days of a mental health hospitalization over time when controlling for factors such as age, gender, and rurality of Beneficiary location (Table 6.1-31). Results of the model also found:

- ✦ Follow-up visits within 7-days were higher for the COPD dual eligible Beneficiaries;
- ✦ Among Beneficiaries in the expansion population, rates of follow-up within 7 days were lower for the COPD, CVD, and diabetes subpopulations;
- ✦ Fewer follow-up visits were associated with Beneficiaries who were older (CVD);
- ✦ More follow-up visits were associated with Beneficiaries who were female and had diabetes;
- ✦ There were significant differences for all of the chronic condition subpopulations within the large and small rural designations; and
- ✦ Fewer follow-up visits were associated with high ACG risk scores (except for diabetes).

Table 6.1-31. Generalized Linear Models Estimating Discharge for a Mental Health Hospitalization Follow-up Visit within Seven Days - Behavioral Health Subpopulations

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	-0.4727	0.0027	-0.3922	0.0244	0.2061	0.2894	-0.6033	<.0001
Demonstration Period	-0.1473	0.1653	-0.0517	0.3916	-0.0272	0.8014	-0.0288	0.5626
Demonstration Pandemic Period	0.0524	0.6907	-0.1066	0.3020	-0.0364	0.8208	0.0126	0.8642
Age	-0.0076	0.1172	-0.0057	0.0560	-0.0313	**0.0001**	-0.0009	0.6645
Female	0.0779	0.5304	0.0603	0.3510	0.0045	0.9673	0.1560	**0.0060**
Dual Eligible	0.1648	0.2251	0.2636	**0.0013**	0.1495	0.2337	0.1203	0.0602
Expansion Population	-0.1010	0.4673	-0.2712	**0.0240**	-0.5820	**0.0027**	-0.3570	**0.0001**
ACG Risk Score	0.0144	**0.0419**	-0.0044	0.1669	-0.0190	**0.0004**	-0.0008	0.7763
Large Rural	0.3241	**0.0034**	0.2764	**0.0002**	0.1338	0.3490	0.0954	0.1598
Small Rural	0.0599	0.7387	0.1867	**0.0235**	0.2944	**0.0411**	0.1238	**0.0486**
Isolated Rural	0.0432	0.8106	0.0423	0.7918	0.0686	0.8025	-0.1380	0.4466
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	0.8631	0.1653	0.9497	0.3916	0.9731	0.8014	0.9716	0.5626
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0538	0.6907	0.8989	0.3020	0.9643	0.8208	1.0127	0.8642

*Bold indicates significant (p<0.05)

There was no significant change in follow-up visits within 30 days of a mental health hospitalization over time when controlling for age, gender, ACG risk score, whether the Beneficiary was enrolled in the expansion program, and rurality of Beneficiary location (Table 6.1-32). Results of the model also found:

- Follow-up visits within 7-days were higher for the dual-eligible Beneficiaries (asthma, COPD, diabetes) but fewer visits for the expansion population (COPD, CVD, diabetes);
- More follow-up visits were associated with females (diabetes);
- More follow-up visits were associated with higher ACG risk score for the asthma subpopulation, but with fewer for the CVD subpopulation;
- There were significant differences for all of the chronic condition subpopulations within the large and small rural designations; and
- Fewer follow-up visits were associated with Beneficiaries who were older (COPD, CVD).

Table 6.1-32. Generalized Linear Model Estimating Mental Health Hospitalization with Follow-up Visit within 30 Days - Behavioral Health Subpopulation

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	-0.2887	0.0092	-0.1134	0.3217	0.0049	0.9727	-0.2910	0.0001
Demonstration Period	-0.0738	0.2900	-0.0146	0.7229	-0.0478	0.5391	-0.0315	0.3513
Demonstration Pandemic Period	0.0574	0.5059	-0.0370	0.5965	-0.0411	0.6770	0.0001	0.9985
Age	-0.0063	0.0943	-0.0046	**0.0214**	-0.0058	**0.0153**	-0.0019	0.1551
Female	0.0750	0.4112	0.0453	0.3071	0.0743	0.3396	0.0960	**0.0097**
Dual Eligible	0.2134	**0.0074**	0.1501	**0.0043**	0.0684	0.4110	0.0909	**0.0238**
Expansion Population	-0.1045	0.2706	-0.2309	**0.0044**	-0.3676	**0.0047**	-0.2682	**<.0001**
ACG Risk Score	0.0104	**0.0164**	-0.0042	0.0659	-0.0120	**0.0014**	0.0007	0.7071
Large Rural	0.3117	**<.0001**	0.0975	0.0947	0.1926	0.0631	0.1117	**0.0067**
Small Rural	0.1128	0.2977	0.2119	**<.0001**	0.3119	**0.0004**	0.1711	**<.0001**
Isolated Rural	0.1522	0.1605	0.0866	0.3044	0.2127	0.1289	-0.1024	0.3173
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	0.9288	0.2900	0.9855	0.7229	0.9534	0.5391	0.9690	0.3513
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0591	0.5059	0.9636	0.5965	0.9597	0.6770	1.0001	0.9985

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—24, the prevalence of discharges for a mental health hospitalization having a follow-up visit within seven days varied over study periods by IDN. Follow-up rates ranged from 20% to 60% in the pre-Demonstration period, 24% to 59% in the Demonstration period and 41% to 62% in the pandemic period. IDN 3 was consistently lower in follow-up visits within seven days.

Figure 6.1—24. Percentage of Mental Health Hospitalizations with Follow-up Visits within 7 Days by IDN
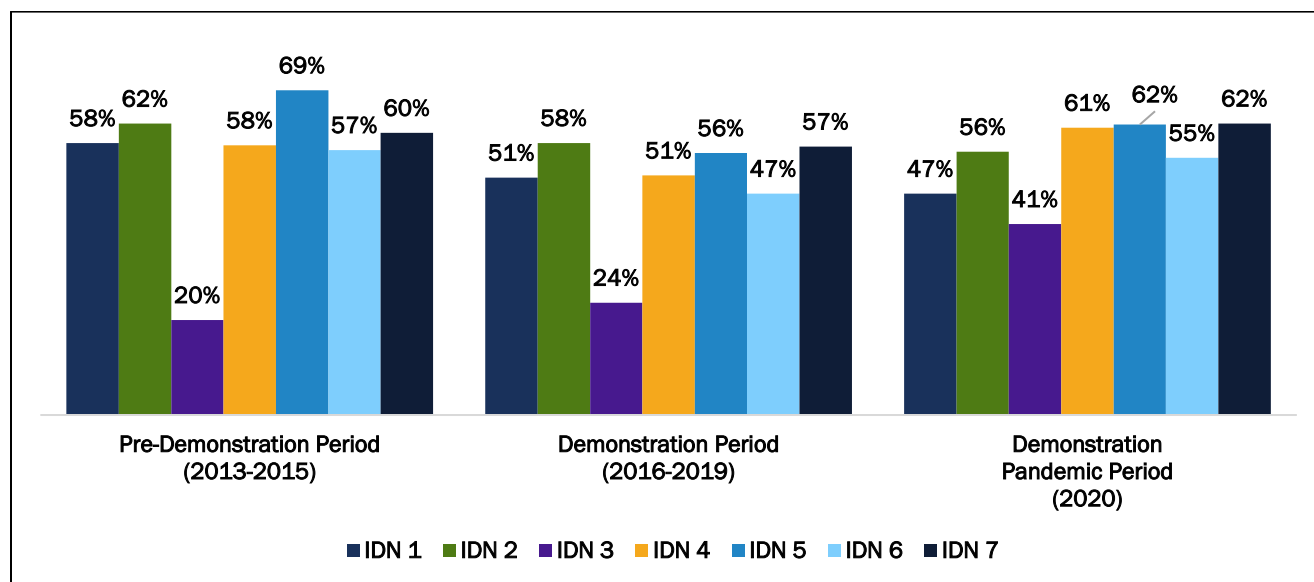
Looking at the behavioral health population alone across IDNs, without controlling for covariates, regression results (Table 6.1-33) show significant differences for some IDNs compared to IDN 2 in the rate of follow-up visits:

- In all periods, the rate of follow-up visits is significantly lower in IDN 3; and
- IDN 1, IDN 4, and IDN 6 had lower rates of follow-up visits in the Demonstration period.

Table 6.1-33. Percentage of Follow-up Visits for Mental Health Hospitalization within Seven Days for IDNs with Significant Differences Compared to IDN 2 by Period
Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Mental Health Hospitalization Follow-up within 7-days (Behavioral Health)	IDN 3	▼	IDN 1	▼	IDN 3	▼
			IDN 3	▼		
			IDN 4	▼		
			IDN 6	▼		

Figure 6.1—25 presents the rates of follow-up visits with a mental health provider within 30 days after emergency department visits for a mental illness among behavioral health Beneficiaries without controlling for other factors. With the exception of IDN 3, rates of follow-up visits within 30 days generally declined over time in all IDNs.

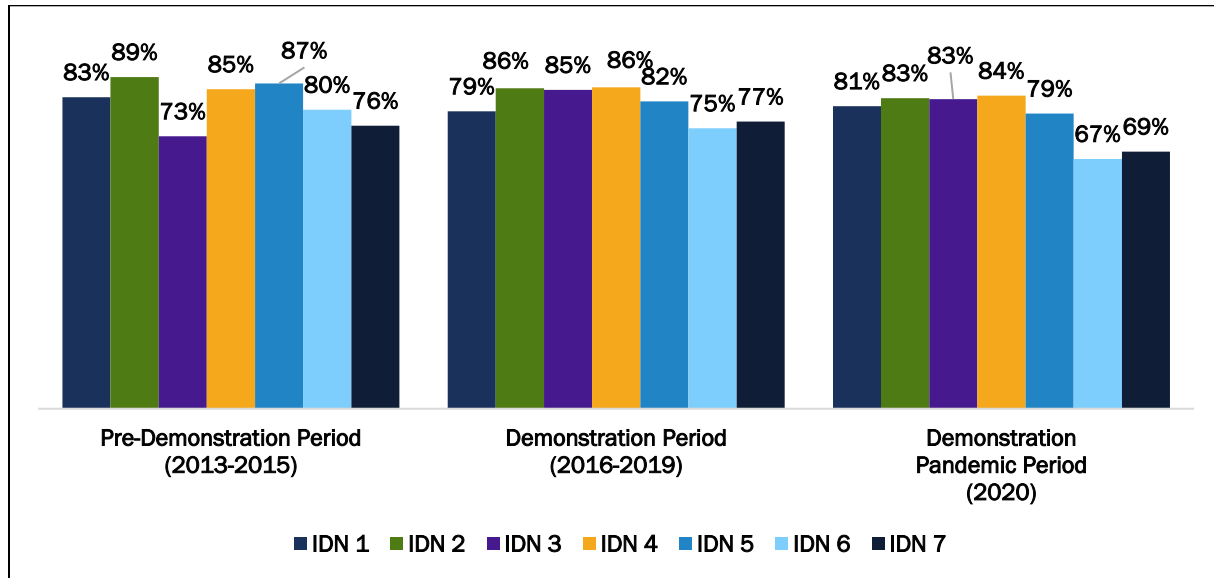*Figure 6.1—25. Percentage Of Mental Illness Emergency Department Visits With A Follow-Up Visit Within Thirty Days By IDN*

Figure 6.1—25 presents the rates of follow-up visits with a mental health provider within thirty days after emergency department visits for a mental illness among behavioral health Beneficiaries without controlling for other factors. There were significant differences for some IDNs compared to IDN 2:

- In the pre-Demonstration, Beneficiaries in IDN 3 and IDN 7 were significantly less likely to have an ED follow-up visit within 30 days;
- In the Demonstration, Beneficiaries in IDN 6 and IDN 7 were less likely to have a follow-up visit within 30 days; and
- In the pandemic period, IDN 6 was the only IDN with Beneficiaries who had significantly lower odds of having a follow-up ED visit.

Table 6.1-34. Percentage Of Follow-Up Visits for Mental Health Hospitalization Within Thirty Days for IDNs With Significant Differences Compared to IDN 2 By Period
Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN Significantly Different than IDN 2	Higher/ Lower	IDN Significantly Different than IDN 2	Higher/ Lower	IDN Significantly Different than IDN 2	Higher/ Lower
Mental Illness Emergency Department Follow-up within 30-days	IDN 3	▼	IDN 6	▼	IDN 6	▼
	IDN 7	▼	IDN 7	▼		

After controlling for factors such as age, gender, dual eligibility, and geographic location of the beneficiary, significant differences over time where found between IDNs (Figure 6.1—26, Figure 6.1—27, Table 6.1-35). Beneficiaries in IDN 2 were 8% more likely to have in a follow-up visit within 7 days in the Demonstration period compared to the pre-Demonstration period. There was no significant change in follow-up between the pre-Demonstration and pandemic periods. Compared to IDN 2:

- The rate of change in follow-up visits within 7-days of discharge between the pre- and Demonstration for Beneficiaries with a behavioral health condition in IDN 3 was significantly larger;
- The rate of change was lower for Beneficiaries with a behavioral health condition in IDN 5 and IDN 6; and
- The rate of change between the pre-Demonstration and Demonstration Pandemic periods was greater for Beneficiaries with BH in IDN 3 and IDN 4.

Figure 6.1—26. Results Of Generalized Linear Model Estimating Rate of Change for Follow-Ups After Hospitalization within Seven Days Relative to IDN 2 — Behavioral Health Population (Demonstration Period)
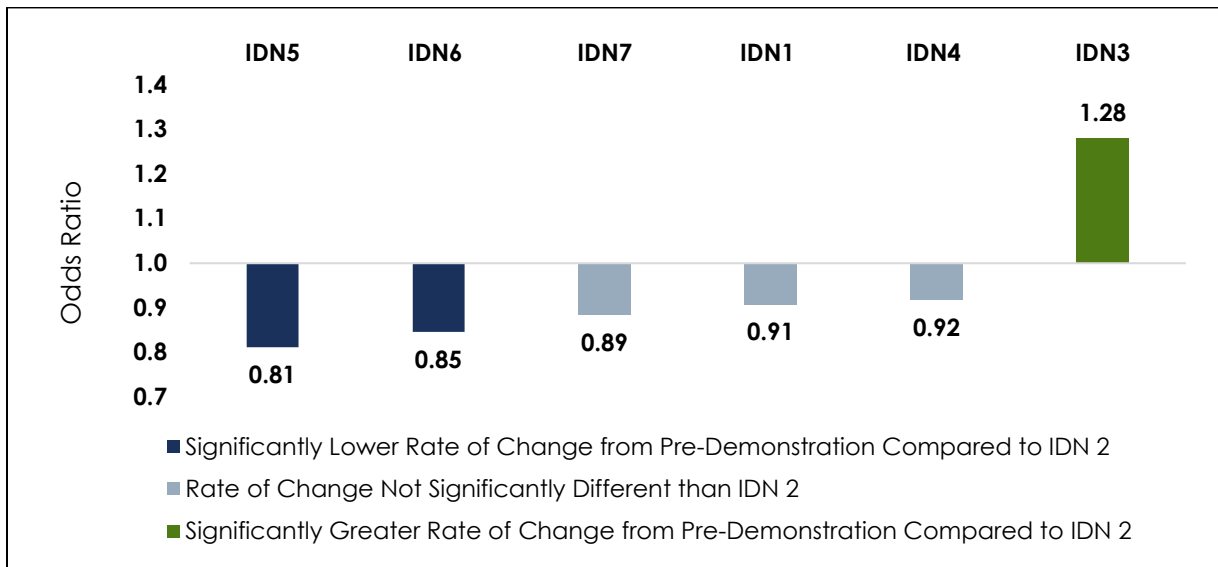

Figure 6.1—27. Results Of Generalized Linear Model Estimating Rate of Change for Follow-Ups After Hospitalization within Seven Days Relative to IDN 2 — Behavioral Health Population (Demonstration Pandemic Period)
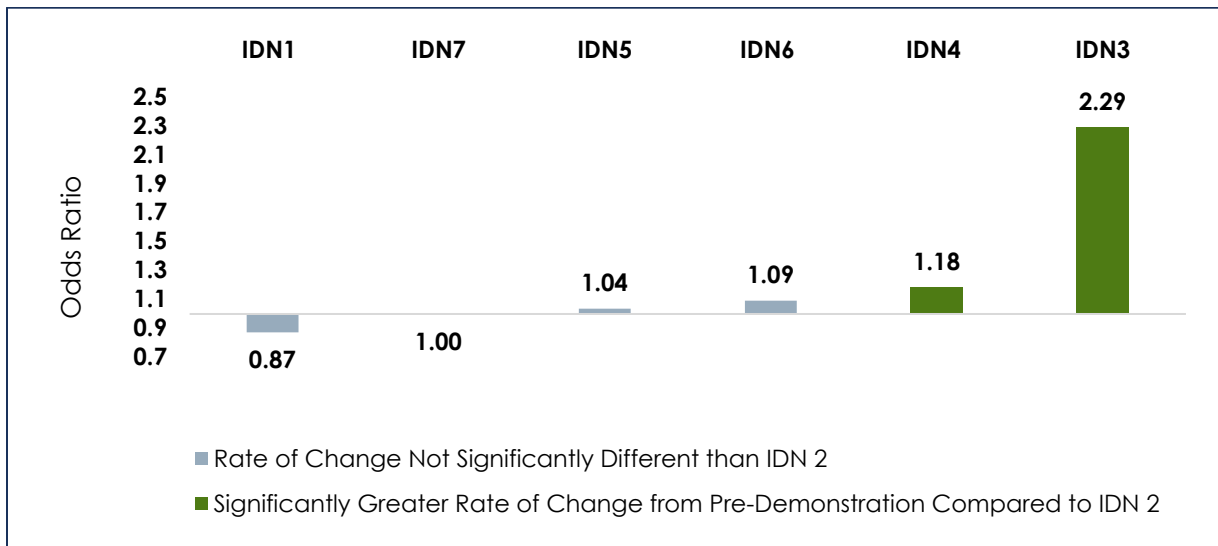
Table 6.1-35. Generalized Linear Models Estimating Follow-Up Visits for Discharges for a Mental Health Hospitalization within Seven Days – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	1.085	0.0420	1.009	0.8913
Time Interaction				
IDN 1	0.9081	0.1086	0.8739	0.1619
IDN 3	1.2804	**0.0428**	2.2860	**<.0001**
IDN 4	0.9179	0.1237	1.1819	**0.0383**
IDN 5	0.8120	**0.0008**	1.0363	0.7039
IDN 6	0.8465	**0.0036**	1.0927	0.2793
IDN 7	0.8850	0.0791	0.9997	0.9981

*Bold indicates significant (p<0.05)

After controlling for Beneficiary characteristics of interest, regression results showed significant differences over time between the IDNs on rates of follow-up visits within 30 days (Figure 6.1—28, Figure 6.1—29,). The likelihood of Beneficiaries in IDN 2 having a follow-up visit within 30 days of a mental illness emergency department visit did not change significantly between the pre-Demonstration and Demonstration periods or between the pre-Demonstration and the Demonstration Pandemic period. Compared to IDN 2:

✦ Beneficiaries in IDN 3 had a higher rate of follow-up visits during the Demonstration and the pandemic periods than during the pre-Demonstration; and

✦ IDN 6 had significantly lower rates of follow-up visits in the pandemic period

Figure 6.1—28. Generalized Linear Model Estimating Rate of Change of Follow-Ups After Hospitalization Within Thirty Days Relative To IDN 2 Behavioral Health Population (Demonstration Period)
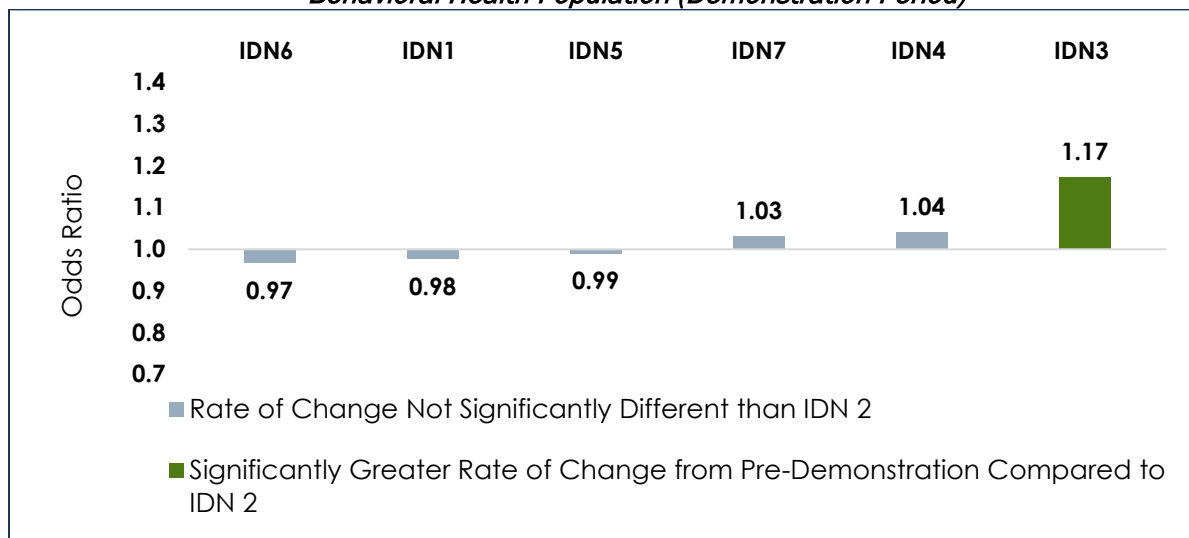
Figure 6.1—29. Results Of Generalized Linear Model Estimating Rate of Change of Follow-Ups After Hospitalization Within Thirty Days Relative to IDN 2
Behavioral Health Population (Demonstration Pandemic Period)
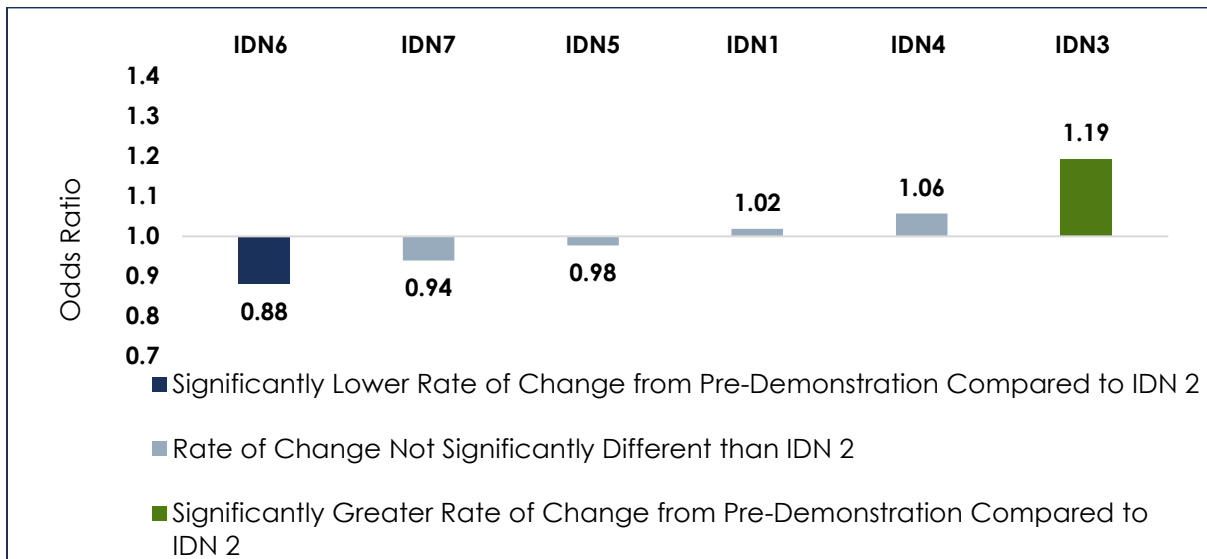

Table 6.1-36. Generalized Linear Models Estimating Mental Illness Emergency Department Visits with a Follow-Up Visit within Thirty Days – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.9978	0.9048	0.9639	0.2982
Time Interaction				
IDN 1	0.9776	0.4183	1.0191	0.6946
IDN 3	1.1716	**<.0001**	1.1944	**0.0003**
IDN 4	1.0415	0.0640	1.0571	0.1783
IDN 5	0.9904	0.7472	0.9773	0.6871
IDN 6	0.9669	0.1959	0.8812	**0.0156**
IDN 7	1.0313	0.4475	0.9398	0.4020

*Bold indicates significant (p<0.05)

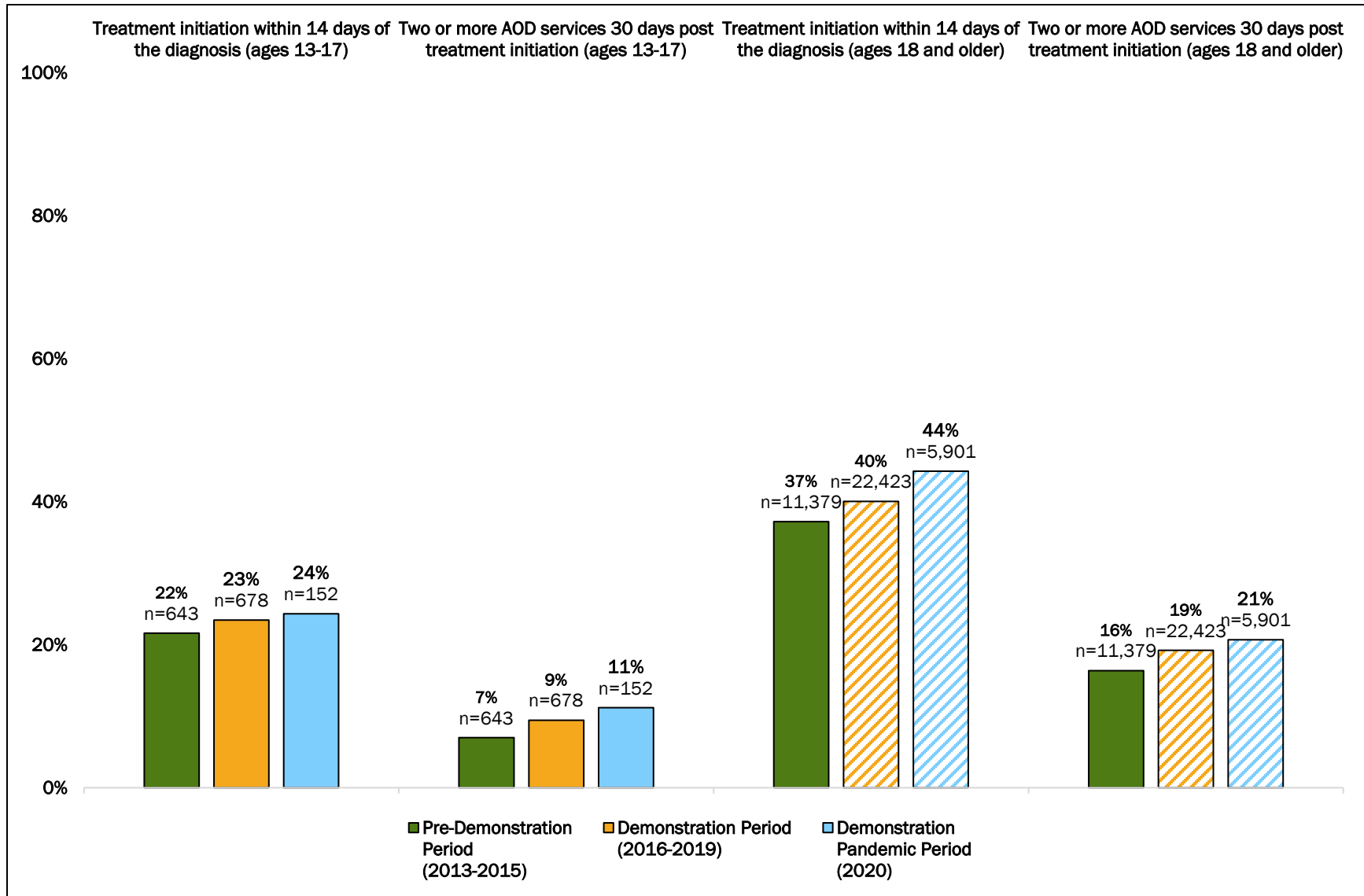## 6.1.3.4 Initiation and Engagement of Alcohol and Other Drug Dependence Treatment

Similar to national trends, NH has experienced an increased prevalence of substance use disorders (SUD), particularly related to opioid use. NH is one of the top five states with the highest rate of opioid deaths -- an age-adjusted rate of 33.1 deaths per 100,000 persons.[51] During the pre-Demonstration phase of DSRIP, the number of drug deaths per 100,000 persons ranged from 14.51 in 2013 to 33.0 in 2015. Rates continued to rise until 2017 (36.35) and then dropped back down to 30.53 in 2019.[52] The Governor's Commission on Alcohol and Other Drugs released a three-year strategic plan to reduce alcohol and drug problems in the state. In 2017, SUD treatment service coverage was expanded to cover all Medicaid Beneficiaries. The DSRIP Demonstration seeks to improve access to and effective use of SUD services.

Initiation and continued engagement in SUD treatment services generally improves outcomes as compared to people who do not engage.[53-56] Initiation in SUD services included inpatient, partial hospitalizations, intensive outpatient (IOP) and other outpatient SUD service use. Engagement was measured through the use of two or more additional services within 30 days.

Adolescents' (aged 13-17) and adults' use of SUD services are examined in Figure 6.1—30. Not controlling for other factors, rates of both initiation and engagement in SUD treatment increased over time, most likely driven by policy changes that expanded coverage of these services. Compared to the pre-Demonstration phase:

- Beneficiaries ages 18 and older were more likely to engage in treatment initiation within 14 days of their diagnosis in both Demonstration periods;
- Beneficiaries ages 18 and older were more likely to have two or more alcohol or other drug services within 30 days of their treatment initiation in both post periods;
- Beneficiaries ages 18 and older were more likely to engage in treatment initiation within 14 days of their diagnosis in both Demonstration periods; and
- Beneficiaries ages 18 and older were more likely to have two or more alcohol or other drug services within 30 days of their treatment initiation in both post periods.

Figure 6.1—30. Initiation and Engagement of Alcohol and Other Drug Dependence Treatment – Unadjusted

*Pattern within a column indicates significant change from Pre-Demonstration period

A significant difference in the likelihood of initiation and engagement in alcohol and other drug dependence treatment within 14 days for the adult behavioral health population was found in the in the Demonstration pandemic period (19%) when controlling for covariates of interest including age, gender and rurality of Beneficiary location. Additionally, adult Beneficiaries with behavioral health conditions were significantly more likely to have two or more AOD services within 30 days in the Demonstration (8%) and Demonstration Pandemic (19%) periods. Results from the model also show:

- The large rural geographic location was associated with initiation and engagement of alcohol and other drug dependence treatment within 14 days for adolescents (Table 6.1-37);
- Initiation and engagement of alcohol and other drug dependence treatment within 30 days for adolescents were associated with older age (Table 6.1-38);
- Rates of initiation and treatment within 14 days was lower for adults who were older, female, or dual eligible, while rates were higher for those who were in the expansion population (Table 6.1-39); and
- Initiation and treatment within 30 days was higher for the adult expansion population and lower for older adults, those with higher ACG scores, or living in small rural geographic locations (Table 6.1-40).

Table 6.1-37. Generalized Linear Model Estimating Initiation and Engagement of Alcohol and Other Drug Dependence Treatment within 14 days (ages 13-17)
Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-2.6305	0.9069	-4.4080	-0.8530	0.0037
Demonstration Period	0.0887	0.1325	-0.1710	0.3483	0.5023
Demonstration Pandemic Period	0.1236	0.2124	-0.2927	0.5399	0.5606
Age	0.0753	0.0566	-0.0358	0.1863	0.1839
Female	0.1550	0.1250	-0.0899	0.3999	0.2147
ACG Risk Score	0.0191	0.0300	-0.0397	0.0779	0.5244
Large Rural	0.3635	0.1554	0.0589	0.6681	**0.0194**
Small Rural	-0.0995	0.2235	-0.5376	0.3386	0.6561
Isolated Rural	-0.0350	0.2502	-0.5253	0.4553	0.8887
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0927	0.1448	0.8429	1.4167	0.5032
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1316	0.2404	0.7463	1.7159	0.5606

*Bold indicates significant (p<0.05)

Table 6.1-38. Generalized Linear Model Estimating Initiation and Engagement of Alcohol and Other Drug Dependence Treatment within 30 days (ages 13-17)
Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-6.7713	1.5133	-9.7373	-3.8054	<.0001
Demonstration Period	0.2820	0.2065	-0.1227	0.6867	0.1720
Demonstration Pandemic Period	0.5476	0.3030	-0.0462	1.1414	0.0707
Age	0.2735	0.0928	0.0917	0.4553	**0.0032**
Female	-0.1955	0.1952	-0.5781	0.1870	0.3164
ACG Risk Score	-0.0628	0.0817	-0.2229	0.0973	0.4417
Large Rural	0.0737	0.2384	-0.3936	0.5410	0.7573
Small Rural	-0.1884	0.3555	-0.8851	0.5083	0.5961
Isolated Rural	-0.5293	0.4484	-1.4082	0.3496	0.2379
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.3258	0.2738	0.8846	1.9872	0.1720
BH Demonstration Pandemic vs Pre-Demonstration Period	1.7291	0.5239	0.9548	3.1312	0.0707

*Bold indicates significant (p<0.05)

Table 6.1-39. Generalized Linear Model Estimating Initiation and Engagement of Alcohol and Other Drug Dependence Treatment within 14 days (ages 18+)
Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.2822	0.0443	-0.3690	-0.1953	<.0001
Demonstration Period	0.0101	0.0252	-0.0392	0.0594	0.6875
Demonstration Pandemic Period	0.1745	0.0339	0.1081	0.2408	**<.0001**
Age	-0.0070	0.0009	-0.0087	-0.0052	**<.0001**
Female	-0.0437	0.0219	-0.0866	-0.0009	**0.0454**
Dual Eligible	-0.1228	0.0343	-0.1899	-0.0556	**0.0003**
Expansion Population	0.2716	0.0262	0.2202	0.3231	**<.0001**
ACG Risk Score	0.0029	0.0017	-0.0005	0.0063	0.0964
Large Rural	0.0054	0.0299	-0.0532	0.0640	0.8560
Small Rural	-0.0633	0.0360	-0.1339	0.0073	0.0788
Isolated Rural	-0.0407	0.0432	-0.1254	0.0440	0.3464

	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0102	0.0254	0.9616	1.0612	0.6875
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1906	0.0403	1.1142	1.2723	**<.0001**

*Bold indicates significant (p<0.05)

Table 6.1-40. Generalized Linear Model Estimating Initiation and Engagement of Alcohol and Other Drug Dependence Treatment within 30 days (ages 18+) - Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.9076	0.0541	-1.0136	-0.8016	<.0001
Demonstration Period	0.0747	0.0320	0.0120	0.1374	**0.0195**
Demonstration Pandemic Period	0.1769	0.0421	0.0944	0.2594	**<.0001**
Age	-0.0170	0.0011	-0.0191	-0.0149	**<.0001**
Female	0.0085	0.0275	-0.0454	0.0624	0.7575
Dual Eligible	-0.0670	0.0472	-0.1596	0.0255	0.1557
Expansion Population	0.3214	0.0333	0.2562	0.3867	**<.0001**
ACG Risk Score	-0.0416	0.0035	-0.0484	-0.0347	**<.0001**
Large Rural	-0.0527	0.0378	-0.1268	0.0214	0.1633
Small Rural	-0.1099	0.0464	-0.2009	-0.0189	**0.0180**
Isolated Rural	-0.0525	0.0543	-0.1590	0.0540	0.3340
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0776	0.0345	1.0121	1.1473	**0.0195**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1935	0.0502	1.0990	1.2962	**<.0001**

*Bold indicates significant (p<0.05)

For younger Beneficiaries ages 13-17, initiation and engagement in AOD treatment varied by IDN (Figure 6.1—31, Figure 6.1—32). IDNs 5 and 7 saw decreases in initiation from the pre-Demonstration period to the Demonstration period. There were no changes for IDNs 1 and 2 from the pre-Demonstration period to the Demonstration period and the remaining IDNs (3,4,6) saw improvements with IDN 6 seeing the greatest change (19% pre, 29% post). Engagement of AOD services did not change from pre-Demonstration to Demonstration for IDNs 3 or 5; however, IDNs 1, 2, 4, and 6 saw improvements. IDN 6 saw the greatest improvement in engagement in AOD services (5% per, 14% post).

Figure 6.1—31. Percentage of Beneficiaries Initiating Treatment for Alcohol or Other Drugs with 14 days of Diagnosis (ages 13-17) by IDN
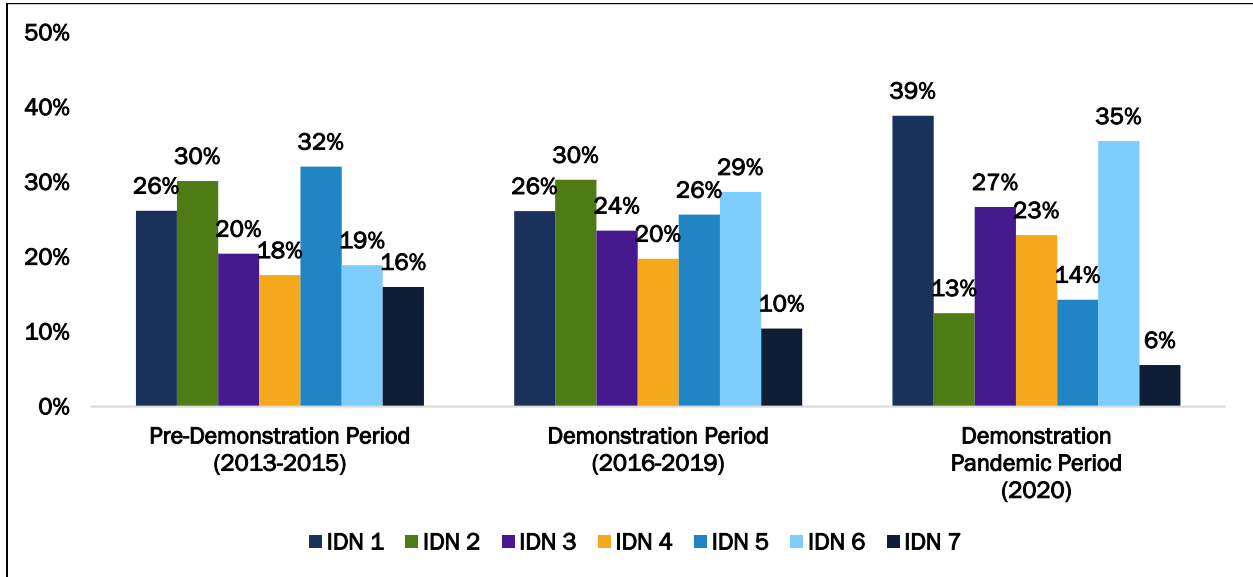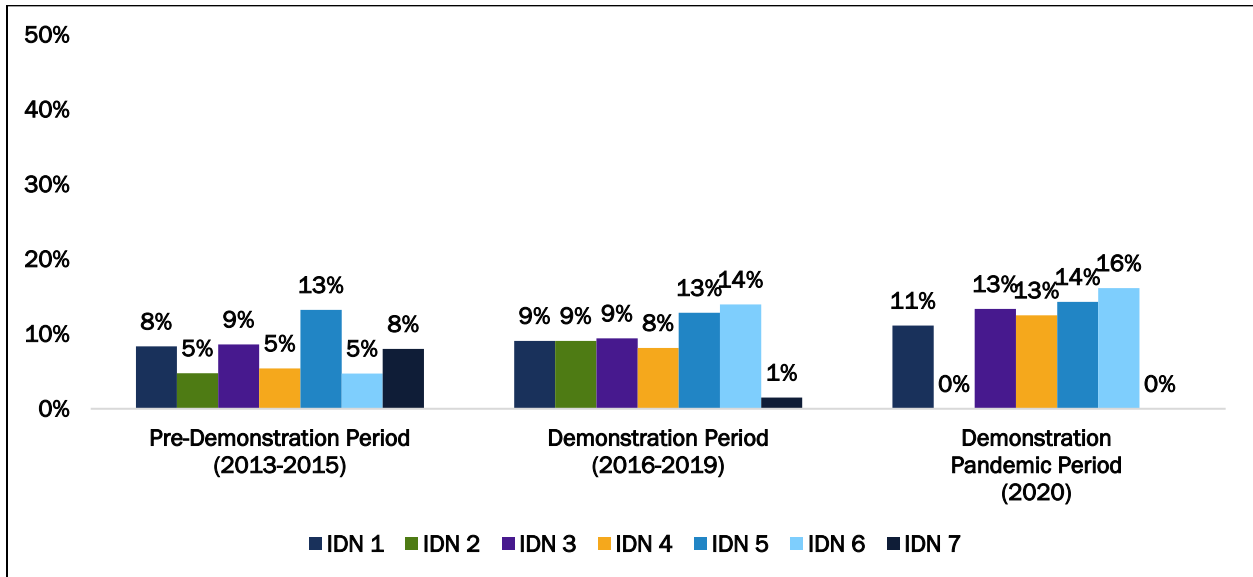

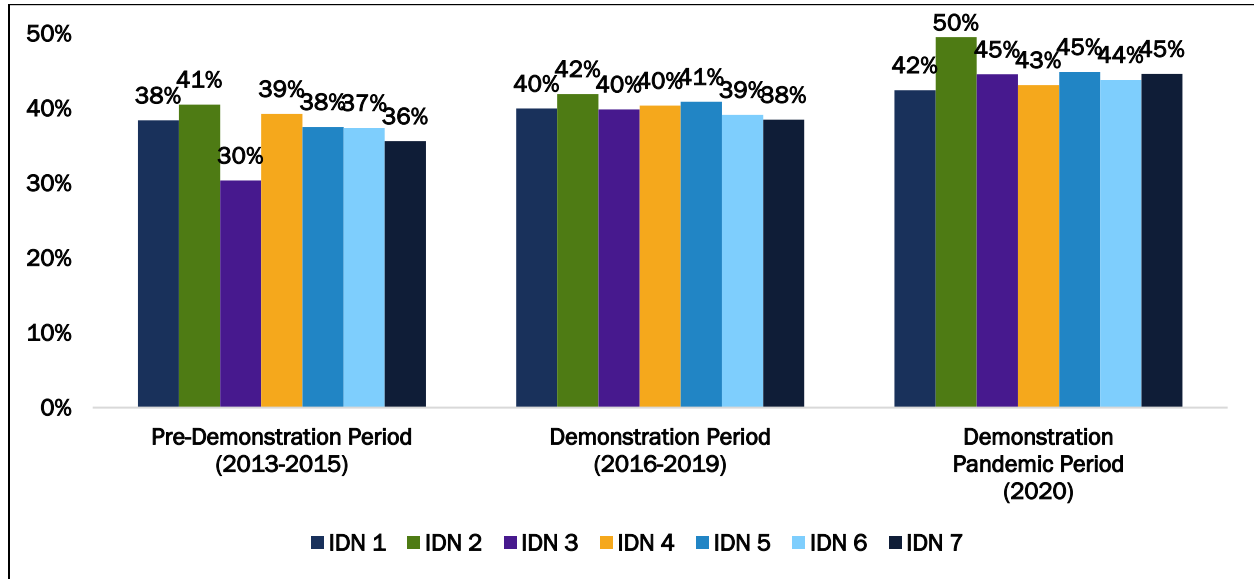*Figure 6.1—32. Percentage of Beneficiaries with Two or More AOD Services 30 Days Post Treatment Initiation (ages 13-17) by IDN*

Treatment initiation was higher for adult Beneficiaries compared to adolescents. As shown in Figure 6.1—33, all IDNs saw improvements in treatment initiation from the pre-Demonstration period to the Demonstration period. IDN 3 saw the greatest improvement (30% pre, 40% post). Similarly, as shown in Figure 6.1—34, all IDNs saw increased engagement in AOD services in the Demonstration period, with IDN 3 seeing the greatest improvement (11% pre, 20% post).

Figure 6.1—33. Percentage of Beneficiaries with Treatment Initiation within 14-days of diagnosis (ages 18+)
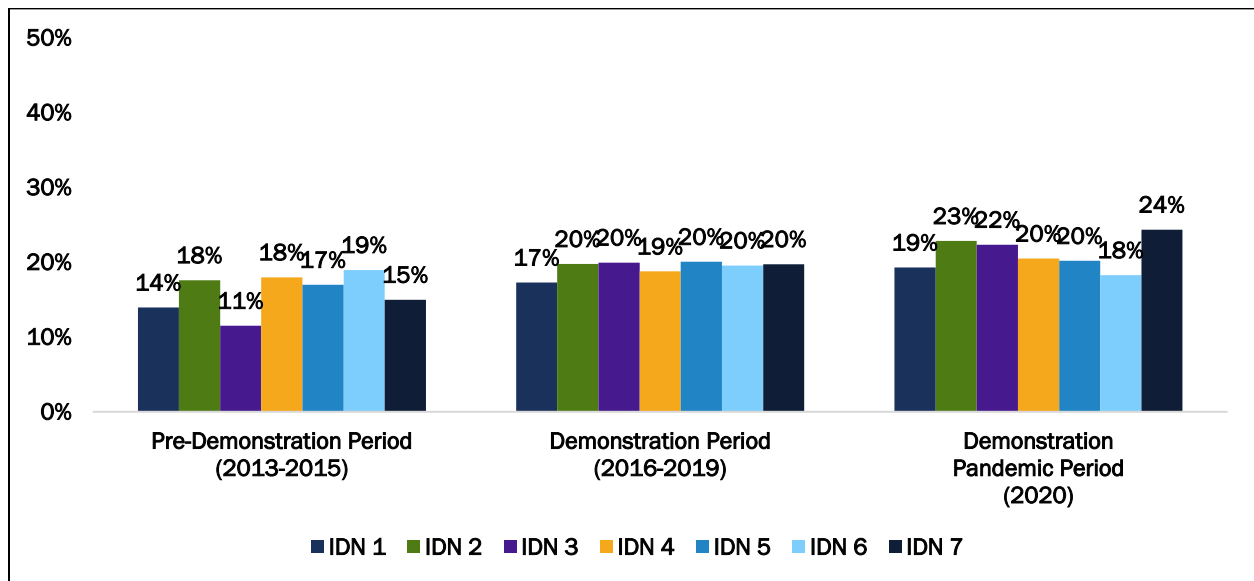

Figure 6.1—34. Percentage of Beneficiaries with Two or More AOD Services 30 Days Post Treatment Initiation (ages 18+)

Without controlling for other factors, regression results (Table 6.1-41) show significant difference for some IDNs compared to IDN 2 in the percentage of Beneficiaries initiating and engaging in AOD services:

- Treatment initiation within 14-days of diagnosis for youth (ages 13-17) in the pre-Demonstration period was significantly lower for IDN 4 and during the Demonstration, and IDN 7 was significantly lower than the referent IDN;

- Treatment initiation within 14-days of diagnosis for adults was significantly lower in the pre-Demonstration period for IDNs 3 and 7; lower in the Demonstration period for IDNs 6 and 7; and lower in the Demonstration Pandemic period for IDNs 1, 4, and 6; and

- Two or more AOD services 30 days post treatment initiation for adults was significantly lower in the pre-Demonstration period for IDNs 1 and 3; lower for IDN 1 in the Demonstration period, and lower for IDN 6 in the Demonstration Pandemic period.

Table 6.1-41. Percentage of Beneficiaries with Initiation and/or Engagement in AOD Services Significant Differences Compared to IDN 2 by Period – Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Treatment Initiation within 14-days of diagnosis (ages 13-17)	IDN 4	▼	IDN 7	▼		
Two or more AOD services 30 days post treatment initiation (ages 13-17)	No significant differences compared to IDN 2					
Treatment Initiation within 14-days of diagnosis (ages 18+)	IDN 3 IDN 7	▼ ▼	IDN 6 IDN 7	▼ ▼	IDN 1 IDN 4 IDN 6	▼ ▼ ▼
Two or more AOD services 30 days post treatment initiation (ages 18+)	IDN 1 IDN 3	▼ ▼	IDN 1	▼	IDN 6	▼

After controlling for covariates including age, gender, dual eligibility, whether Beneficiaries were enrolled in the expansion program, patient acuity (ACG risk score), and geographic location of the beneficiary regression results did not show any significant differences over

time for initiation and engagement of alcohol and other drug dependence treatment at 14 or 30 days (Table 6.1-42, Table 6.1-43).[13]

Table 6.1-42. Generalized Linear Models Estimating Initiation and Engagement AOD 14 Days (ages 13 to 17) – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.9782	0.9538	0.3066	0.9538
Time Interaction				
IDN 1	1.1083	0.8443	5.6287	0.1502
IDN 3	1.1865	0.7498	4.6699	0.2135
IDN 4	1.2000	0.7034	4.4857	0.1886
IDN 5	0.6942	0.5058	1.0230	0.9866
IDN 6	1.7248	0.2596	7.6715	0.0777
IDN 7	0.5984	0.4108	1.0452	0.9766

*Bold indicates significant (p<0.05)

Table 6.1-43. Generalized Linear Models Estimating Initiation and Engagement AOD 30 Days (ages 13 to 17) – Behavioral Health Population

Parameter	Demonstration Period	
	Odds Ratio	P-Value
IDN 2	1.798	0.4155
Time Interaction		
IDN 1	0.5269	0.5002
IDN 3	0.6232	0.5905
IDN 4	0.8390	0.8362
IDN 5	0.5147	0.4631
IDN 6	1.7695	0.5141
IDN 7	0.0909	0.0714

*Bold indicates significant (p<0.05)

After controlling for covariates of interest, results showed significant differences over time for initiation and engagement of alcohol and other drug dependence treatment at 14 or 30 days for the adult (18+) population (Table 6.1-44). IDN 2 showed no significant change between the pre-Demonstration and Demonstration periods. Compared to IDN 2:

- The increase between pre- and Demonstration periods in initiation and engagement in AOD within 14 days for adult Beneficiaries was 39% greater in IDN 3. As shown in Figure 6.1—35, this difference was significant.

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[13] A generalized linear model for initiation and engagement AOD within 30 days (ages 13 to 17) the post-Demonstration pandemic period was not completed, as not all the IDNs had sufficient sample sizes.

- IDN 3 also experienced a significantly greater increase in rates of engagement of AOD services within 30 days of diagnosis between the pre-Demonstration and Demonstration (39%) and between the pre-Demonstration and Demonstration Pandemic periods (24%).
- The rate of change for IDN 6 was 34% lower between the pre-Demonstration and Demonstration Pandemic periods. This difference was significant.

Figure 6.1—35. Results of Generalized Linear Model Estimating Rate of Change of Initiation and Engagement in AOD 14 Days (ages 18+)
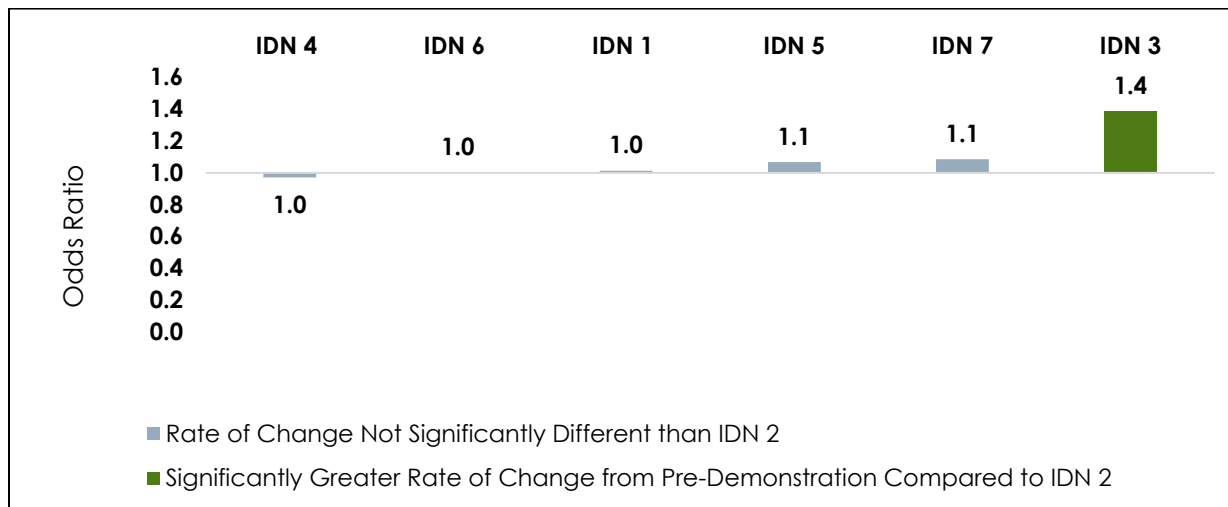

Table 6.1-44. Generalized Linear Models Estimating Initiation and Engagement in AOD 14 Days (ages 18+) – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.9613	0.6004	1.2735	**0.0233**
Time Interaction				
IDN 1	1.0134	0.8961	0.8491	0.2436
IDN 3	1.3880	**0.0010**	1.2411	0.1173
IDN 4	0.9711	0.7393	0.8279	0.1247
IDN 5	1.0676	0.5403	0.9324	0.6368
IDN 6	1.0019	0.9833	0.9057	0.4439
IDN 7	1.0865	0.4524	1.0357	0.8172

*Bold indicates significant (p<0.05)

Figure 6.1—36. Results of Generalized Linear Models Estimating Initiation and Engagement in AOD 30 Days (ages 18+) – Behavioral Health Population
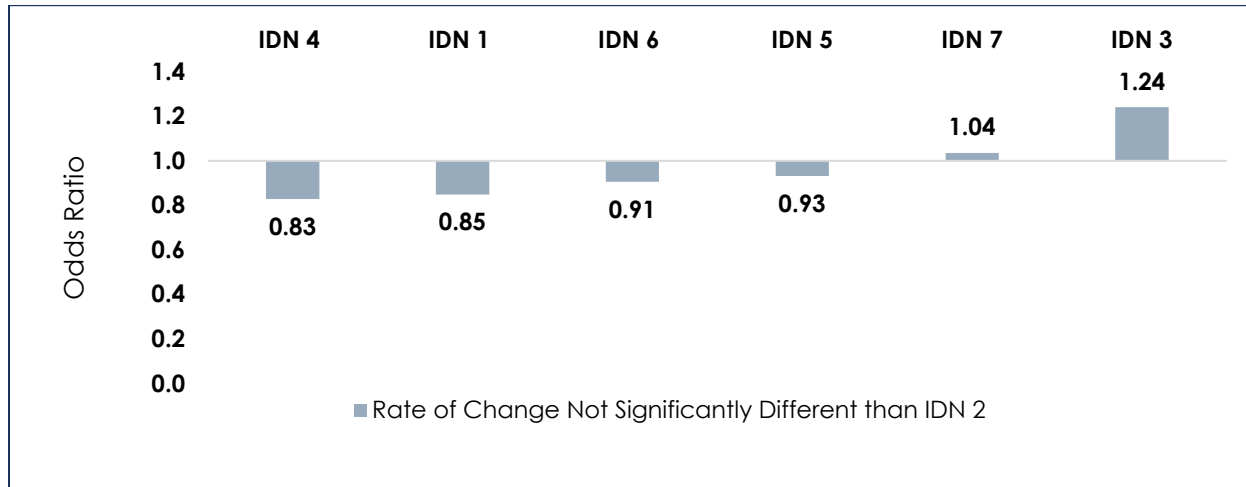

Table 6.1-45. Generalized Linear Models Estimating Initiation and Engagement in AOD 30 Days (ages 18+) – Behavioral Health Population

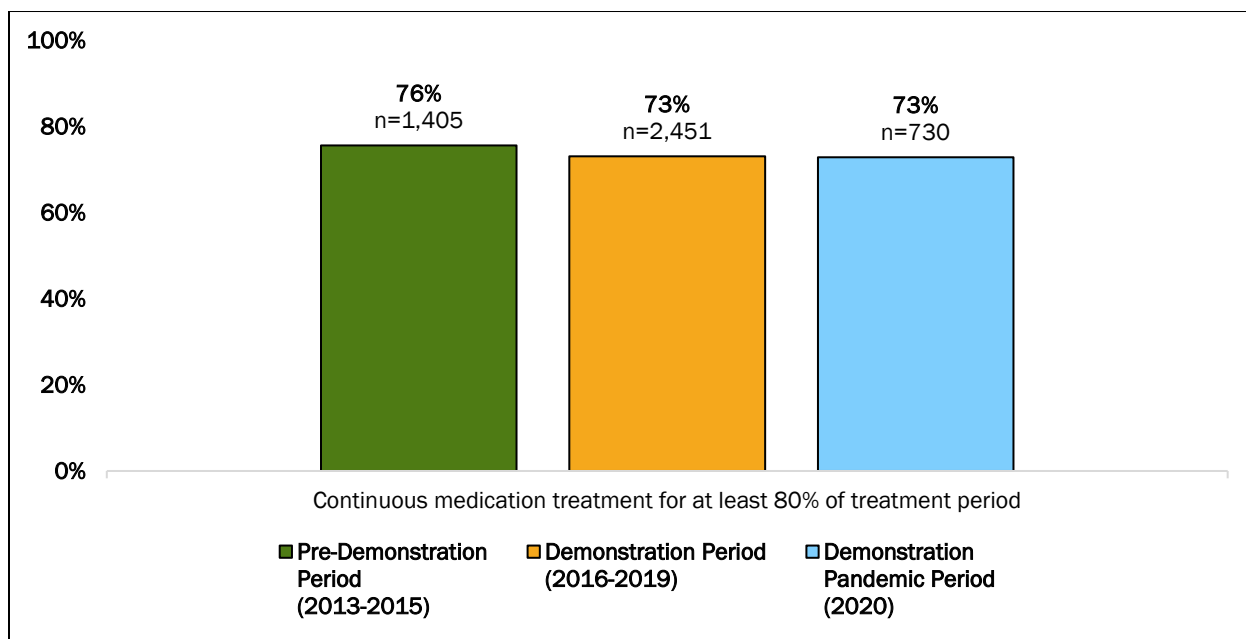| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	1.039	0.6880	1.2504	0.0832
Time Interaction				
IDN 1	1.160	0.2626	1.160	0.4004
IDN 3	1.573	**0.0005**	1.505	**0.0179**
IDN 4	0.880	0.2558	0.837	0.2398
IDN 5	1.050	0.7190	0.856	0.3981
IDN 6	0.883	0.2835	0.660	**0.0093**
IDN 7	1.243	0.1221	1.405	0.0666

*Bold indicates significant (p<0.05)

6.1.3.5 Adherence to Antipsychotic Medications for Individuals with Schizophrenia

Relief of acute symptoms of schizophrenia through antipsychotic medication should continue for at least a year and can substantially reduce the risk of relapse once in the stable phase of the illness.[57,58] Adherence to antipsychotic medication for people with schizophrenia can reduce hospitalizations and improve effectiveness of care interventions.

Beneficiaries adhering to their prescription regimen for at least 80% of their treatment period ranged from 76% in the pre-Demonstration to 73% the Demonstration period. Without controlling for other factors, modeling showed no significant changes in this measure over time (Figure 6.1—37).

NH Medicaid is well above the HEDIS® National Medicaid benchmark on adherence to antipsychotic medications. Nationally, rates ranged from 58.0% to 60.1% in the pre-Demonstration period, 59.1% to 60.8% in the Demonstration period, and 61.6% in the Demonstration pandemic period.[50]

Figure 6.1—37. Adherence to Antipsychotic Medications for Individuals with Schizophrenia (age 19-64) – Unadjusted

*Pattern within a column indicates significant change from Pre-Demonstration period

When controlling for covariates of interest, there was a significantly higher likelihood (27%) of adherence to antipsychotic medications in the Demonstration Pandemic period compared to the pre-Demonstration period (Table 6.1-46). For the population with schizophrenia:

- Older Beneficiaries were more likely to adhere to antipsychotic medications; and
- Beneficiaries in the expansion population or with a higher ACG risk score were less likely to adhere to antipsychotic medications

Table 6.1-46. Generalized Linear Model Estimating Antipsychotic Medication Adherence for People with Schizophrenia

| Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	0.0451	0.1490	-0.2470	0.3372	0.7624
Demonstration Period	0.1033	0.0772	-0.0480	0.2546	0.1809
Demonstration Pandemic Period	0.2362	0.1039	0.0326	0.4398	**0.0230**
Age	0.0251	0.0033	0.0185	0.0316	**<.0001**
Female	0.1221	0.0894	-0.0531	0.2973	0.1720
Expansion Population	-0.6801	0.0836	-0.8439	-0.5164	**<.0001**
ACG Risk Score	-0.0277	0.0064	-0.0403	-0.0151	**<.0001**
Large Rural	0.1479	0.1218	-0.0908	0.3866	0.2247
Small Rural	0.0470	0.1427	-0.2327	0.3267	0.7421
Isolated Rural	0.3211	0.1721	-0.0162	0.6584	0.0620
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.1088	0.0856	0.9531	1.2899	0.1809
BH Demonstration Pandemic vs Pre-Demonstration Period	1.2664	0.1316	1.0332	1.5524	**0.0230**

*Bold indicates significant (p<0.05)

6.1.3.6 Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications

Use of psychiatric medications, such as antipsychotics and certain antidepressants, can cause weight gain and worsen cardiovascular health. Having a behavioral health condition makes management of chronic disease more challenging and requires appropriate care coordination.[59,60] Adherence to appropriate treatment, having a usual source of care, and collaborative care management are frequently cited as necessary components to improving the health of those with chronic disease and mental illness.[60-64] Diabetes care, for example, requires self-management by patients and ongoing monitoring by clinicians to prevent acute complications.[65,66] An estimated 3% of the U.S. population suffers from more severe and disabling mental illness, such as schizophrenia, depression, or bipolar disorder. Additionally, comorbid chronic medical diseases, such as diabetes, cardiovascular disease, asthma, and arthritis, are more common among patients with behavioral health disorders.

Screening for diabetes through either a glucose test or HbA1c test in people with schizophrenia or bipolar disorder can lead to early detection and treatment. Approximately 80% of Beneficiaries with schizophrenia or bipolar were screened for diabetes during the pre-Demonstration and Demonstration study periods. As shown in Figure 6.1—38, the unadjusted significantly fewer Beneficiaries were tested for diabetes in the Demonstration Pandemic period (74%).

Figure 6.1—38. Percentage People with Schizophrenia or Bipolar who are Using Antipsychotic Medication and were Screened for Diabetes – Unadjusted
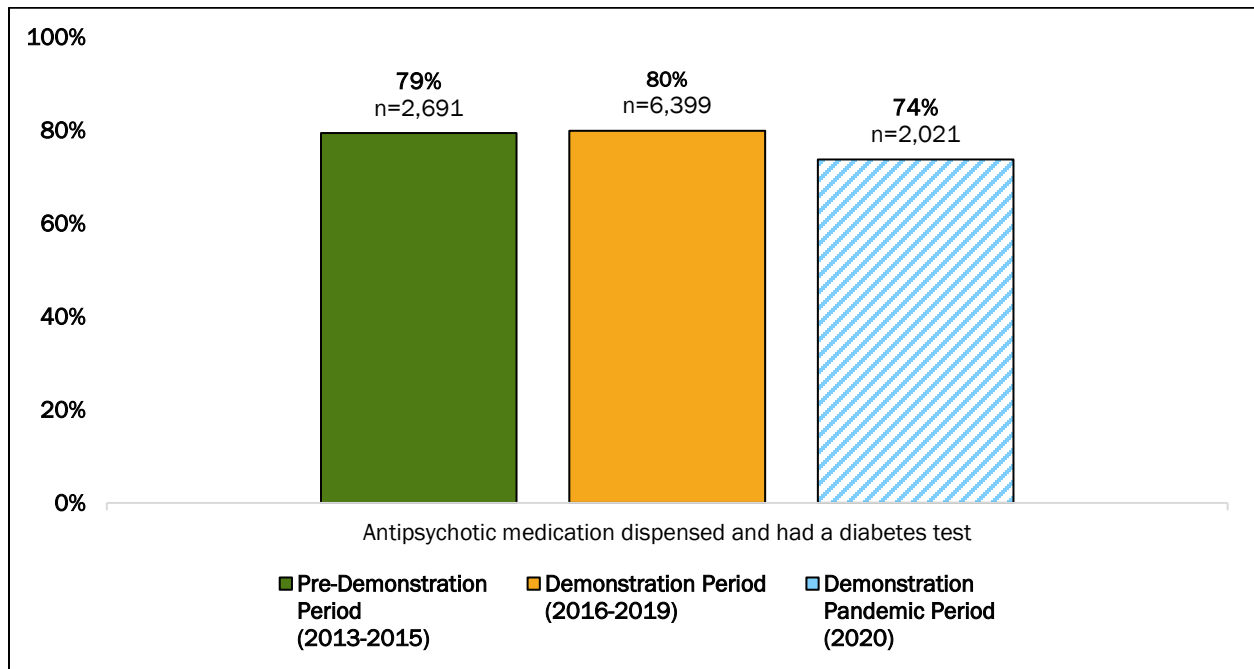
*Pattern within a column indicates significant change from Pre-Demonstration period

Beneficiaries with schizophrenia or bipolar disorder and using antipsychotic medications were significantly less likely to be screened for diabetes in the Demonstration pandemic period after controlling for Beneficiary characteristics of interest (Table 6.1-47). For the population with schizophrenia or bipolar disorder and using antipsychotic medications the model also found:

- Diabetes screening was associated with Beneficiaries who were older, female, had higher ACG risk scores, or lived in large rural geographic areas.

Table 6.1-47. Generalized Linear Model Estimating Diabetes Screening for People with Schizophrenia or Bipolar who are Using Antipsychotic Medication Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.0184	0.1078	-0.2297	0.1929	0.8646
Demonstration Period	-0.0099	0.0625	-0.1324	0.1126	0.8745
Demonstration Pandemic Period	-0.3504	0.0761	-0.4995	-0.2014	**<.0001**
Age	0.0149	0.0023	0.0103	0.0194	**<.0001**
Female	0.1447	0.0567	0.0335	0.2559	**0.0107**
Expansion Population	-0.0323	0.0566	-0.1433	0.0787	0.5687
ACG Risk Score	0.4077	0.0259	0.3569	0.4584	**<.0001**
Large Rural	0.2059	0.0813	0.0465	0.3652	**0.0113**
Small Rural	0.0628	0.0986	-0.1304	0.2560	0.5238
Isolated Rural	0.0818	0.1075	-0.1289	0.2925	0.4467
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9902	0.0619	0.8760	1.1192	0.8745
BH Demonstration Pandemic vs Pre-Demonstration Period	0.7044	0.0536	0.6068	0.8176	<.0001

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—39, the prevalence of diabetes screening for people with schizophrenia or bipolar disorder who were using antipsychotic medications remained relatively consistent over study periods by IDN. IDN 5 saw the greatest increase in screening rates from the pre-Demonstration to the Demonstration periods (81% pre, 84% post). Screening rates declined during the Demonstration Pandemic period.

Figure 6.1—39. Diabetes Screening for People with Schizophrenia or Bipolar who are Using Antipsychotic Medication by IDN
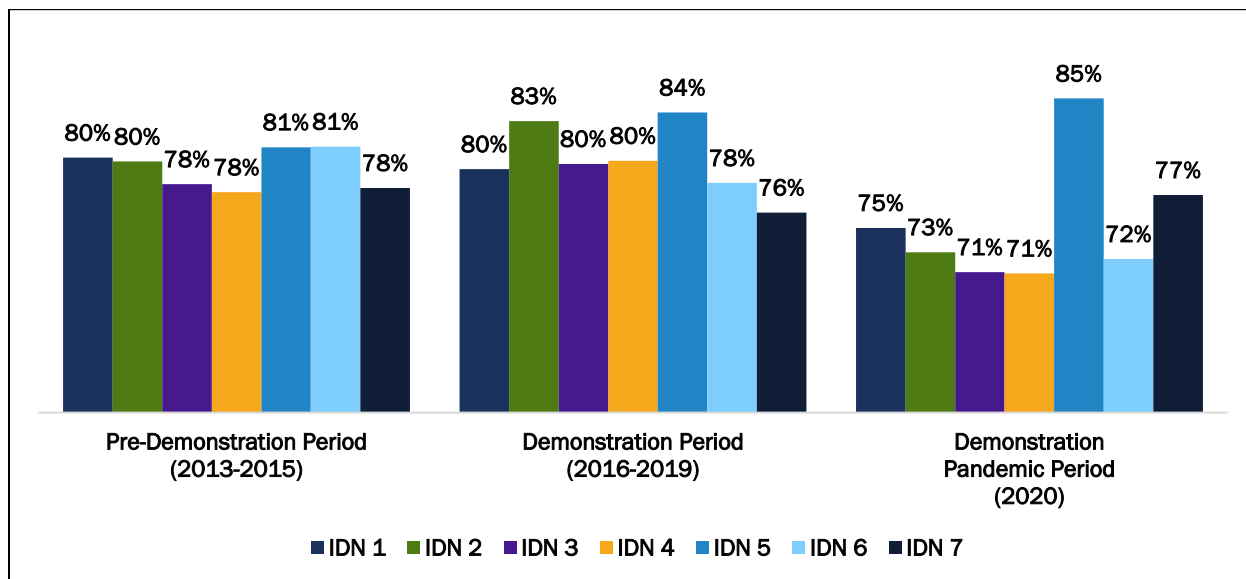
Without controlling for covariates, significant differences were found for some IDNs compared to IDN 2 in the percentage of Beneficiaries with schizophrenia or bipolar disorder who were screened for the diabetes while being prescribed antipsychotic medications (Table 6.1-48). Without controlling for covariates, significant differences were found for some IDNs compared to IDN 2 in the percentage of Beneficiaries with schizophrenia or bipolar disorder who were screened for diabetes while being prescribed antipsychotic medications (Table 6.1-49). Over the Demonstration period, there were significantly fewer screenings in IDN 1 and IDN 7 than the referent IDN (IDN 2). Further, in the Demonstration Pandemic period, IDN 5 was identified as having significantly more screenings.

Table 6.1-48. Percentage of Diabetes Screening for Beneficiaries with Schizophrenia or Bipolar Disorder with Significant Differences Compared to IDN 2 by Period

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Diabetes Screening for People with Schizophrenia or Bipolar who are Using Antipsychotic Medication			IDN 1 IDN 7	▼ ▼	IDN 5	▲

After controlling for age, gender, dual eligibility, whether the Beneficiary was enrolled in the expansion program, patient acuity (ACG risk score), and rurality of Beneficiary location, the generalized linear model regression results showed significant differences over time. Beneficiaries in IDN 2 with schizophrenia or bipolar disorder were 30% less likely to be screened in the Demonstration Pandemic period (Table 6.1-49) compared to the pre-

Demonstration period. There was no significant change between the pre- and Demonstration periods. Compared to IDN 2 (Figure 6.1—40, Figure 6.1—41), the rates of change between the pre-Demonstration and Demonstration periods were only significantly greater for IDN 1.

Figure 6.1—40. Results of Generalized Linear Model Estimating Rate of Change of Diabetes Screening for Beneficiaries with Schizophrenia or Bipolar Disorder Relative to IDN 2 (Demonstration Period)
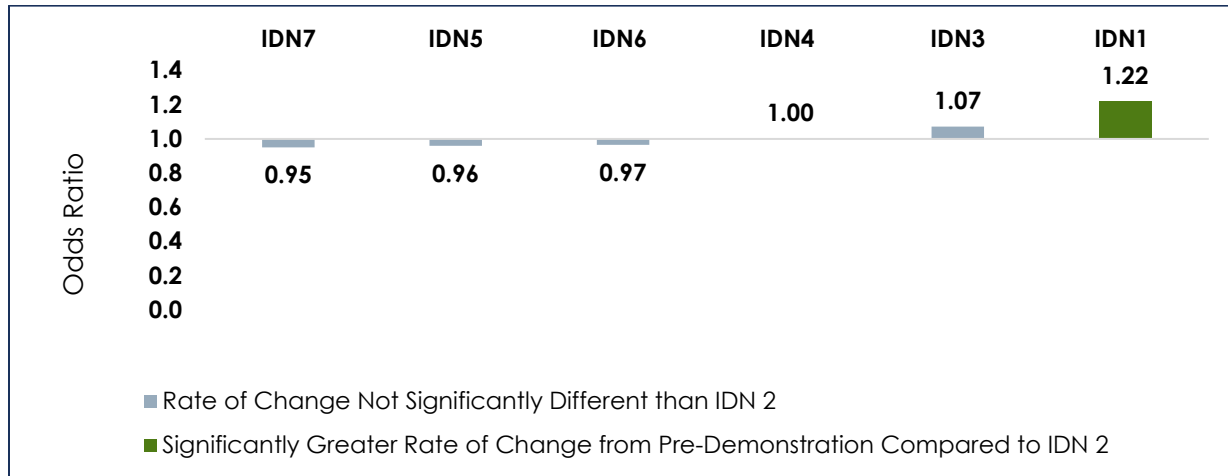

Figure 6.1—41. Results of Generalized Linear Model Estimating Rate of Change of Diabetes Screening for Beneficiaries with Schizophrenia or Bipolar Disorder Relative to IDN 2 (Demonstration Pandemic Period)
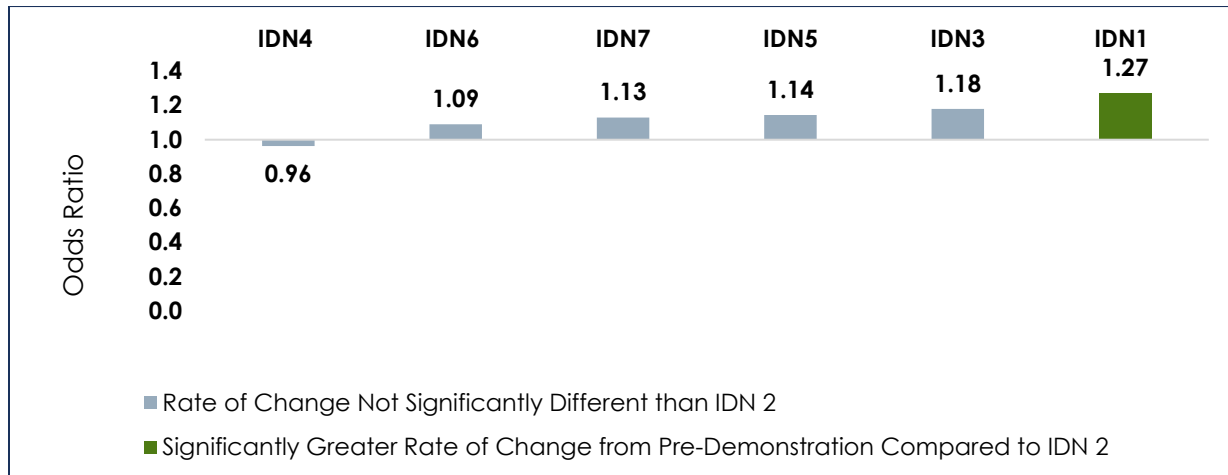
Table 6.1-49. Generalized Linear Models Estimating Diabetes Screening for Beneficiaries with Schizophrenia or Bipolar Disorder

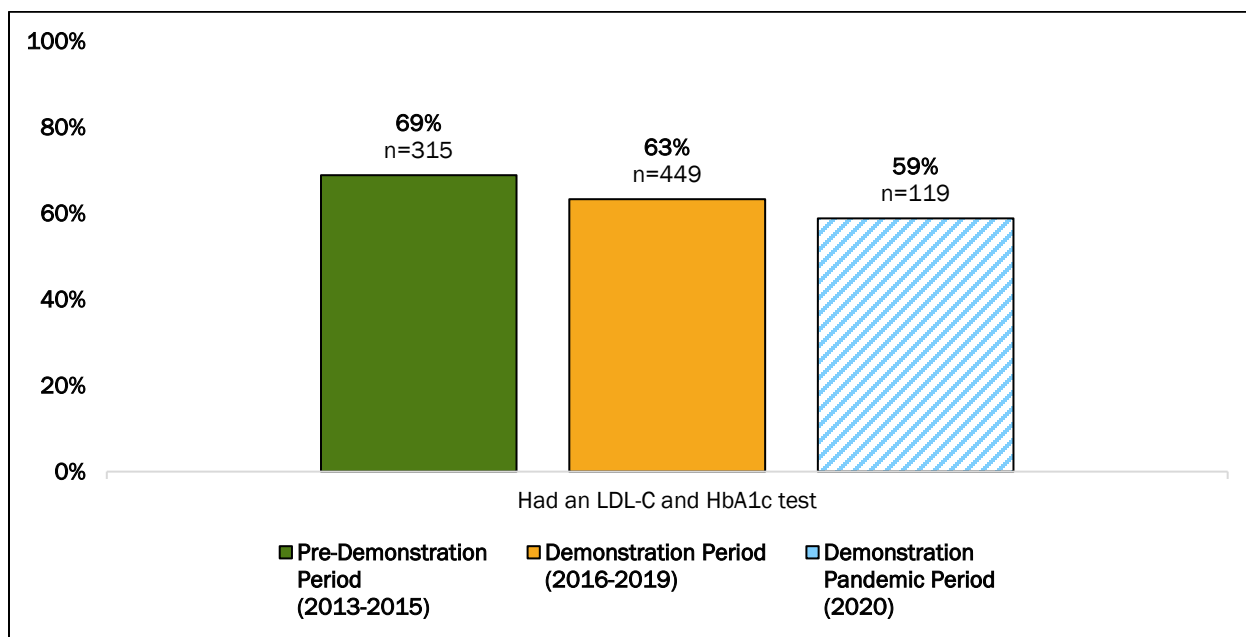| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.9618	0.3748	0.7043	<.0001
Time Interaction				
IDN 1	1.2207	**0.0004**	1.2688	**0.0028**
IDN 3	1.0728	0.2398	1.1794	0.0514
IDN 4	1.0036	0.9450	0.9622	0.6037
IDN 5	0.9602	0.5212	1.1441	0.1367
IDN 6	0.9656	0.5226	1.0896	0.2704
IDN 7	0.9506	0.4077	1.1300	0.0983

*Bold indicates significant (p<0.05)

6.1.3.7 Diabetes Monitoring for People with Diabetes and Schizophrenia

Studies estimate the exact prevalence of diabetes among people with schizophrenia to be 2 to 5 times greater than the general population. Once identified, people with diabetes and schizophrenia should receive optimal diabetes care. A key part of that care is monitoring for both lipid (LDL-C test) and blood glucoses (HbA1c test) levels.[67]

The percentage of Beneficiaries with diabetes and schizophrenia ages 18 to 64 receiving monitoring for blood glucose levels and lipids decreased over the study periods (Figure 6.1—42). Significantly fewer Beneficiaries in the Demonstration Pandemic period received diabetes monitoring (59%).

NH Medicaid is comparable to the National HEDIS® Medicaid benchmarks in the pre-Demonstration period where national rates ranged from 68.2% to 69.3%. In the Demonstration and Demonstration Pandemic periods, NH was lower than the national rates which ranged from 69.7% to 70.7% and 64.8%, respectively.[14]

Figure 6.1—42. Percentage of Diabetes Monitoring for People with Diabetes and Schizophrenia – Unadjusted

*Pattern within a column indicates significant change from Pre-Demonstration period

There was a significantly lower likelihood of diabetes monitoring for Beneficiaries with schizophrenia and diabetes in the Demonstration (36% lower) and Demonstration Pandemic (37% lower) periods after controlling for age, gender, dual eligibility, whether the Beneficiary was enrolled in the expansion program and patient acuity (ACG risk score), and geographic location (Table 6.1-50). For the Beneficiary population with schizophrenia and diabetes, dually eligible Beneficiaries were significantly less likely to receive diabetes monitoring

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[14] https://www.ncqa.org/hedis/measures/

Table 6.1-50. Logistic Model Diabetes Monitoring for People with Schizophrenia and Diabetes - Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	0.3848	0.3191	-0.2406	1.0103	0.2279
Demonstration Period	-0.4408	0.0986	-0.6340	-0.2475	**<.0001**
Demonstration Pandemic Period	-0.4615	0.1444	-0.7445	-0.1785	**0.0014**
Age	0.0079	0.0058	-0.0035	0.0192	0.1738
Female	0.1362	0.1146	-0.0884	0.3608	0.2347
Dual Eligible	-2.1031	0.1296	-2.3571	-1.8490	**<.0001**
Expansion Population	0.0206	0.2084	-0.3879	0.4292	0.9211
ACG Risk Score	0.0012	0.0056	-0.0099	0.0122	0.8362
Large Rural	-0.1691	0.1537	-0.4703	0.1322	0.2713
Small Rural	0.0209	0.1826	-0.3370	0.3788	0.9089
Isolated Rural	-0.3321	0.2382	-0.7989	0.1348	0.1633
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.6435	0.0634	0.5305	0.7807	**<.0001**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.6303	0.0910	0.4750	0.8365	**0.0014**

*Bold indicates significant (p<0.05)

6.1.3.8 Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia

People with schizophrenia are at higher risk for cardiovascular disease (CVD) and are generally less likely to receive treatment. Additionally, certain atypical antipsychotic medications increase low-density lipoprotein (LDL) cholesterol and triglycerides, and decrease high-density lipoprotein (HDL) cholesterol. Over two-thirds of people with schizophrenia, compared with approximately one-half in the general population, die of coronary heart disease (CHD) [15]. Thus, routine LDL-C testing is recommended for people with schizophrenia. The DSRIP demonstration seeks to improve integration of physical and behavioral health treatment. Improvement in LDL-C testing is one marker for improved quality of care for DSRIP Beneficiaries with schizophrenia.

People with schizophrenia are at higher risk for cardiovascular disease (CVD) and are generally less likely to receive treatment. Additionally, certain atypical antipsychotic medications increase low-density lipoprotein (LDL) cholesterol and triglycerides, and decrease high-density lipoprotein (HDL) cholesterol. Over two-thirds of people with schizophrenia, compared with approximately one-half in the general population, die of coronary heart disease (CHD) [16]. Thus, routine LDL-C testing is recommended for people with schizophrenia. The DSRIP demonstration seeks to improve integration of physical and behavioral health treatment. Improvement in LDL-C testing is one marker for improved quality of care for DSRIP Beneficiaries with schizophrenia.

As shown in Figure 6.1—43, the Beneficiary population with cardiovascular disease and schizophrenia in New Hampshire is small. The rate of Beneficiaries who have taken an LDL-C test gradually increases from 31% at pre-Demonstration to 35% at Demonstration. The highest rate occurred in the Demonstration Pandemic period at 38%.

Cardiovascular monitoring in New Hampshire was well below the National HEDIS® Medicaid benchmark. In the pre-Demonstration period national rates ranged from 76.2% to 79.1%; in the Demonstration period national rates ranged from 76.9% to 78.5%; and, in the Demonstration Pandemic period the national rate was 72.8%.[17]

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[15] Hennekens, C.H. et al. "Schizophrenia and increased risks of cardiovascular disease." American Heart Journal, 150:115-21, 2005.
[16] Hennekens, C.H. et al. "Schizophrenia and increased risks of cardiovascular disease." American Heart Journal, 150:115-21, 2005.
[17] https://www.ncqa.org/hedis/measures/

Figure 6.1—43. Cardiovascular Monitoring for People (age 18-64) with Cardiovascular Disease and Schizophrenia – Unadjusted
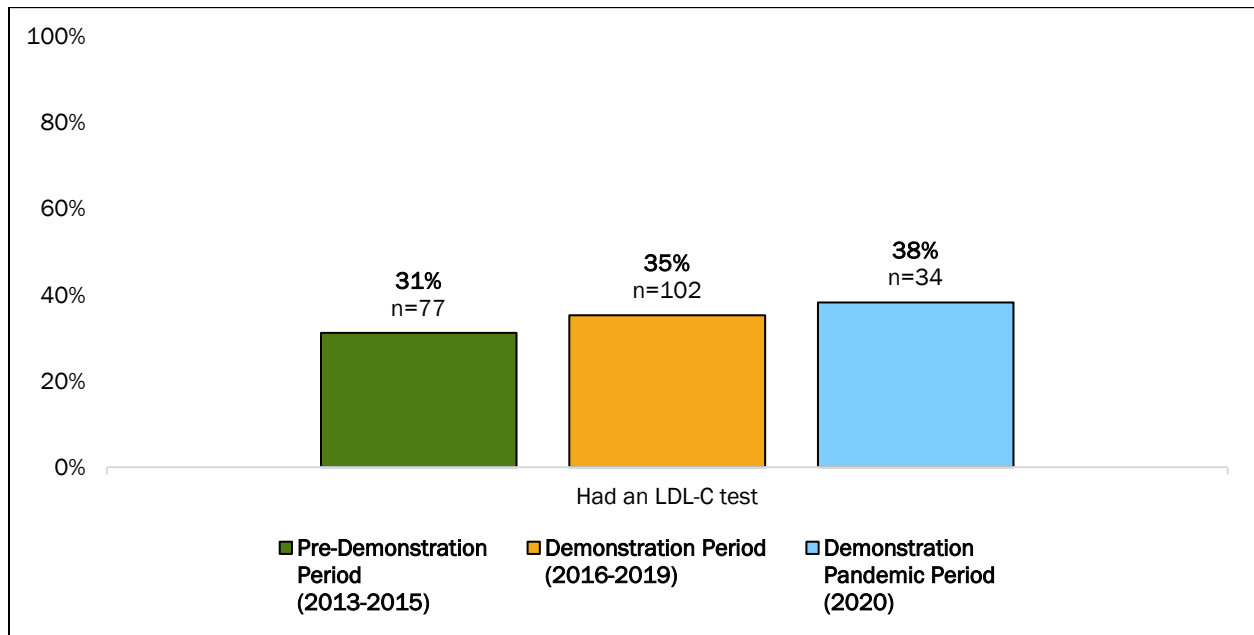
*Pattern within a column indicates significant change from Pre-Demonstration period

There were no significant differences in cardiovascular monitoring for people with schizophrenia between the pre- and Demonstration periods when controlling for Beneficiary characteristics of interest (Table 6.1-51). For the behavioral health population with cardiovascular disease and schizophrenia:

- Dually eligible Beneficiaries were significantly less likely to receive cardiovascular monitoring; and
- Cardiovascular monitoring is associated with older age.
- Higher rates of cardiovascular monitoring were associated with older age.

Table 6.1-51. Logistic Regression Model Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia Behavioral Health Group

| Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-4.8984	2.0270	-8.8712	-0.9256	0.0157
Demonstration Period	-0.0534	0.3102	-0.6614	0.5545	0.8632
Demonstration Pandemic Period	-0.6979	0.4590	-1.5974	0.2017	0.1284
Age	0.1026	0.0371	0.0300	0.1753	**0.0056**
Female	0.5245	0.3889	-0.2376	1.2867	0.1774
Dual Eligible	-2.0065	0.4945	-2.9758	-1.0372	**<.0001**
Expansion Population	0.2890	0.6010	-0.8889	1.4670	0.6306
ACG Risk Score	-0.0052	0.0154	-0.0353	0.0249	0.7338
Large Rural	-1.1779	0.6255	-2.4039	0.0482	0.0597
Small Rural	0.5890	0.5832	-0.5540	1.7320	0.3125
Isolated Rural	-0.8519	0.5807	-1.9901	0.2864	0.1424
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9480	0.2940	0.5161	1.7411	0.8632
BH Demonstration Pandemic vs Pre-Demonstration Period	0.4976	0.2284	0.2024	1.2234	0.1284

*Bold indicates significant (p<0.05)

6.1.3.9 Follow-up for Children Prescribed ADHD Medication

According to national data published by the American Academy of Pediatrics (AAP), about 9.4% of U.S. children ages 2-17 have been diagnosed at one time with attention deficit hyperactivity disorder (ADHD). Boys are more than twice as likely as girls to be diagnosed with ADHD. Additionally, children with ADHD show symptoms of an additional mental disorder and may also have learning and language problems.[68]

The AAP recommends monthly office visits until the child's condition stabilizes. Once the condition stabilizes, office visits should occur every three to six months.[69] The DSRIP Demonstration seeks to improve adherence to ADHD treatment recommendations by measuring follow-up care for children (age 6-12) newly prescribed ADHD medication at 30 (initiation) and 210 days (continuation). While there were small increases in the percentage of children ages 6-12 receiving follow-up care in the Demonstration period compared to the pre-Demonstration period, the majority of the differences between these periods were not statistically significant. Compared to the pre-Demonstration period, without controlling for covariates, Beneficiaries with a behavioral health disorder were significantly more likely to receive follow-up care in the continuation and management phase during the Demonstration period. In addition, compared to the non-behavioral health population Beneficiaries with a behavioral health disorder were more likely to receive follow-up care after being prescribed ADHD medication in the initiation phase and in the continuation and management phase (Figure 6.1—44)

Figure 6.1—44. Percentage of Children (ages 6-12) Receiving Follow-Up Care After Being Prescribed ADHD Medication – Unadjusted
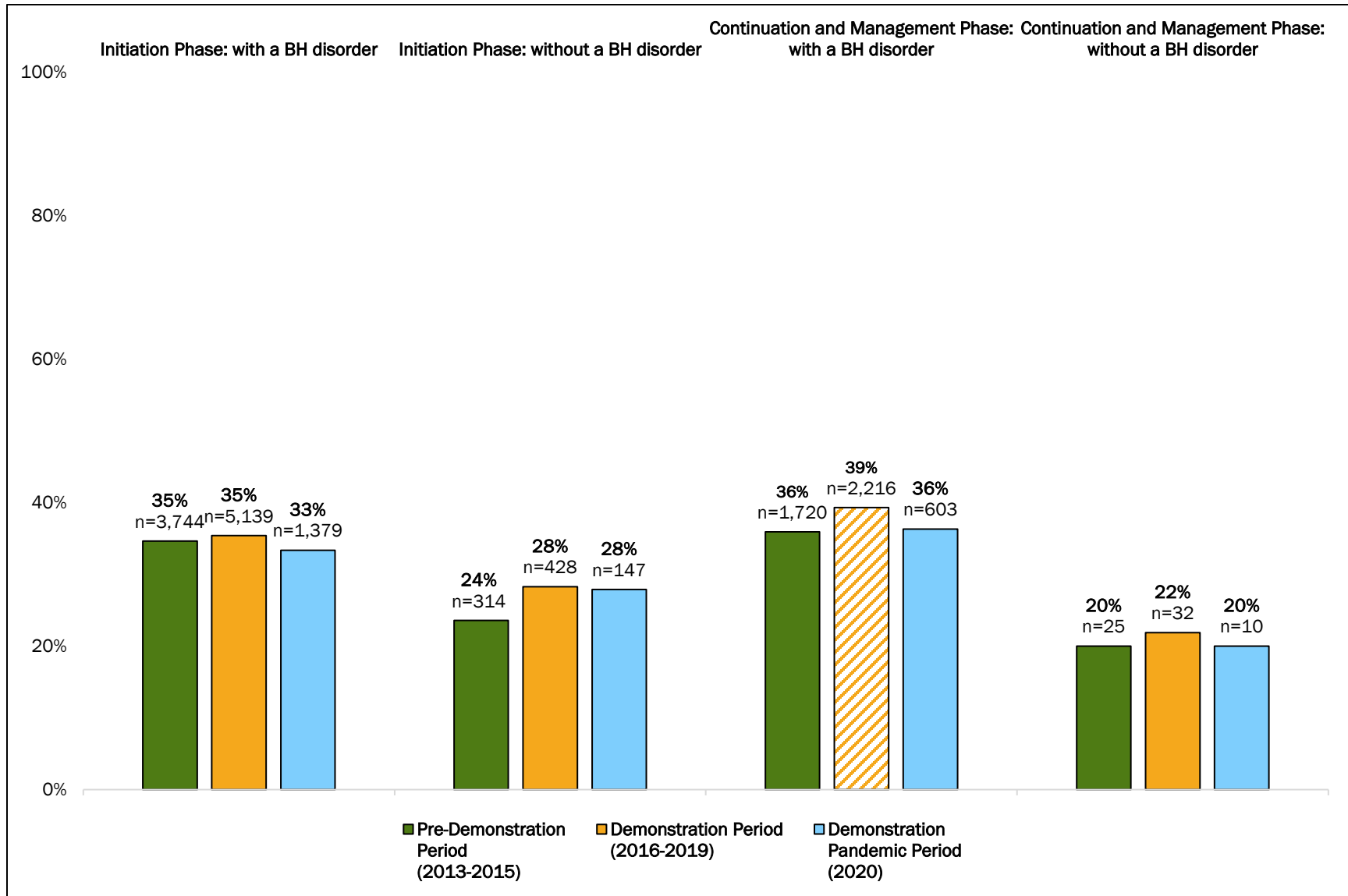
*Pattern within a column indicates significant change from Pre-Demonstration period

After controlling for Beneficiary characteristics of interest such as age and gender, no significant changes in the prevalence of 30-day follow-up (initiation) visits from the pre-Demonstration period to the Demonstration period. Results also found:

- Older children were less likely to have 30-day follow-up visits; and
- Children with higher ACG scores and small or isolated rural locations were associated 30-day follow-up visits (Table 6.1-52)

Table 6.1-52. Generalized Linear Models Estimating Initiation Phase of Follow-up Care for Children Prescribed ADHD Medication - Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	0.3710	0.1285	0.1192	0.6228	0.0039
Demonstration Period	0.0332	0.0458	-0.0566	0.1229	0.4687
Demonstration Pandemic Period	-0.0574	0.0674	-0.1895	0.0747	0.3946
Age	-0.1064	0.0121	-0.1301	-0.0828	**<.0001**
Female	0.0432	0.0455	-0.0460	0.1323	0.3427
ACG Risk Score	0.0932	0.0250	0.0443	0.1422	**0.0002**
Large Rural	-0.1091	0.0614	-0.2295	0.0112	0.0755
Small Rural	0.2675	0.0664	0.1372	0.3977	**<.0001**
Isolated Rural	0.1652	0.0769	0.0144	0.3159	**0.0318**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0337	0.0473	0.9450	1.1308	0.4687
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9442	0.0636	0.8274	1.0776	0.3946

*Bold indicates significant (p<0.05)

The significant increases were found in the likelihood of follow-up visits during the Demonstration period (15%) after controlling for covariates of the 210-day follow-up (continuation and management phase) visits (Table 6.1-53)

Table 6.1-53. Generalized Linear Models Estimating Continuation & Management Phase of Follow-up Care for Children Prescribed ADHD Medication - Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	0.3710	0.1876	0.0033	0.7386	0.0480
Demonstration Period	0.1460	0.0668	0.0151	0.2769	**0.0288**
Demonstration Pandemic Period	0.0037	0.0993	-0.1910	0.1984	0.9702
Age	-0.1049	0.0183	-0.1406	-0.0691	**<.0001**
Female	0.0803	0.0667	-0.0504	0.2111	0.2284
ACG Risk Score	0.0685	0.0333	0.0033	0.1337	**0.0396**
Large Rural	-0.2235	0.0893	-0.3984	-0.0486	**0.0123**
Small Rural	0.3691	0.0937	0.1855	0.5527	**<.0001**
Isolated Rural	0.1534	0.1078	-0.0578	0.3647	0.1545
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.1572	0.0773	1.0153	1.3190	**0.0288**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0037	0.0997	0.8261	1.2195	0.9702

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—45 and Figure 6.1—46, there was variation among the IDNs in both phases of follow-up care for children prescribed ADHD medication. Despite a decrease in their initiation phase rates of follow-up care, IDN 7 had the highest rate in all study periods and IDN 3 saw the greatest improvement in follow-up care from the pre-Demonstration period to the Demonstration period. In the continuation and management phase, IDN 7 had the highest rate in the pre-Demonstration period (55%), but this rate dropped in the Demonstration period (41%). IDN 5 was the only other IDN that did not see an improvement between the pre-Demonstration and Demonstration study periods.

Figure 6.1—45. Initiation Phase of Follow-Up Care for Children (age 6-12) Prescribed ADHD Medication by IDN
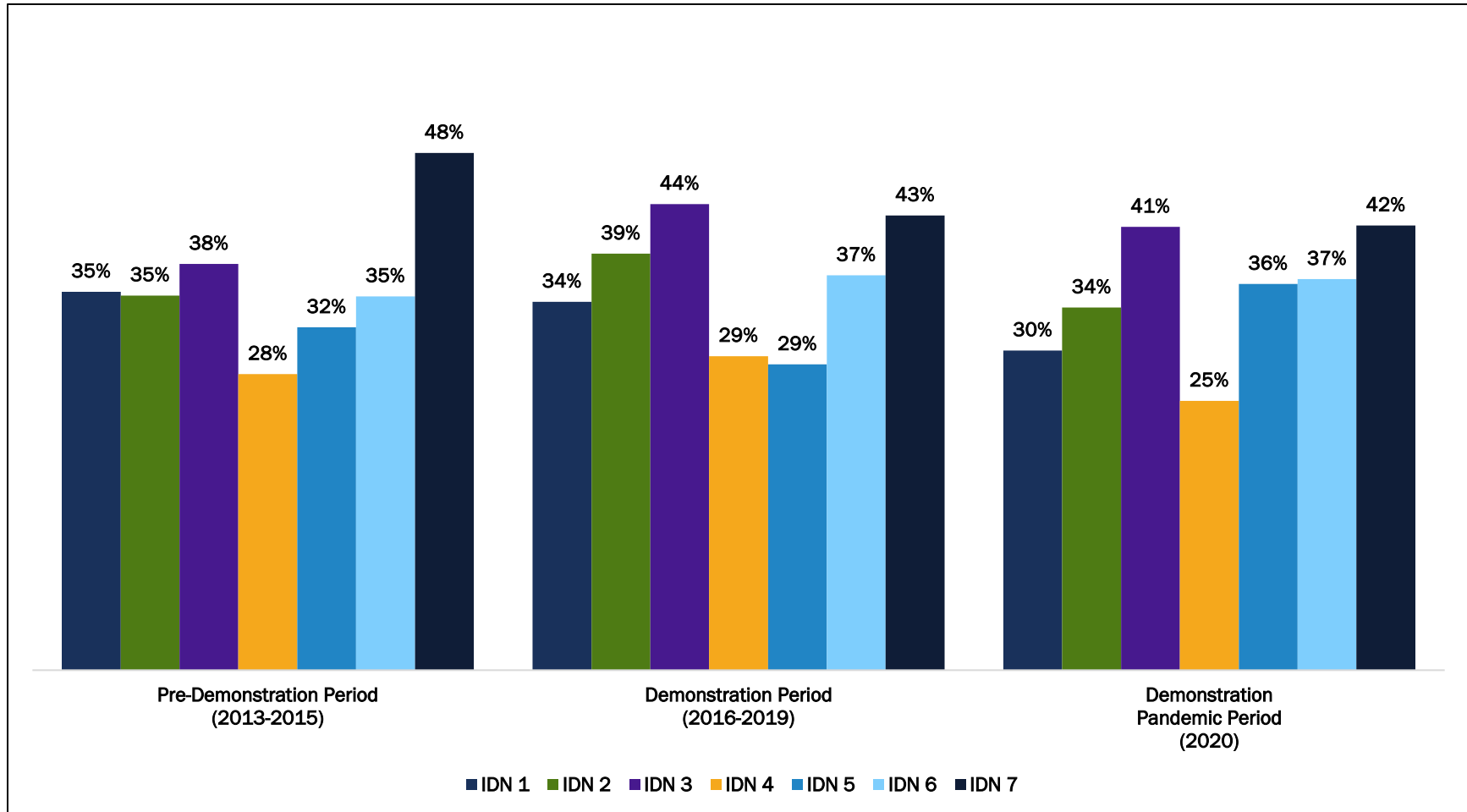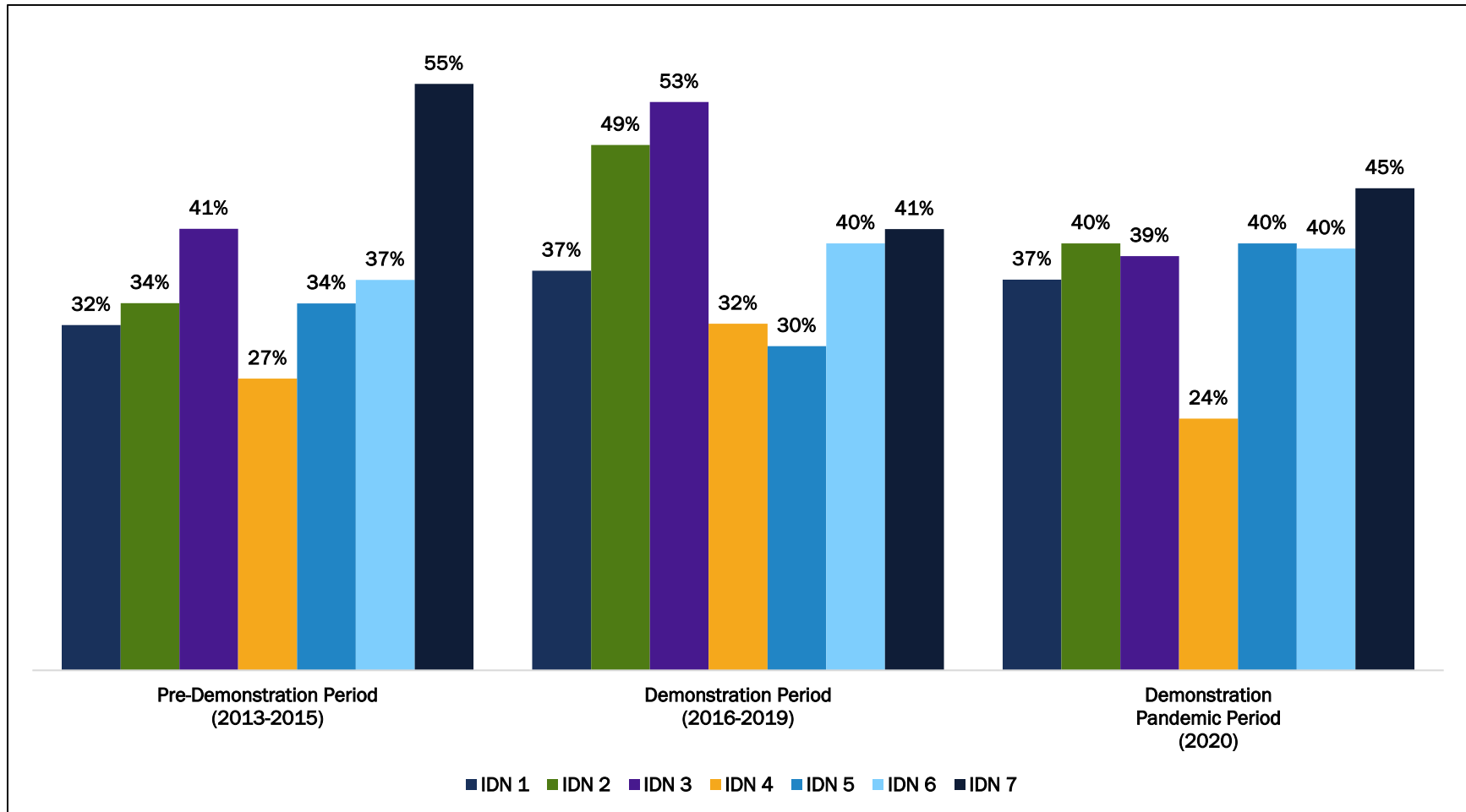
Figure 6.1—46. Continuation and Management Phase of Follow-Up Care for Children (age 6-12) Prescribed ADHD Medication by IDN

There were differences in the percentage of Beneficiaries having follow-up visits during the initiation and/or continuation and management phases when compared to IDN2 without controlling for factors such as age, gender, and patient acuity (Table 6.1-54). Compared to IDN 2:

- In the pre-Demonstration period, behavioral health Beneficiaries in IDN 4 were less likely to have a follow-up visit in the initiation phase, and those in IDN 7 were more likely.
- In the Demonstration period, behavioral health Beneficiaries in IDNs 4 and 5 were less likely to have a follow-up visit in the initiation phase.
- In the pre-Demonstration period, behavioral health Beneficiaries in IDN 7 were more likely to have a follow-up visit in the continuation and management phase.
- In the Demonstration period, behavioral health Beneficiaries in IDNs 1, 2, 5, and 6 were less likely to have a follow-up visit in the continuation and management phase. Only IDN 4 was less likely in the Demonstration pandemic period.

Table 6.1-54. Percentage of Follow-Up Visits for Children Prescribed ADHD Medication for IDNs with Significant Differences Compared to IDN 2 by Period

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase/ Decrease	IDN	Increase/ Decrease	IDN	Increase/ Decrease
Initiation Phase (Behavioral Health)	IDN 4	▼	IDN 4	▼		
	IDN 7	▲	IDN 5	▼		
Continuation and Management Phase (Behavioral Health)	IDN 7	▲	IDN 1	▼	IDN 4	▼
			IDN 4	▼		
			IDN 5	▼		
			IDN 6	▼		

After controlling for Beneficiary characteristics of interest, there were no significant differences over time in rates for the initiation phase of follow-up care for children on ADHD medication (Table 6.1-55).

Table 6.1-55. Generalized Linear Models Estimating Initiation Phase of Follow-up Care for Children Prescribed ADHD Medication - Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	1.1699	0.3006	0.9436	0.8028
Time Interaction				
IDN 1	0.8135	0.2737	0.7978	0.4363
IDN 3	1.0943	0.6465	1.2122	0.5133
IDN 4	0.9348	0.7057	0.9714	0.9148
IDN 5	0.7177	0.1366	1.2417	0.5055
IDN 6	0.9284	0.6903	1.1432	0.6347
IDN 7	0.6770	0.0558	0.2454	0.4554

*Bold indicates significant (p<0.05)

Children Beneficiaries in IDN 2 were nearly twice as likely to have follow-up in the continuation and management phase after being prescribed ADHD medication when compared to the other IDNs in the state. The rate of change in follow-up for children Beneficiaries in IDN 6 was significantly less during the Demonstration Pandemic period for the continuation and management phase when compared to the other IDNs in the state (Table 6.1-56).

Compared to IDN 2:

- The rate of increase in follow-up for children Beneficiaries in IDN 5 was significantly less during the Demonstration period for the continuation and management phase.
- The rate of change in follow-up for children Beneficiaries in IDN 6 was significantly less during the Demonstration Pandemic period for the continuation and management phase.

Table 6.1-56. Generalized Linear Models Estimating Continuation & Management Phase of Follow-up Care for Children Prescribed ADHD Medication – Behavioral Health Population

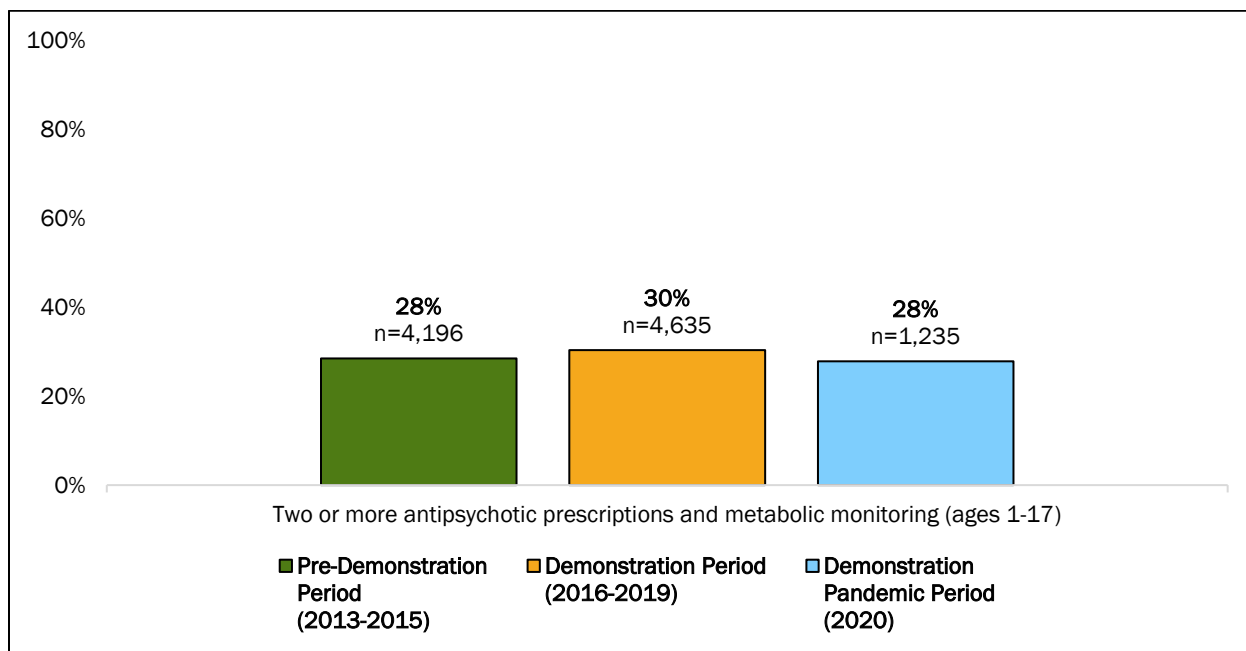| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	1.8415	0.0054	1.2890	0.4576
Time Interaction				
IDN 1	0.6697	0.1462	0.8712	0.7408
IDN 3	0.9067	0.7349	0.7406	0.4991
IDN 4	0.6827	0.1460	0.6354	0.2758
IDN 5	0.4473	**0.0111**	0.6306	0.0905
IDN 6	0.8866	0.7675	0.3242	**0.0001**
IDN 7	0.5211	0.1539	1.2891	0.4576

*Bold indicates significant (p<0.05)

6.1.3.10 Metabolic Monitoring for Children & Adolescents on Antipsychotics

Similar to the use of antipsychotics in adults, the use of antipsychotics in children puts them at higher risk for metabolic health complications including weight gain and diabetes. The AAP recommends metabolic monitoring for children and adolescents on antipsychotics.[70] Children and adolescents should receive at least one blood glucose test (HbA1c) and cholesterol (LDL-C) during the year. The DSRIP Demonstration seeks to improve rates of metabolic monitoring in children and adolescents through better integration of mental and physical health care.

The rate of metabolic monitoring stayed relatively consistent from the pre-Demonstration to the Demonstration periods. Less than one-third of children and adolescents on antipsychotics received the required metabolic screenings (Figure 6.1—47).

New Hampshire Medicaid rates for metabolic monitoring of children and adolescents on antipsychotics is slightly lower than the national HEDIS® benchmark. In the pre-Demonstration period, the national rate was 29.8% in 2015 (pre-Demonstration period) and ranged from 33.3% in 2016 to 37.8% in 2019 (Demonstration).[18]

Figure 6.1—47. Metabolic Monitoring for Children and Adolescents on Antipsychotics

*Pattern within a column indicates significant change from Pre-Demonstration period

No significant change in monitoring rates was found over the study periods when controlling for Beneficiary characteristics of interest (Table 6.1-57). However, for the children and adolescents on antipsychotic medication:

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[18] https://www.ncqa.org/hedis/measures/

- Older adolescents and those with higher ACG risk scores were more likely to receive metabolic monitoring;
- Females were less likely to receive metabolic monitoring; and
- Higher rates of metabolic monitoring were associated with Beneficiaries living in large and small rural geographic locations

Table 6.1-57. Generalized Linear Models Estimating Metabolic Monitoring for Children and Adolescents on Antipsychotics - Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-1.7260	0.1113	-1.9442	-1.5078	<.0001
Demonstration Period	0.0715	0.0486	-0.0238	0.1668	0.1412
Demonstration Pandemic Period	-0.0102	0.0738	-0.1549	0.1344	0.8898
Age	0.0535	0.0082	0.0374	0.0695	**<.0001**
Female	-0.1812	0.0599	-0.2986	-0.0637	**0.0025**
ACG Risk Score	0.0290	0.0102	0.0089	0.0491	**0.0046**
Large Rural	0.1972	0.0722	0.0558	0.3386	**0.0063**
Small Rural	0.4523	0.0829	0.2898	0.6149	**<.0001**
Isolated Rural	-0.0315	0.1066	-0.2404	0.1775	0.7678
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0741	0.0522	0.9765	1.1815	0.1412
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9898	0.0730	0.8565	1.1439	0.8898

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—48, the prevalence of metabolic monitoring for children and adolescents on antipsychotics varied by IDN in each study period. Metabolic monitoring ranges from 21% to 39% in the pre-Demonstration phase, from 26% to 48% in the Demonstration phase, and from 25% to 35% in the Demonstration Pandemic period.

Figure 6.1—48. Metabolic Monitoring for Children and Adolescents on Antipsychotics by IDN
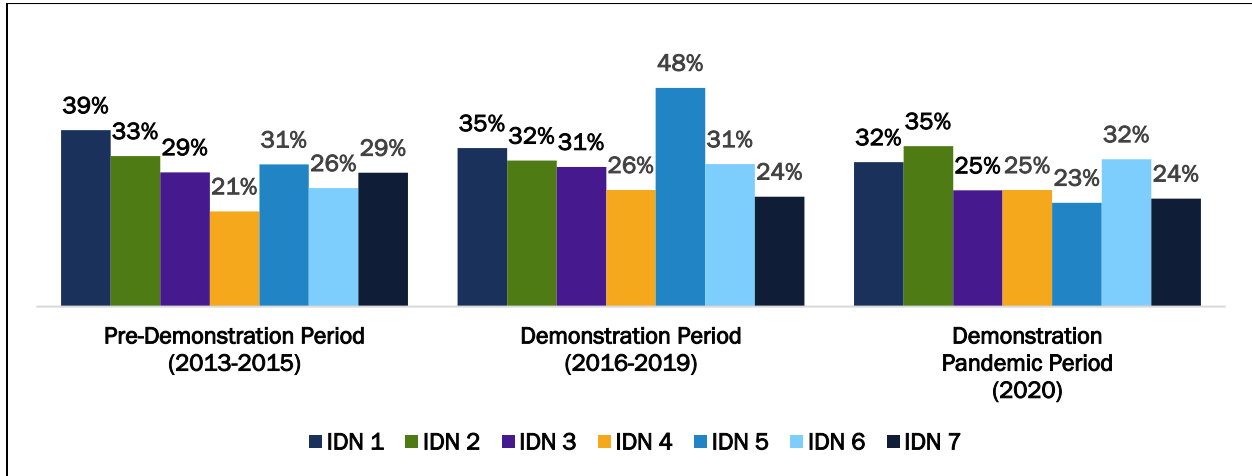
Without controlling for key factors such as age and gender, results show significant differences for some IDNs compared to IDN 2 in the prevalence of metabolic monitoring (Table 6.1-58). Metabolic monitoring for children and adolescents on antipsychotics for behavioral health Beneficiaries was significantly lower for IDNs 4 and 6 during the pre-Demonstration. There was significantly less metabolic monitoring in IDNs 4 and 7, but significantly more in IDN 5 in the Demonstration period.

Table 6.1-58. Percentage of Children and Adolescents on Antipsychotic Medication Receiving Metabolic Monitoring by IDNs with Significant Differences Compared to IDN 2 by Period

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)	
	IDN	Higher / Lower	IDN	Higher / Lower
Diabetes Screening for People with Schizophrenia or Bipolar who are Using Antipsychotic Medication	IDN 4	▼	IDN 4	▼
	IDN 6	▼	IDN 5	▲
			IDN 7	▼

After controlling for covariates of interest, results show significant differences over time in monitoring (Table 6.1-59). There were no significant differences in IDN 2 between the pre and post periods. Compared to IDN 2:

- The rate of change in the likelihood of metabolic monitoring for Beneficiaries in IDN 5 on antipsychotics was over two times greater between the pre-Demonstration and Demonstration periods.
- The rate of change for Beneficiaries in IDN 6 was 1.5% times greater between the two periods

Table 6.1-59. Generalized Linear Models Estimating Metabolic Monitoring for Children and Adolescents on Antipsychotics – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.8751	0.4046	1.0757	0.7603
Time Interaction				
IDN 1	0.9814	0.9233	0.7108	0.2578
IDN 3	1.2392	0.2908	0.8573	0.6188
IDN 4	1.4319	0.0587	1.1828	0.5431
IDN 5	2.0646	**0.0011**	0.5298	0.1165
IDN 6	1.5148	**0.0408**	1.3200	0.3456
IDN 7	0.8535	0.4678	0.6700	0.2402

*Bold indicates significant (p<0.05)

Figure 6.1—49. Results of Generalized Linear Model Estimating Metabolic Monitoring for Children and Adolescents on Antipsychotics Relative to IDN 2 – Behavioral Health Population (Demonstration Period)
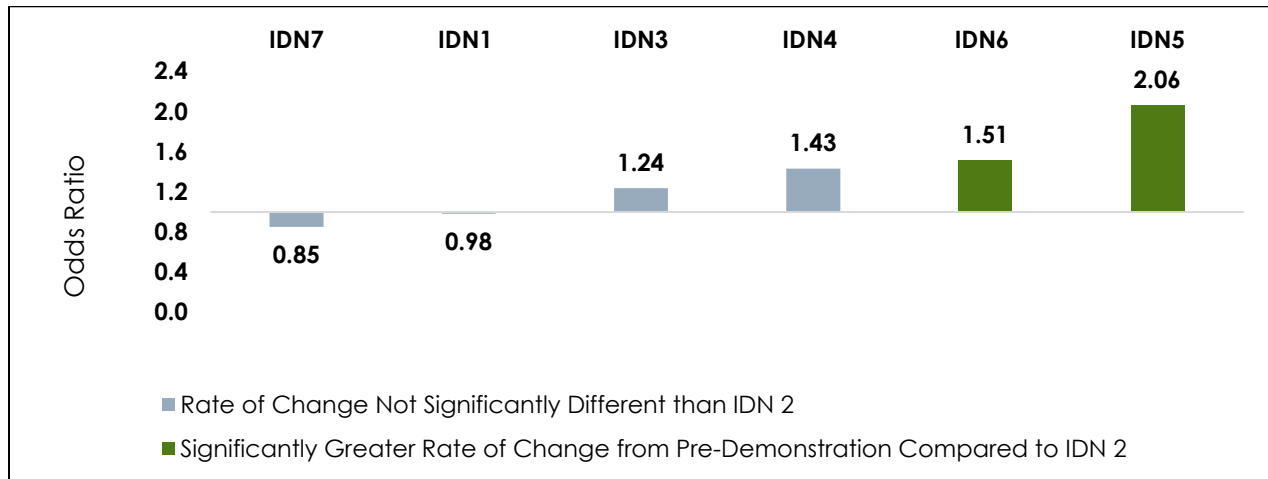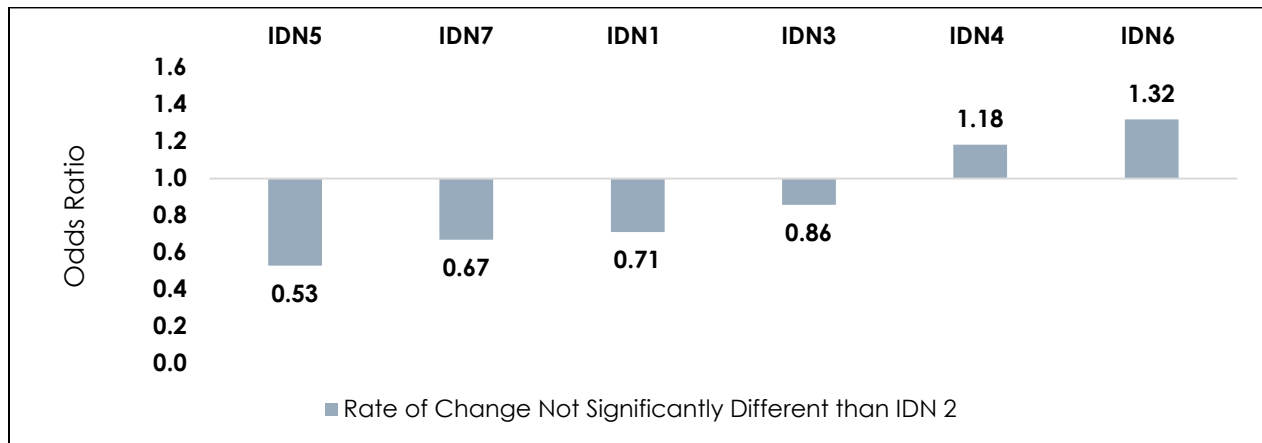
Figure 6.1—50. Results of Generalized Linear Model Estimating Metabolic Monitoring for Children and Adolescents on Antipsychotics Relative to IDN 2 – Behavioral Health Population (Demonstration Pandemic Period)
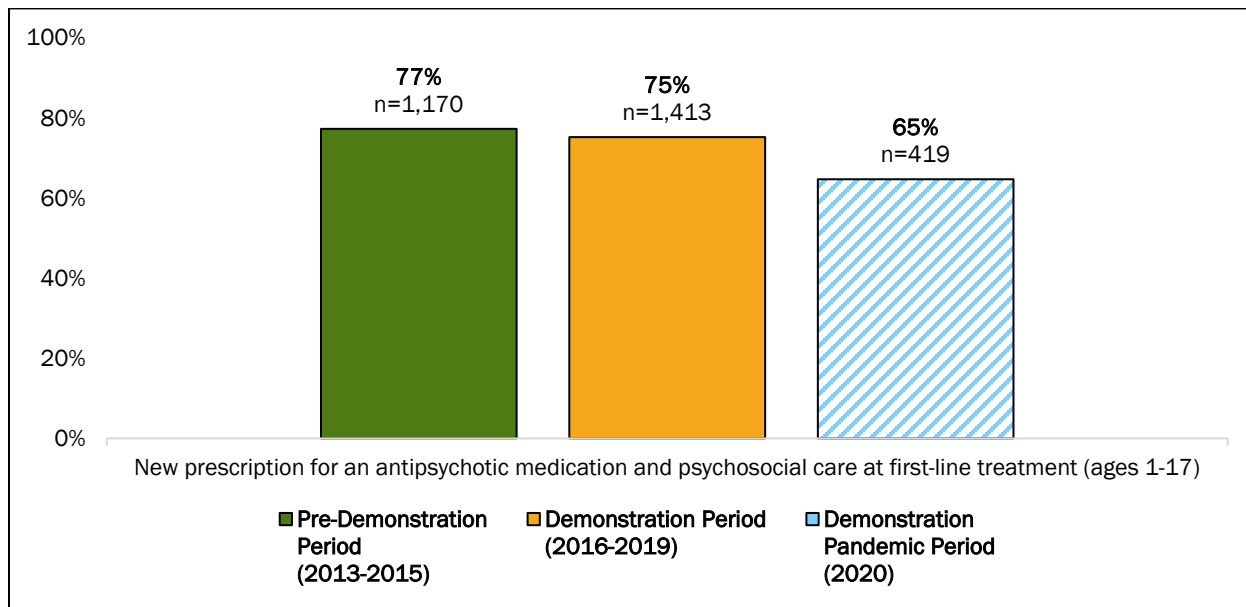
6.1.3.11 Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics

The Food and Drug Administration (FDA) has identified a limited number of behavioral health conditions (i.e., bipolar, schizophrenia, psychotic, tic disorders and irritability management related to autism) for which antipsychotics are a recommended first-line of treatment. Increasingly, antipsychotics are being prescribed for children who have conditions such as ADHD and disruptive behavior disorders for whom psychosocial interventions are recommended first-line treatment[19].

The DSRIP Demonstration, through improved integration of care, seeks to increase the use of first-line psychosocial care (e.g., behavioral health therapy) for children and adolescents prior to use of antipsychotics and improve evidence-based prescribing of antipsychotics in children and adolescents.

At least 75% of NH Medicaid children and adolescents prescribed antipsychotics received first-line psychosocial treatment (Figure 6.1—51) in the Demonstration Pandemic period. During the Demonstration Pandemic period, significantly fewer children and adolescent Beneficiaries received first-line psychosocial treatment (65%). Notably, New Hampshire Medicaid is well above the national HEDIS® benchmark on this measure. In the pre-Demonstration period, the national HEDIS® benchmark was 54.7% in 2015, and ranged from 57.6% to 62.0% throughout the Demonstration phases.[20]

Figure 6.1—51. The Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication - Unadjusted

*Pattern within a column indicates significant change from Pre-Demonstration period

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[19] https://www.ahrq.gov/sites/default/files/wysiwyg/pqmp/measures/chronic/chipra-148-antipsychotics-psychosocial-care-report.pdf
[20] https://www.ncqa.org/hedis/measures/

When controlling for Beneficiary characteristics of interest, no significant change in the use of first-line psychosocial care for children and adolescents on antipsychotic medications were found in the Demonstration period (Table 6.1-60). In the Demonstration Pandemic period, Beneficiaries were 48% less likely to receive psychosocial care. For the population of children and adolescents on antipsychotic medication, results of the model also found:

- First-line psychosocial care was associated with female Beneficiaries; and
- Older children and adolescents or those living in small rural locations were less likely to have first-line psychosocial care.

Table 6.1-60. Generalized Linear Models Estimating the Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication - Behavioral Health

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	1.5724	0.1917	1.1967	1.9482	<.0001
Demonstration Period	-0.1168	0.0930	-0.2991	0.0655	0.2093
Demonstration Pandemic Period	-0.6472	0.1253	-0.8928	-0.4017	**<.0001**
Age	-0.0307	0.0141	-0.0584	-0.0030	**0.0300**
Female	0.1980	0.0953	0.0112	0.3849	**0.0378**
ACG Risk Score	0.0264	0.0223	-0.0174	0.0701	**0.2370**
Large Rural	-0.0498	0.1186	-0.2822	0.1827	0.6748
Small Rural	-0.3238	0.1438	-0.6057	-0.0419	**0.0244**
Isolated Rural	-0.2111	0.1669	-0.5382	0.1159	0.2058
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8898	0.0828	0.7415	1.0677	0.2093
BH Demonstration Pandemic vs Pre-Demonstration Period	0.5235	0.0656	0.4095	0.6692	**<.0001**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—52, the use of first-line psychosocial care for children and adolescents varied by study period and by IDN. In the pre-Demonstration period, the rate ranged from 63% to 81% and in the Demonstration period the rate ranged from 68% to 88%. Rates were the lowest in the Demonstration Pandemic period.

Figure 6.1—52. The Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication by IDN
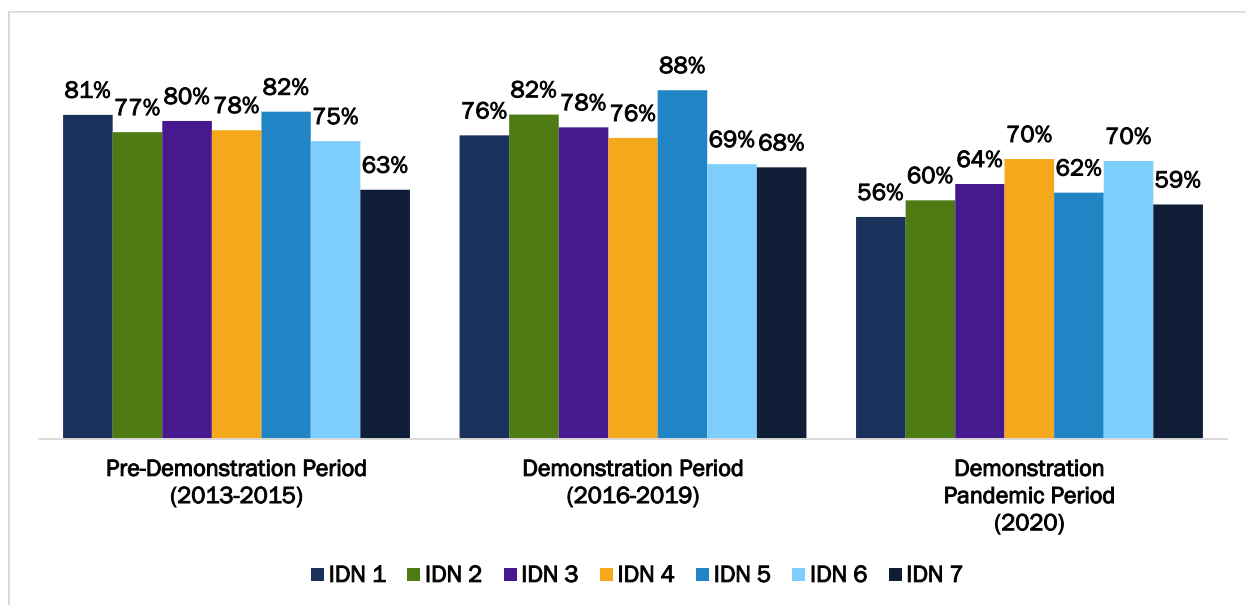
Unadjusted regression results (Table 6.1-61) show significant differences for two IDNs compared to IDN 2 in the rate of first-line psychosocial care for children and adolescents on antipsychotic medication. Compared to IDN 2:

- In the pre-Demonstration period, rates were significantly lower for Beneficiaries in IDN 7; and
- In the Demonstration phase, rates were significantly lower for Beneficiaries in IDNs 6 and 7

Table 6.1-61. Percentage of Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication with Significant Differences Compared to IDN 2 by Period

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
The Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication	IDN 7	▼	IDN 6 IDN 7	▼ ▼		

After controlling for age, gender, dual eligibility, whether Beneficiaries were enrolled in the expansion program, patient acuity (ACG risk score), and geographic location of the Beneficiary regression results only showed significant differences over time in the Demonstration pandemic period (Figure 6.1—53). Beneficiaries in IDN 2 were 58% less likely to use first-line psychosocial care in the Demonstration Pandemic period compared to the pre-Demonstration period (Figure 6.1—54). There were no significant differences in the rate of change among the IDNs.

Figure 6.1—53. Results of Generalized Linear Model Estimating Rate of Change of Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication (Demonstration Period)
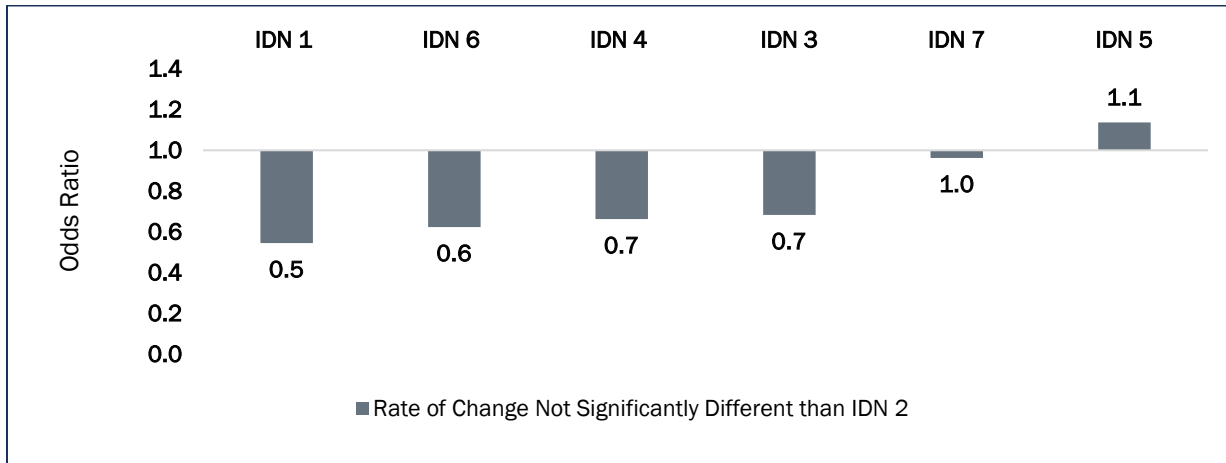

Figure 6.1—54. Results of Generalized Linear Model Estimating Rate of Change of Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic Medication (Demonstration Pandemic Period)
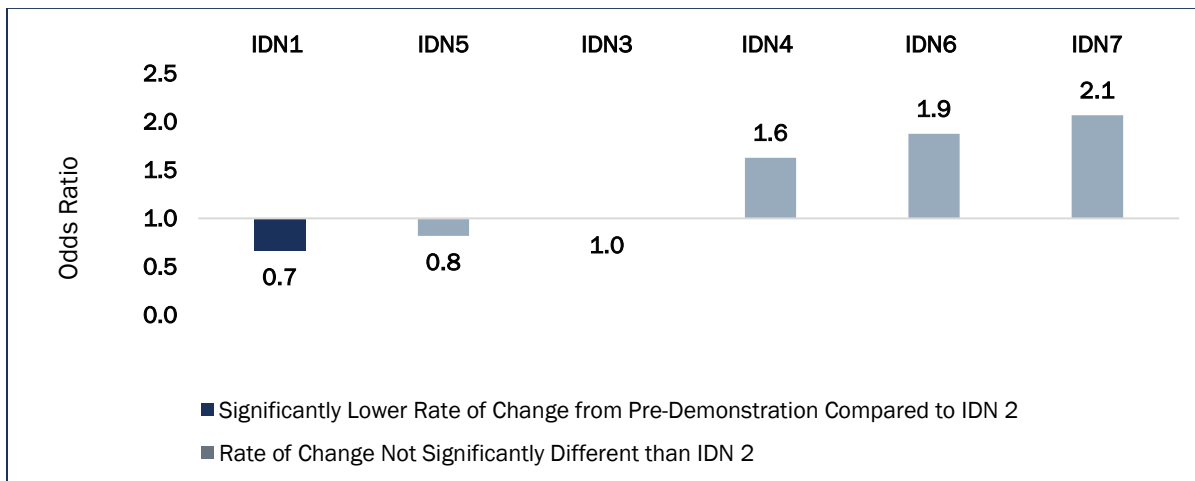
Table 6.1-62. Generalized Linear Models Estimating the Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotic – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	1.3108	0.4180	0.4182	**0.0357**
Time Interaction				
IDN 1	0.5448	0.1449	0.6651	0.4582
IDN 3	0.6824	0.3717	0.9947	0.9921
IDN 4	0.6626	0.2819	1.6279	0.3121
IDN 5	1.1373	0.8001	0.8192	0.7634
IDN 6	0.6238	0.2439	1.8757	0.2229
IDN 7	0.9628	0.9289	2.0670	0.1746

* Bold indicates significant (p<0.05)

6.1.3.12 Use of Opioids at High Dosage

As noted earlier, at an age-adjusted rate of 33.1 deaths per 100,000 persons, NH has one of the highest rates of opioid deaths in the country.[51] The NH Governor's Commission on Alcohol and other Drugs has an Opioid Task Force to focus on the state's high priority concern relative to opioid misuse.

Opioids are an appropriate component of a pain management plan; however, prolonged use at high dosages can lead to many side effects including dependence, increased tolerance, and death. Clinical evidence suggests that the maximum dose prescribed should be 120 morphine equivalent dose (MED).[71]

This measure looks at the rate of opioids prescribing above the maximum dose recommendation of 120 MED. Due to the lack of drug information for Beneficiaries who are dual eligible (covered by both Medicare and Medicaid), this measure is calculated for members who are covered by Medicaid only.

The opioids at high dosage rate was calculated for two groups of Beneficiaries: those with and those without a documented behavioral health condition (Figure 6.1—55). Compared to the pre-Demonstration period:

- Significantly fewer Beneficiaries with behavioral health disorders used opioids above the high-dosage threshold in the Demonstration period compared to the pre-Demonstration period.
- Among Beneficiaries without a behavioral health disorder, significantly more Beneficiaries used opioids above the high-dosage threshold in the Demonstration period.

Compared to the non-Behavioral Health group:

- Without controlling for covariates such as age and gender, the use of opioids at high dosage rate was higher for Beneficiaries with a behavioral health disorder in the pre-Demonstration period, but lower in the Demonstration period.

Figure 6.1—55. Use of Opioids at High Dosage (Rate per 1,000) - Unadjusted
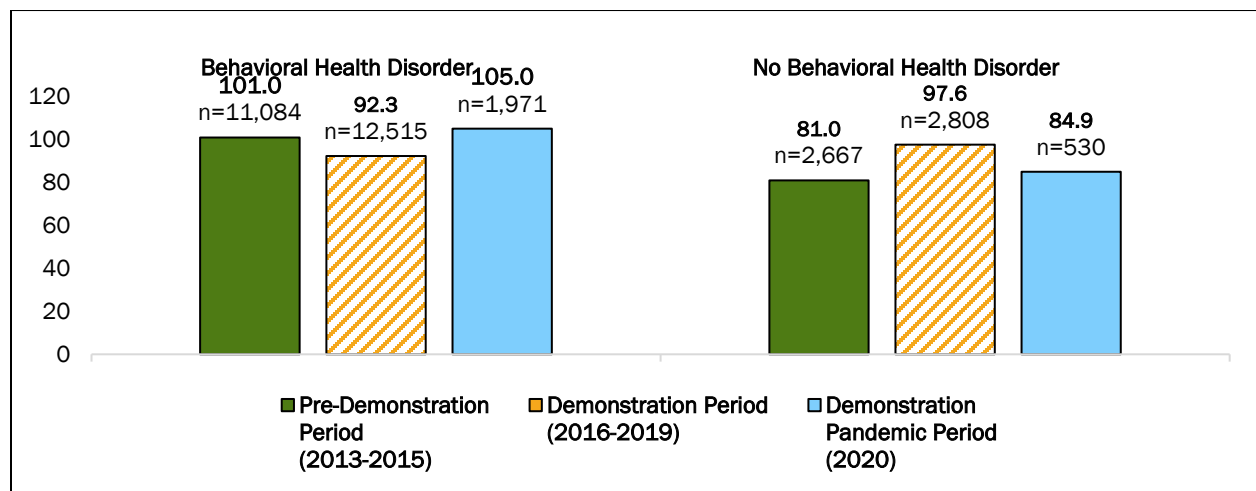
*Pattern within a column indicates significant change from Pre-Demonstration period

The change from pre-Demonstration to Demonstration in use of opioids at high dosage was not significantly different between the behavioral health and the non-behavioral health populations. However, among the behavioral health population, the likelihood of use of opioids at high dosage significantly declined (21%) from pre-Demonstration to Demonstration (Table 6.1-63).

Table 6.1-63. Generalized Linear Models Estimating Use of Opioids at High Dosage (Rate per 1,000)

Propensity Matched Sample (N=21,298)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.0812	0.1281	0.8572	1.3638	0.5097
Demonstration Period (BH to Non-BH)	0.8241	0.1004	0.6490	1.0463	0.1122
Demonstration Pandemic Period (BH to Non-BH)	0.9515	0.1882	0.6458	1.4021	0.8016
Change Pre-Demonstration/ Demonstration Period BH sample	0.7925	0.0681	0.6697	0.9378	**0.0068**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	1.0378	0.1420	0.7938	1.3569	0.7861
Change Pre-Demonstration/ Demonstration Period Non-BH sample	1.0397	0.1415	0.7964	1.3575	0.7745
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	1.1793	0.2217	0.8158	1.7047	0.3804
BH vs. Non-BH Time Interaction (Demonstration Period)	0.7622	0.1166	0.5647	1.0287	0.0759
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.8800	0.1966	0.5680	1.3634	0.5672

*Bold indicates significant (p<0.05)

Analysis of the behavioral health population only showed a significant change of 23% between the pre-Demonstration and Demonstration periods when controlling for Beneficiary characteristics of interest (Table 6.1-64). Among Beneficiaries with behavioral health conditions:

- Females and were less likely to use opioids at a high dosage; and
- Use of opioids at high dosages was associated with older Beneficiaries.

Table 6.1-64. Generalized Linear Models Estimating Use of Opioids at High Dosage (Rate per 1,000) – Unmatched Behavioral Health Sample

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-2.5474	0.1966	-2.9327	-2.1621	<.0001
Demonstration Period	-0.2619	0.0825	-0.4236	-0.1001	**0.0015**
Demonstration Pandemic Period	-0.0092	0.1465	-0.2963	0.2778	0.9498
Age	0.0109	0.0035	0.0040	0.0178	**0.0021**
Female	-0.3790	0.0897	-0.5549	-0.2031	**<.0001**
Expansion Population	-0.0938	0.0982	-0.2863	0.0986	0.3393
ACG Risk Score	0.0027	0.0061	-0.0091	0.0146	0.6504
Large Rural	-0.0694	0.1324	-0.3290	0.1902	0.6003
Small Rural	-0.0813	0.1359	-0.3477	0.1850	0.5496
Isolated Rural	0.0204	0.1439	-0.2615	0.3024	0.8872
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.7696	0.0635	0.6547	0.9047	**0.0015**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9908	0.1451	0.7436	1.3203	0.9498

*Bold indicates significant (p<0.05)

6.1.4 Service Utilization

Service Utilization Key Findings

Emergency Department Utilization

- During the Demonstration periods, both populations (behavioral health and non-behavioral health) were significantly less likely to have frequent visits to the ED for non-mental health/chemical dependency services;
- Beneficiaries in the unmatched behavioral health sample (i.e., those with the most risk) were significantly less likely to frequent the ED for non-mental health/chemical dependency services during the Demonstration periods;
- During the Demonstration periods, both the behavioral health and non-behavioral health populations were significantly less likely to have potentially preventable ED visits; however, the behavioral health population had a greater downward trend; and
- The unmatched behavioral health sample was significantly less likely to have potentially preventable ED visits during the Demonstration periods

Hospital Admissions

- During the Demonstration period, the population with behavioral health disorders was significantly more likely to have overall, acute, and chronic ACS hospital admissions compared to the pre-Demonstration period;
- The unmatched behavioral health sample was significantly less likely to have overall, acute, and chronic ACS admissions during the Demonstration periods (except for the chronic composite during the Demonstration period); however, for the matched sample, there was no significant change; and
- Length of stay for inpatient psychiatric care significantly increased in the Demonstration periods.

Hospital Readmissions

- The behavioral health population did not show a significant change between the pre- and Demonstration periods for the hospital readmissions measures.
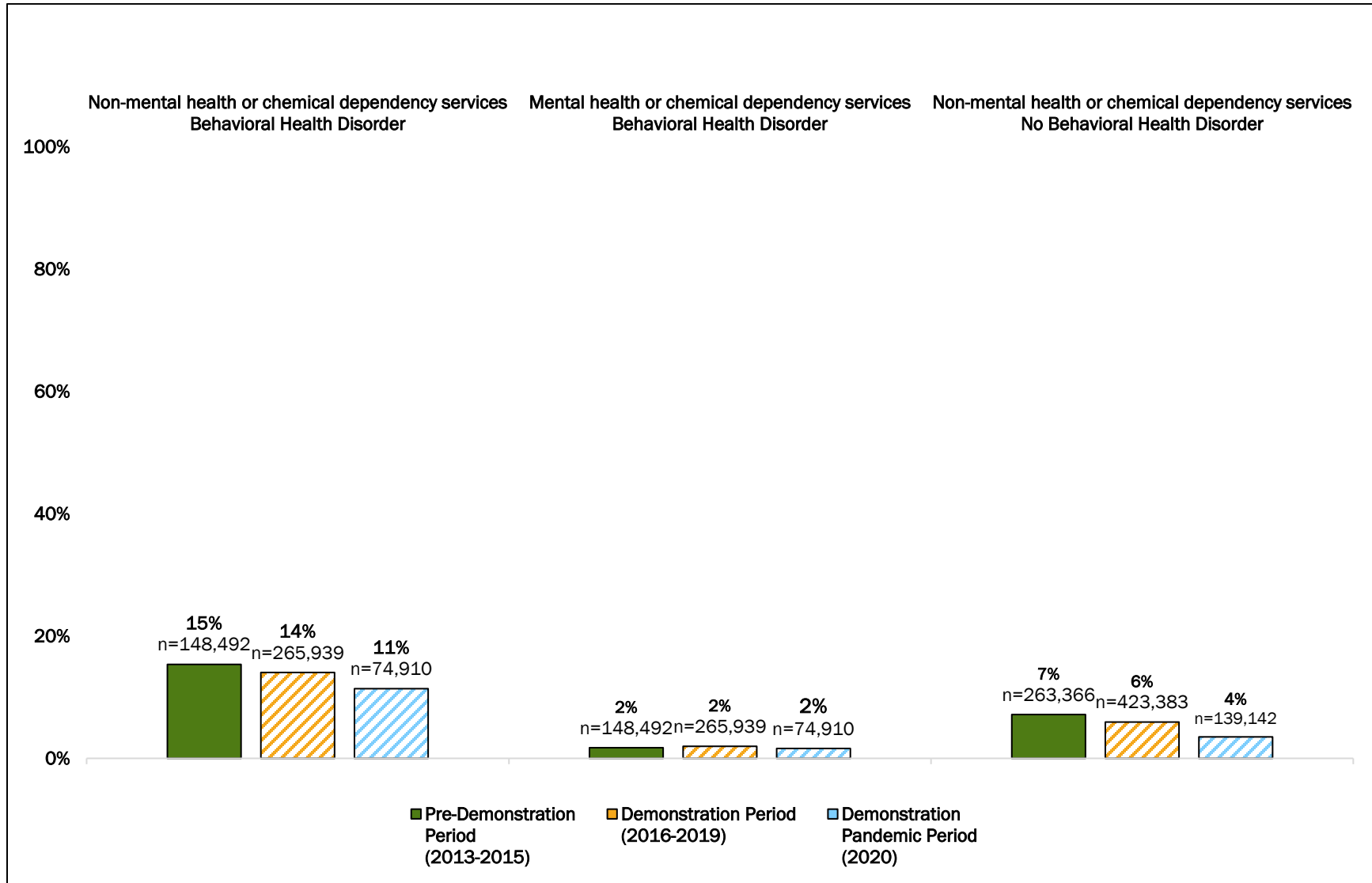
6.1.4.1 Emergency Department (ED) Visits

It is hypothesized that the DSRIP Demonstration would improve access to and continuity of primary and behavioral health care for Beneficiaries and result in a reduction of ED use.

The prevalence of frequent ED use for Beneficiaries with a behavioral health disorder varied from 15% in the pre-Demonstration period to 14% in the Demonstration period. The prevalence of frequent ED use for Beneficiaries without behavioral health disorders declined over the study period from 7% in pre-Demonstration to 6% in the Demonstration. Non-mental health or chemical dependency ED visits further declined during the Demonstration Pandemic period. Both the post and pandemic Demonstration periods were significantly lower than the pre-Demonstration period for all categories. Compared to the pre-Demonstration period:

- ✦ Beneficiaries with behavioral health disorders were less likely to have frequent non-mental health ED visits in the Demonstration period (14% vs 15%) and in the Demonstration Pandemic period (11% vs 15%);
- ✦ Beneficiaries without a behavioral health disorder were also less likely to have non-mental health ED visits in both post periods (6% vs 7%, Demonstration and 4% vs 7% pandemic); and
- ✦ Beneficiaries with a behavioral health disorder were more likely to have a mental health or chemical dependency ED visit in the Demonstration period and less likely in the Demonstration Pandemic period.

As shown in Figure 6.1—56, less than 3% of Beneficiaries with a behavioral health disorder had frequent mental health or chemical dependency ED visits over the study period. ED visits with a primary diagnosis of mental health or chemical dependency were included in this measure. Compared to the non-behavioral health group, Beneficiaries with a behavioral health disorder were more than twice as likely to have frequent ED visits for non-mental health or chemical dependency services in all three study periods.

Figure 6.1—56. Prevalence of Frequent (4 or more) Outpatient Emergency Department Visits Over time – Unadjusted Bivariate Analysis

Non-mentalhealth or chemical dependency services Behavioral Health Disorder   Mental health or chemical dependency services Behavioral Health Disorder   Non-mental health or chemical dependency services No Behavioral Health Disorder

15% n=148,492   14% n=265,939   11% n=74,910

2% n=148,492   2% n=265,939   2% n=74,910

7% n=263,366   6% n=423,383   4% n=139,142

- Pre-Demonstration Period (2013-2015)
- Demonstration Period (2016-2019)
- Demonstration Pandemic Period (2020)

*Pattern within a column indicates significant change from Pre-Demonstration period

Similar to the results for all Beneficiaries, the odds of having four or more ED visits significantly decreased for the matched sample of Beneficiaries with and without behavioral health disorders in the post periods. Compared to the matched non-behavioral health disorder group with similar characteristics (Table 6.1-65). Beneficiaries with behavioral health disorders were:

 ⬥ **12% more likely** to have frequent ED visits prior to the Demonstration (2013-2015);
 ⬥ **14% more likely** to have frequent ED visits post implementation of the Demonstration (2016-2019); and
 ⬥ **8% more likely** to have frequent ED visits during the Demonstration Pandemic period (2020).

Frequent ED visits decreased between the pre-Demonstration and the post periods for both those with and without behavioral health disorders. The rate of change between the behavioral health sample and the non-behavioral health sample was not significant.

Table 6.1-65. Generalized Linear Model Estimating Frequent ED visits for non-Mental Health or Chemical Dependency Services – Propensity Matched Sample

Propensity Matched Sample (N= 817,070)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.1162	0.0148	1.0876	1.1456	**<.0001**
Demonstration Period (BH to Non-BH)	1.1377	0.0129	1.1127	1.1633	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.0843	0.0244	1.0375	1.1331	**0.0003**
Change Pre-Demonstration/ Demonstration Period BH sample	0.7931	0.0090	0.7757	0.8110	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.5682	0.0102	0.5487	0.5885	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.7782	0.0092	0.7604	0.7964	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.5850	0.0108	0.5641	0.6066	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	1.0192	0.0166	0.9872	1.0522	0.2417
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.9713	0.0249	0.9238	1.0214	0.2565

*Bold indicates significant (p<0.05)

For Beneficiaries with behavioral health disorders for whom a propensity match was not found, the odds of 4 or more frequent ED visits significantly declined between the pre and

post periods after controlling for Beneficiary characteristics of interest (Table 6.1-66). For the Unmatched Behavioral Health Group:

- ◆ The decline between the pre-Demonstration and post periods was significant (Demonstration: 16%; Demonstration pandemic: 31%);
- ◆ Frequent ED visits were higher for the expansion population but lower for the dually eligible Beneficiaries;
- ◆ Greater ED visits were associated with being female and having higher ACG risk score; and
- ◆ Fewer ED visits were associated with Beneficiaries who were older and residing in rural locations

Table 6.1-66. Generalized Linear Model Estimating Frequent ED visits for non-Mental Health or Chemical Dependency Services – Unmatched Behavioral Health Sample

| Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	0.0603	0.0315	-0.0015	0.1221	0.0558
Demonstration Period	-0.1784	0.0186	-0.2148	-0.1420	**<.0001**
Demonstration Pandemic Period	-0.3687	0.0256	-0.4188	-0.3185	**<.0001**
Age	-0.0244	0.0006	-0.0256	-0.0232	**<.0001**
Female	0.2043	0.0185	0.1681	0.2405	**<.0001**
Dual Eligible	-0.6007	0.0261	-0.6519	-0.5495	**<.0001**
Expansion Population	0.1373	0.0190	0.1000	0.1745	**<.0001**
ACG Risk Score	0.0919	0.0016	0.0888	0.0950	**<.0001**
Large Rural	-0.0994	0.0240	-0.1464	-0.0523	**<.0001**
Small Rural	-0.1688	0.0276	-0.2229	-0.1146	**<.0001**
Isolated Rural	-0.3907	0.0344	-0.4582	-0.3232	**<.0001**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8366	0.0155	0.8067	0.8676	**<.0001**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.6917	0.0177	0.6578	0.7272	**<.0001**

*Bold indicates significant (p<0.05)

Among Beneficiaries in three of the four chronic conditions' subpopulations there were fewer frequent outpatient emergency department visits for non-mental health or chemical dependency services over the course of the study periods (Figure 6.1—57). The asthma subpopulation did not experience a decline in frequent outpatient ED visits. Compared to the pre-Demonstration period:

- Beneficiaries with COPD and behavioral health disorders were significantly less likely to have frequent ED visits during the Demonstration and Demonstration Pandemic periods;
- Frequent visits for the CVD subpopulation was significantly less likely during the Demonstration pandemic period;
- Beneficiaries with diabetes and behavioral health disorders were less likely to have frequent ED visits during the Demonstration and pandemic periods;
- Beneficiaries without behavioral health disorders and COPD, CVD, or diabetes were significantly less likely to have frequent ED visits in the pandemic period than in the pre-Demonstration period; and
- None of the chronic conditions' subpopulations with no behavioral health disorders experienced a change in the odds of frequent ED use between the pre-Demonstration and Demonstration periods (Figure 6.1—57).

Compared to the non-Behavioral Health group:

- In every study period and chronic conditions; subpopulation, without controlling for covariates, Beneficiaries with a behavioral health disorder had greater odds of frequent ED use for non-mental health or chemical dependency services (Figure 6.1—58).

Figure 6.1—57. Prevalence of Frequent (4 or more) Outpatient Emergency Department Visits for non-Mental Health or Chemical Dependency Services by Chronic Conditions Behavioral Health Population (Unadjusted)
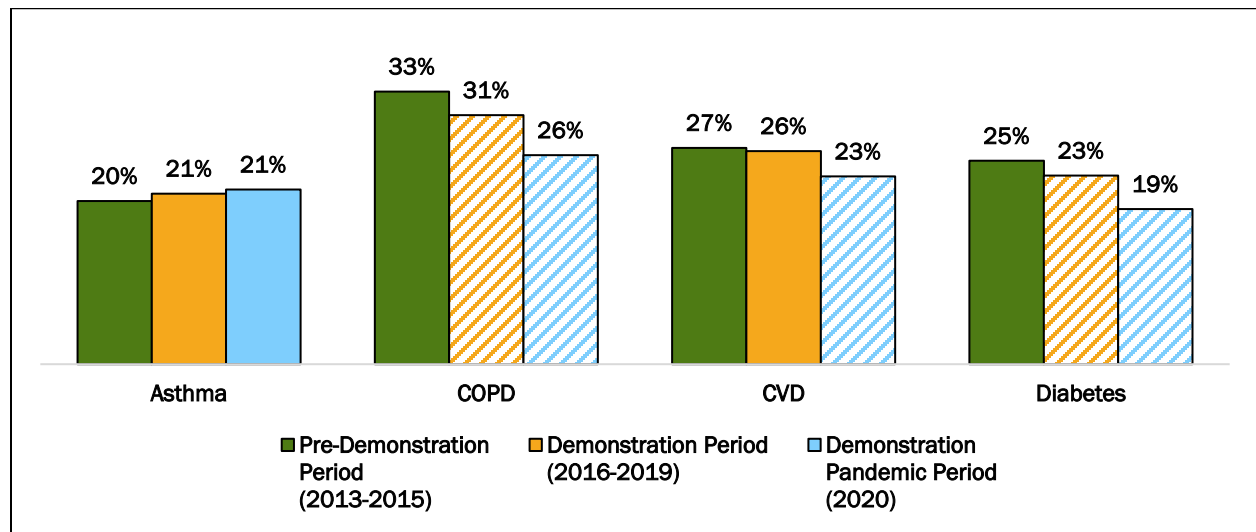
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—58. Prevalence of Frequent (4 or more) Outpatient Emergency Department Visits for non-Mental Health or Chemical Dependency Services by Chronic Conditions – Non-Behavioral Health Population (Unadjusted)
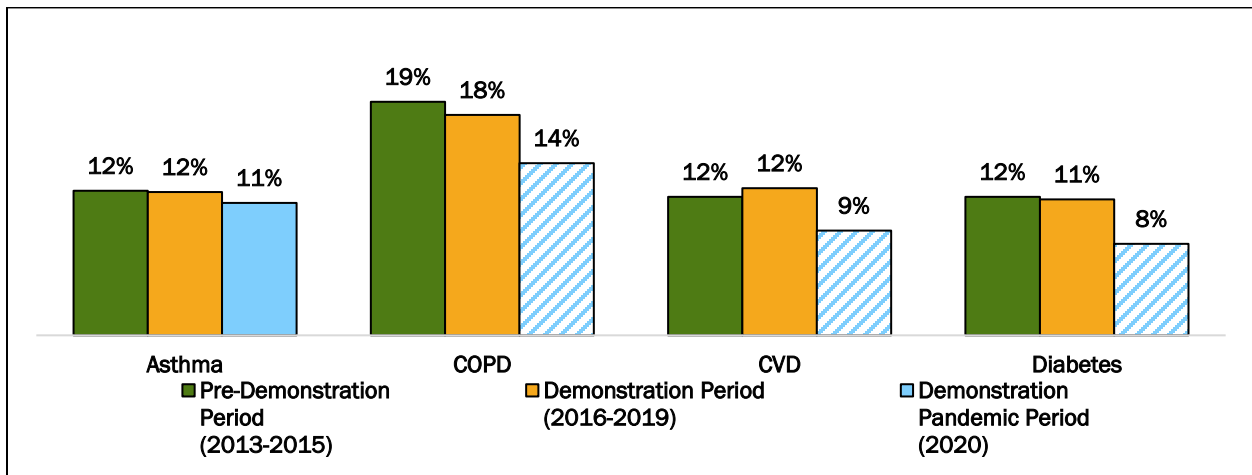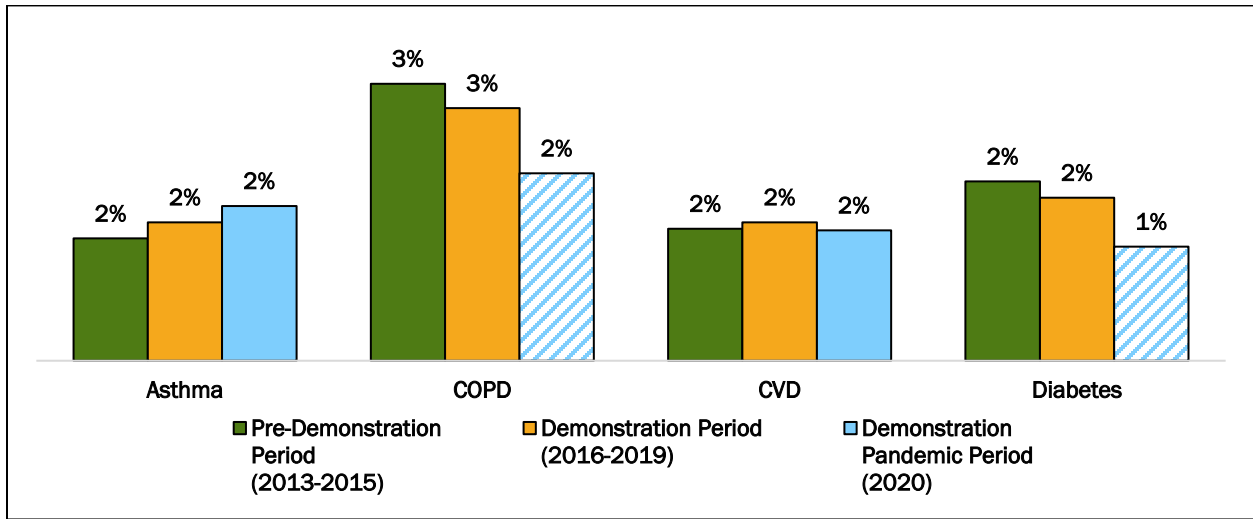

*Pattern within a column indicates significant change from Pre-Demonstration period

Beneficiaries with behavioral health disorders and chronic conditions' subpopulations that frequent outpatient emergency department visits for mental health or chemical dependency services were relatively consistent over the course of the study periods (Figure 6.1—59). Although these variations are small compared to the pre-Demonstration period:

- Beneficiaries with COPD were less likely to have frequent ED visits for mental health or chemical dependency services during the pandemic period compared to the pre-Demonstration period; and
- The percent of Beneficiaries with diabetes that had frequent ED visits for mental health or chemical dependency services declined between the pre-Demonstration and Demonstration periods and between the pre-Demonstration and pandemic periods

Figure 6.1—59. Prevalence of Frequent (4 or more) Outpatient Emergency Department Visits for Mental Health or Chemical Dependency Services by Chronic Conditions Behavioral Health Population

*Pattern within a column indicates significant change from Pre-Demonstration period

When comparing Beneficiaries with a behavioral health disorder to a group of Beneficiaries without behavioral health disorder with similar characteristics, individuals with a behavioral health disorder were more likely to have frequent ED visits than those without behavioral health disorder in the Demonstration periods (Table 6.1-67). Compared to the non-behavioral health disorder group:

⬥ **Beneficiaries with** a behavioral health disorder and COPD, CVD, or diabetes were **1.5 to 1.9 times more likely** to have frequent ED visits in the pre-Demonstration period (2013-2015) and **1.3 to 1.6 times more likely** to have frequent ED visits post implementation of the Demonstration (2016-2019) and **1.3 to 1.7 times more likely** to have frequent ED visits during the Demonstration Pandemic period (2020); and
⬥ Beneficiaries with asthma and a behavioral health disorder were **27% less likely** to have frequent ED visits during the Demonstration Pandemic period. The differences in the pre-Demonstration and Demonstration periods were not significant

Compared to the pre-Demonstration period:
⬥ Beneficiaries with a behavioral health disorder and COPD or diabetes were **significantly less likely** in the Demonstration period to have frequent ED visits for non-mental health or chemical dependency services.
⬥ Beneficiaries with a behavioral health disorder and asthma, COPD, CVD, or diabetes **were significantly less likely** in the Demonstration Pandemic period to have frequent ED visits.
⬥ Beneficiaries without a behavioral health disorder and asthma were **less likely** to have frequent ED visits in the Demonstration period while those with CVD were **12% more likely** to have frequent ED visits.
⬥ Beneficiaries without a behavioral health disorder and COPD, CVD, or diabetes were **less likely** in the pandemic to have frequent ED visits for non-mental health or chemical dependency services.

The rate of decline between the pre-Demonstration period and Demonstration period for Beneficiaries in the behavioral health sample with COPD, CVD, or diabetes was significantly greater than the decline in the non-behavioral health sample with the same conditions. The diabetes sample with a behavioral health disorder also experienced a greater decline in the likelihood of frequent ED visits between the pre and pandemic periods.

Table 6.1-67. Generalized Linear Models Estimating Frequent ED Visits non-Mental Health or Chemical Dependency Services – Subpopulation Propensity Matched Sample

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value
Pre-Demonstration Period (BH to Non-BH)	0.8783	0.0848	1.5026	<.0001	1.8889	<.0001	1.6192	<.0001
Demonstration Period (BH to Non-BH)	0.9491	0.3897	1.3127	<.0001	1.6016	<.0001	1.2800	<.0001

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value
Demonstration Pandemic Period (BH to Non-BH)	0.7302	**0.0046**	1.2731	**0.0035**	1.6942	**<.0001**	1.2921	**0.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	0.9394	0.3022	0.8420	**<.0001**	0.9505	0.3026	0.8266	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.7844	**0.0038**	0.6511	**<.0001**	0.7416	**<.0001**	0.6178	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.8693	**0.0497**	0.9637	0.4603	1.1209	**0.0274**	1.0456	0.2600
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.9435	0.5753	0.7684	**0.0004**	0.8268	**0.0193**	0.7742	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	1.0806	0.4021	0.8736	**0.0344**	0.8479	**0.0204**	0.7905	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.8314	0.1630	0.8473	0.0853	0.8970	0.3249	0.7980	**0.0043**

*Bold indicates significant (p<0.05)

When controlling for Beneficiary characteristics of interest, there was significant change in frequent ED visits for non-mental health or chemical dependency services over time (Table 6.1-68). For Beneficiaries with behavioral health disorders:

- There was a significant decline between the pre-Demonstration and Demonstration for Beneficiaries with asthma, COPD, and CVD.
- There was a significant decline between the pre-Demonstration and Demonstration Pandemic period among all subpopulations.
- Frequent ED visits were higher for the expansion population among the asthma subpopulation, but lower among the COPD subpopulation.
- Frequent ED visits were lower for the dual eligible Beneficiaries (COPD, CVD, diabetes).

◆ A greater number of ED visits were associated with female Beneficiaries and having a higher ACG risk score.

◆ Fewer ED visits were associated with Beneficiaries who were older in all of the subpopulations.

◆ Fewer ED visits were associated with Beneficiaries who resided in rural areas (COPD, CVD, diabetes).

Table 6.1-68. Generalized Linear Models Estimating Frequent ED Visits non-Mental Health or Chemical Dependency Services - Behavioral Health Subpopulations

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	0.0.747	0.6699	0.9770	<.0001	0.5762	<.0001	0.4567	0.0085
Demonstration Period	-0.2138	**0.0454**	-0.1177	**0.0142**	-0.1369	**0.0014**	-0.1159	0.0672
Demonstration Pandemic Period	-0.2952	**0.0241**	-0.3729	**<.0001**	-0.3650	**<.0001**	-0.3894	**<.0001**
Age	-0.0335	**<.0001**	-0.0311	**<.0001**	-0.0287	**<.0001**	-0.0259	**<.0001**
Female	0.5760	**<.0001**	0.1049	**0.0397**	0.2275	**<.0001**	0.2281	**0.0003**
Dual Eligible	-0.3618	0.1173	-0.5593	**<.0001**	-0.5432	**<.0001**	-0.4887	**<.0001**
Expansion Population	0.2488	**0.0068**	-0.1241	**0.0323**	0.0179	0.7327	-0.0763	0.3232
ACG Risk Score	0.1387	**<.0001**	0.0767	**<.0001**	0.0740	**<.0001**	0.0760	**<.0001**
Large Rural	-0.1180	0.3226	-0.2403	**0.0004**	-0.2168	**0.0007**	-0.1551	0.0858
Small Rural	-0.0825	0.5665	-0.4003	**<.0001**	-0.3923	**<.0001**	-0.3594	**0.0002**
Isolated Rural	-0.2612	0.1510	-0.6301	**<.0001**	-0.6456	**<.0001**	-0.5924	**<.0001**
	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value	Estimate (Odds Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	0.8075	**0.0454**	0.8889	**0.0142**	0.8721	**0.0014**	0.8906	0.0672
BH Demonstration Pandemic vs Pre-Demonstration Period	0.7444	**0.0241**	0.6887	**<.0001**	0.6942	**<.0001**	0.6774	**<.0001**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—60, the unadjusted percentage of Beneficiaries with behavioral health disorders that had frequent ED visits declined from the pre-Demonstration period. In the pre period, the percent of beneficiaries visiting the ED frequently ranged from 13% to 17%. This decreased to a range of 12% to 17% in the Demonstration period and to 9% to 14% in the Demonstration pandemic period.

Figure 6.1—60. Prevalence of Frequent (4 or more) Outpatient Emergency Department Visits for non-Mental Health or Chemical Dependency Services by IDN – Behavioral Health Population
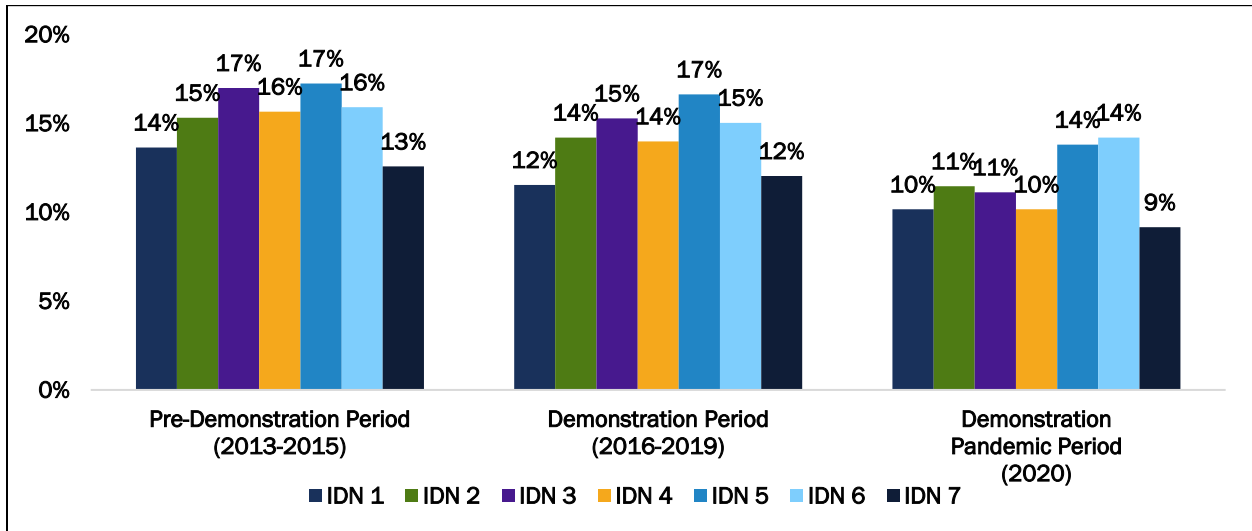
Significant difference in frequent ED visits over time where observed (Table 6.1-69). When compared to IDN 2:

- In the pre-Demonstration period, Beneficiaries in IDN 1 and IDN 7 were significantly less likely to have frequent ED visits;
- In the pre-Demonstration period, Beneficiaries in IDN 3 and IDN 5 were significantly more likely to have frequent ED visits;
- In the Demonstration Beneficiaries in IDN1, IDN4 and IDN 7 were significantly less likely to have frequent ED visits, while IDN 3, IDN 5 and IDN 6 were more likely to have frequent ED visits; and
- In the Demonstration pandemic period IDN 1, IDN 4 and IDN 7 were significantly less likely to have frequent ED visits among the behavioral health population while IDN 5 and 6 were more likely to have frequent ED visits.

Table 6.1-69. Generalized Linear Models Estimating Rate of Change of Frequent ED Visits Relative to IDN 2 - Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase/ Decrease	IDN	Increase/ Decrease	IDN	Increase/ Decrease
Frequent ED Visits non-Mental Health or Chemical Dependency Services (Behavioral Health)	IDN 1	▼	IDN 1	▼	IDN 1	▼
	IDN 3	▲	IDN 3	▲	IDN 4	▼
	IDN 5	▲	IDN 4	▼	IDN 5	▲
	IDN 7	▼	IDN 5	▲	IDN 6	▲
			IDN 6	▲	IDN 7	▼
			IDN 7	▼		

After controlling for Beneficiary characteristics of interest results showed significant differences over time (Figure 6.1—69). Beneficiaries in IDN 2 were 19% less likely to have frequent ED visits in the Demonstration period compared to the pre-Demonstration period and 44% less likely in the pandemic period. Compared to IDN 2:

◆ The rate of decline for non-mental health or chemical dependency ED visits between the pre and Demonstration periods was larger for Beneficiaries in IDN 1;
◆ IDN 3 experienced a significantly greater rate of decline between the pre-Demonstration and Demonstration Pandemic periods for non-mental health or chemical dependency ED visits; and
◆ The rate of decline for non-mental health or chemical dependency ED visits between the pre and pandemic periods was larger for Beneficiaries in IDN 6 (Table 6.1-70).

Figure 6.1—61. Results of Generalized Linear Model Estimating Rate of Change of Frequent ED visits for Non-mental Health or Chemical Dependency Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
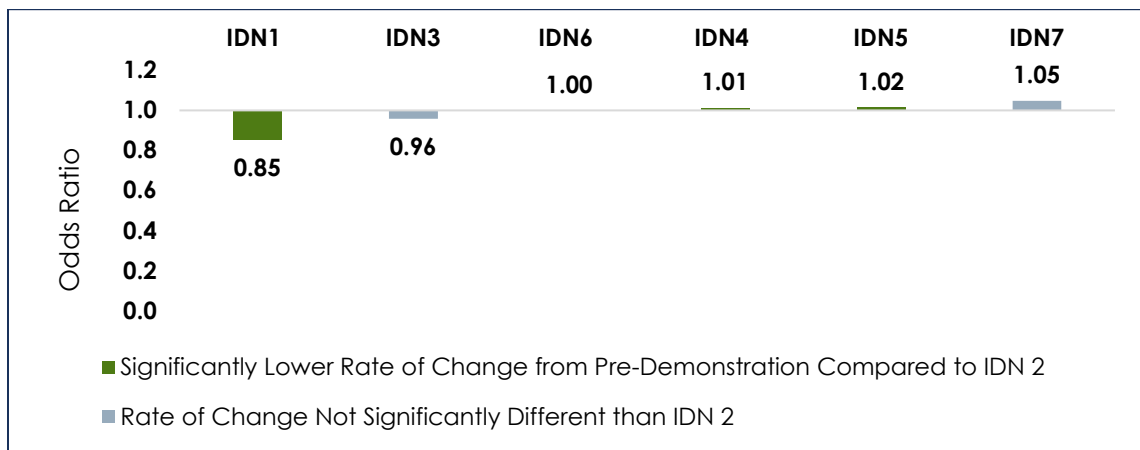

Figure 6.1—62. Results of Generalized Linear Model Estimating Rate of Change of Frequent ED visits for Non-mental Health or Chemical Dependency Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
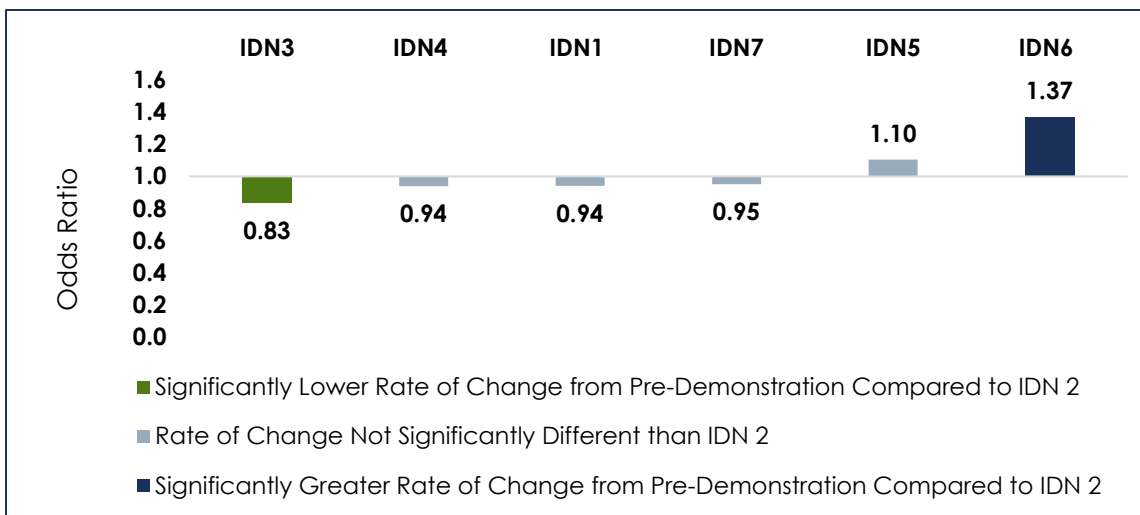
Table 6.1-70. Generalized Linear Model Estimating Frequent ED visits for non-Mental Health or Chemical Dependency Services – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.8128	<.0001	0.5611	**<.0001**
Time Interaction				
IDN 1	0.8523	**<.0001**	0.9413	0.3251
IDN 3	0.9589	0.2753	0.8333	**0.0028**
IDN 4	1.0126	0.7200	0.9389	0.2502
IDN 5	1.0159	0.7014	1.1047	0.1161
IDN 6	1.0008	0.9827	1.3706	**<.0001**
IDN 7	1.0472	0.3061	0.9522	0.4915

*Bold indicates significant (p<0.05)

6.1.4.2 Potentially Preventable ED Visits

Potentially preventable[21] or ambulatory care sensitive conditions are a set of acute and chronic medical conditions for which early and effective management in the primary care setting may prevent an ED visit.[72,73] The NH DSRIP Demonstration is hypothesized to decrease preventable ED visits to assure better access to primary care and as a potential means of cost containment.

The rate of potentially preventable ED visits per 1,000 member months (MM) declined over the study period (Figure 6.1—63). Rates for Beneficiaries with behavioral health disorders declined from approximately 39.4 per 1,000 MM to 33.8 per 1,000 MM over the study period. Beneficiaries without behavioral health disorders with ED visits that could have potentially been treated in a primary care setting declined from 19.3 per 1,000 MM to 15.6 per 1,000 MM between the pre-Demonstration and Demonstration periods. Further decline occurred in the Demonstration Pandemic period. These declines in both post-and pandemic Demonstration periods were statistically significant. Compared to the pre-Demonstration period:

- ✦ The rate of potentially preventable emergency department visits declined from 39.4 per thousand to 33.8 per thousand in Demonstration periods and to 26.5 per thousand in the Demonstration Pandemic period for Beneficiaries with a behavioral health disorder; and
- ✦ The rate of potentially preventable emergency room visits for the Medicaid population without a behavioral health disorder also declined. In the pre-Demonstration, the rate was 19,3 per thousand and declined to 15.6 per thousand in the post period and to 8.6 per thousand in the Demonstration pandemic

Compared to the non-Behavioral Health group:

- ✦ Beneficiaries with a behavioral health disorder had higher rates of potentially preventable emergency room visits in every study period.

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[21] Version 2.0, NH DHHS 9/27/16. Based on John Billings of NYU's algorithm (http://wagner.nyu.edu/faculty/billings/nyued-background) and analysis of NH data

Figure 6.1—63. Rate (per 1,000) Member Months of Potentially Preventable Outpatient Emergency Department Visits over Time
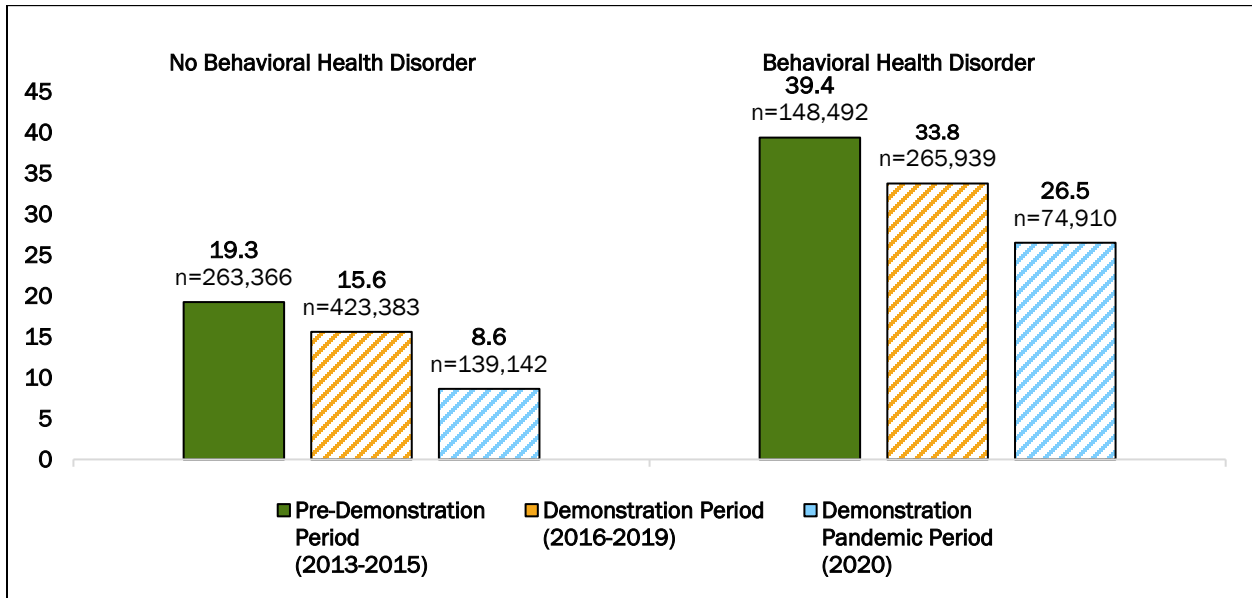
*Pattern within a column indicates significant change from Pre-Demonstration period

When examining rates of visits in Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders, there were variations over time and between populations. Both populations experienced a significant decline in visits (p<.0001). Compared to the non-behavioral health disorder group (Table 6.1-71), Beneficiaries with behavioral health disorders were:

- **10% more likely** to have potentially preventable visits prior to the Demonstration (2013-2015);
- **10% more likely** to have potentially preventable visits post implementation of the Demonstration (2016-2019); and
- **12% more likely** to have potentially preventable visits during the Demonstration Pandemic period (2020).

In addition, there was a decreased rate of potentially preventable emergency room visits in the Demonstration and Demonstration Pandemic periods compared to the pre-Demonstration period for both the behavioral health sample and the non-behavioral health sample. However, the rate of decline was not significantly different between the two groups (Table 6.1-71).

Table 6.1-71. Generalized Linear Models Estimating Potentially Preventable Outpatient Emergency Department Visits

Propensity Matched Sample (N=817,070)					
Parameter	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.1019	0.0321	1.0764	1.1280	**<.0001**
Demonstration Period (BH to Non-BH)	1.1026	0.0109	1.0814	1.1242	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.1219	0.0199	1.0790	1.1665	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	0.7860	0.0223	0.7698	0.8025	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.5725	0.0084	0.5530	0.5928	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.7855	0.0102	0.7714	0.7998	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.5623	0.0082	0.5466	0.5785	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	1.0006	0.0139	0.9737	1.0283	0.9638
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	1.0182	0.0231	0.9739	1.0645	0.4273

*Bold indicates significant (p<0.05)

Like the matched group of behavioral health Beneficiaries, when looking at Beneficiaries with behavioral health disorders only, there were also significant decreases in the rate of potentially preventable ED visits in the Demonstration and Demonstration Pandemic periods after controlling for Beneficiary characteristics of interest (Table 6.1-72). Among the behavioral health population:

- The decline between the pre-Demonstration and post periods was significant (Demonstration: 11%; Demonstration pandemic: 24%);
- Potentially preventable ED visits were lower for the dually eligible Beneficiaries;
- Higher potentially preventable ED visits were associated with being female and having higher ACG risk score; and
- Lower rates of potentially preventable ED visits were associated with Beneficiaries who were older and resided in rural areas

Table 6.1-72. Generalized Linear Models Estimating Potentially Preventable Outpatient Emergency Department Visits – Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-2.3554	0.0279	-2.4100	-2.3007	<.0001
Demonstration Period	-0.1113	0.0193	-0.1491	-0.0735	**<.0001**
Demonstration Pandemic Period	-0.2750	0.0261	-0.3262	-0.2238	**<.0001**
Age	-0.0130	0.0005	-0.0141	-0.0120	**<.0001**
Female	0.3262	0.0160	0.2947	0.3576	**<.0001**
Dual Eligible	-0.1486	0.0297	-0.2068	-0.0904	**<.0001**
Expansion Population	-0.0086	0.0199	-0.0476	0.0304	0.6651
ACG Risk Score	0.0463	0.0012	0.0439	0.0487	**<.0001**
Large Rural	-0.1479	0.0247	-0.1963	-0.0994	**<.0001**
Small Rural	-0.1446	0.0297	-0.2028	-0.0864	**<.0001**
Isolated Rural	-0.3259	0.0321	-0.3888	-0.2631	**<.0001**
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8947	0.0173	0.8615	0.9291	**<.0001**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.7596	0.0198	0.7217	0.7995	**<.0001**

*Bold indicates significant (p<0.05)

Examining rates of potentially preventable ED visits, in the absence of other factors, showed differences in rates over the course of the Demonstration. The asthma and COPD subpopulations with behavioral health disorders experienced a higher rate of potentially preventable outpatient emergency department visits in the Demonstration period while the population with diabetes had a lower rate (Figure 6.1—64). The rate of potentially preventable emergency department visits declined between the pre-Demonstration and Demonstration Pandemic periods for those with COPD, CVD, and diabetes (Figure 6.1—65). Compared to the pre-Demonstration period:

- ✦ There were more potentially preventable emergency department visits for the asthma and COPD Beneficiaries with behavioral health disorders during the Demonstration (asthma 72 vs 66 per thousand; COPD 108 vs 103 per thousand); and fewer visits for diabetes Beneficiaries with behavioral health disorders (67 vs 71 per thousand);
- ✦ There was a lower rate of potentially preventable visits in the pandemic period for Beneficiaries with behavioral health disorders and COPD (93 vs 103 per thousand), CVD (64 vs 72 per thousand), and diabetes (54 vs 71 per thousand);
- ✦ There was a higher rate of potentially preventable visits in the non-behavioral health group with COPD (65 vs 56 per thousand); and

⬥ There were fewer potentially preventable visits for the non-behavioral health population with asthma (33 vs 40 per thousand), CVD (24 vs 28 per thousand), and diabetes (20 vs 29 per thousand) during the Demonstration Pandemic period.
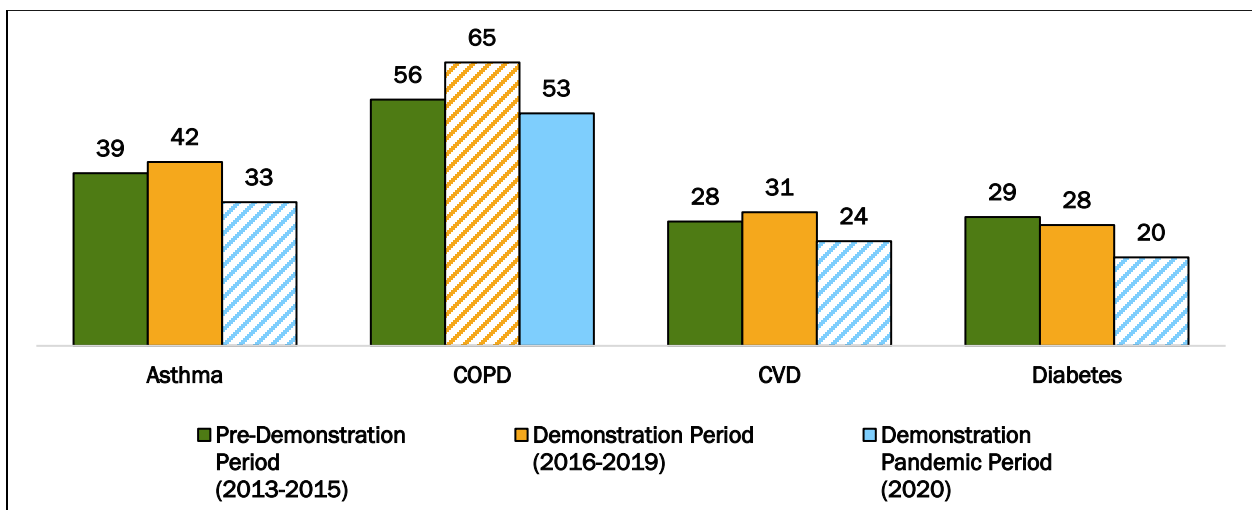
Compared to the non-Behavioral Health group:

⬥ The rate of potentially preventable emergency department visits for the behavioral health population with asthma, COPD, CVD, and diabetes was higher in all study periods than the non-behavioral health population with the same chronic conditions.

Figure 6.1—64. Rate (per 1,000) Member Months of Potentially Preventable Outpatient Emergency Department Visits by Chronic Conditions – Behavioral Health Population
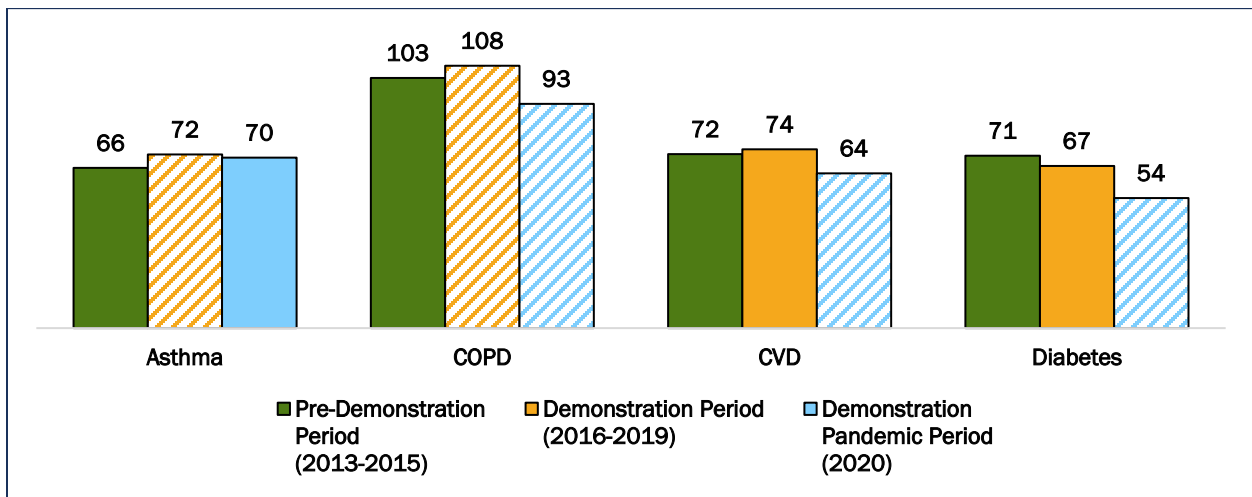
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—65. Rate (per 1,000) Member Months of Potentially Preventable Outpatient Emergency Department Visits by Chronic Conditions – Non-Behavioral Health Population

*Pattern within a column indicates significant change from Pre-Demonstration period

When examining rates of visits in Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders, Beneficiaries with COPD, CVD, diabetes and a behavioral health disorder were significantly more likely to have potentially preventable visits than Beneficiaries without a behavioral health disorder in the pre-Demonstration, Demonstration and Demonstration Pandemic periods (Table 6.1-73). Compared to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders were:

- **1.4 to 1.8 times more likely** to have potentially preventable visits prior to the Demonstration (2013-2015) among the COPD, CVD, and diabetes subpopulations.
- **1.2 to 1.6 times more likely** to have potentially preventable visits post implementation of the Demonstration (2016-2019) among the COPD, CVD, and diabetes subpopulations.
- **1.2 to 1.6 times more likely** to have potentially preventable visits during the Pandemic period (2020) among the COPD, CVD, and diabetes subpopulations.
- Among the asthma subpopulation there were no significant differences in the rate of potentially preventable visits in the pre, post, or pandemic periods.

The diabetes population with behavioral health disorders experienced a decline in the rate of potentially preventable emergency room visits between the pre and post periods, while the non-behavioral health population with COPD and CVD experienced an increase in the rate of potentially preventable emergency room visits between the two study periods. The rate of increase for the behavioral health population was significantly smaller than the rate for the non-behavioral health group in the COPD population. For the diabetes group, the difference between the increase for the non-behavioral health population and the decrease for the behavioral health population was significant. Likewise, the difference in the rate of change between the increase in the non-behavioral health CVD sample and the slight decrease in the behavioral health CVD sample was significant. All chronic conditions' populations in the behavioral health sample saw a decline in the rate of visits between the pre-Demonstration and Demonstration Pandemic periods; those with no behavioral health conditions and asthma or diabetes also experienced a decline between the pre-Demonstration and Demonstration Pandemic periods.

Table 6.1-73. Generalized Linear Models Estimating Potentially Preventable Outpatient Emergency Department Visits – Chronic Condition Subpopulation Propensity Matched Sample

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
Pre-Demonstration Period (BH to Non-BH)	0.9499	0.3640	1.3921	<.0001	1.8093	<.0001	1.5812	**<.0001**
Demonstration Period (BH to Non-BH)	0.9347	0.1233	1.2161	<.0001	1.5696	<.0001	1.3801	**<.0001**
Demonstration	0.9136	0.3023	1.1772	0.0057	1.5920	<.0001	1.3358	**<.0001**

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
Pandemic Period (BH to Non-BH)								
Change Pre-Demonstration/ Demonstration Period BH sample	0.9154	0.0646	1.0264	0.4984	0.9654	0.4997	0.8893	**0.0013**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.7751	0.0007	0.8791	0.0158	0.8337	0.0137	0.7032	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.9303	0.1244	1.1750	<.0001	1.1128	0.0159	1.0189	0.5730
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.8060	0.0020	1.0396	0.4377	0.9475	0.4234	0.8324	**0.0002**
BH vs. Non-BH Time Interaction (Demonstration Period)	0.9840	0.8039	0.8735	0.0094	0.8676	0.0335	0.8728	**0.0047**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.9617	0.7029	0.8456	0.0208	0.8799	0.1969	0.8448	**0.0154**

*Bold indicates significant (p<0.05)

There was significant change in potentially preventable ED visits over time when controlling for Beneficiary characteristics of interest when looking at Beneficiaries with behavioral health conditions and chronic conditions alone (Table 6.1-74). Among Beneficiaries with behavioral health conditions and chronic conditions:

◆ There were significantly more potentially preventable visits between the pre-Demonstration and Demonstration among the COPD subpopulation.
◆ There were significantly fewer potentially preventable ED visits between the pre-Demonstration and Demonstration Pandemic period among the CVD and diabetes subpopulations.
◆ Potentially preventable ED visits were lower for the expansion population with COPD and CVD.

◆ Potentially preventable ED visits were lower for the dual eligible Beneficiaries among the COPD and CVD subpopulations.

◆ Higher potentially preventable visits were associated with being female and having higher ACG risk score for all chronic condition populations.

◆ Lower potentially preventable visits were associated with Beneficiaries who were older among all chronic condition categories.

◆ The COPD and CVD populations had a lower rate of potentially preventable ED visit if they resided in rural areas, while the rate for the diabetes population was significantly lower only for Beneficiaries living in isolated rural areas.

Table 6.1-74. Generalized Linear Models Estimating Potentially Preventable Outpatient Emergency Department Visits – Behavioral Health Subpopulations

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	-1.7435	<.0001	-1.4705	<.0001	-1.8022	<.0001	-1.6555	<.0001
Demonstration Period	-0.0141	0.9064	0.1561	0.0001	0.0106	0.8023	0.0271	0.6866
Demonstration Pandemic Period	-0.1994	0.1440	0.0314	0.5877	-0.1675	0.0046	-0.2003	**0.0300**
Age	-0.0212	<.0001	-0.0204	<.0001	-0.0203	<.0001	-0.0216	**<.0001**
Female	0.3388	<.0001	0.2035	<.0001	0.3705	<.0001	0.3179	**<.0001**
Dual Eligible	0.1420	0.6679	-0.1260	0.0048	-0.1420	0.0078	-0.1054	0.1195
Expansion Population	0.2117	0.0147	-0.1900	0.0001	-0.1460	0.0025	-0.1274	0.0989
ACG Risk Score	0.0326	<.0001	0.0400	<.0001	0.0423	<.0001	0.0398	**<.0001**
Large Rural	0.0149	0.9215	-0.2606	<.0001	-0.2097	0.0009	-0.1451	0.0836
Small Rural	0.4098	0.1180	-0.1681	0.0104	-0.1818	0.0111	-0.0336	0.7427
Isolated Rural	-0.0019	0.9928	-0.3607	<.0001	-0.4992	<.0001	-0.3250	**0.0018**
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	0.9860	0.9064	1.1689	0.0001	1.0106	0.8023	1.0274	0.6866
BH Demonstration Pandemic vs Pre-Demonstration Period	0.8192	0.1440	1.0319	0.5877	0.8458	0.0046	0.8185	**0.0300**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—66 below, the rate of potentially preventable emergency department visits generally declines between the study periods, but does vary by IDN. In the pre-Demonstration period, the visit rate rages from 28 per thousand to 46 per thousand. This range decreased in the Demonstration period to 26 per thousand to 40 per thousand and to a range of 21 per thousand to 32 per thousand in the Demonstration Pandemic period. IDN

5 was the only IDN to experience in increase in the rate of potentially preventable emergency department visits between the pre-Demonstration and Demonstration periods.

Figure 6.1—66. Rate of Potentially Preventable Emergency Department Visits by IDN - Behavioral Health Population
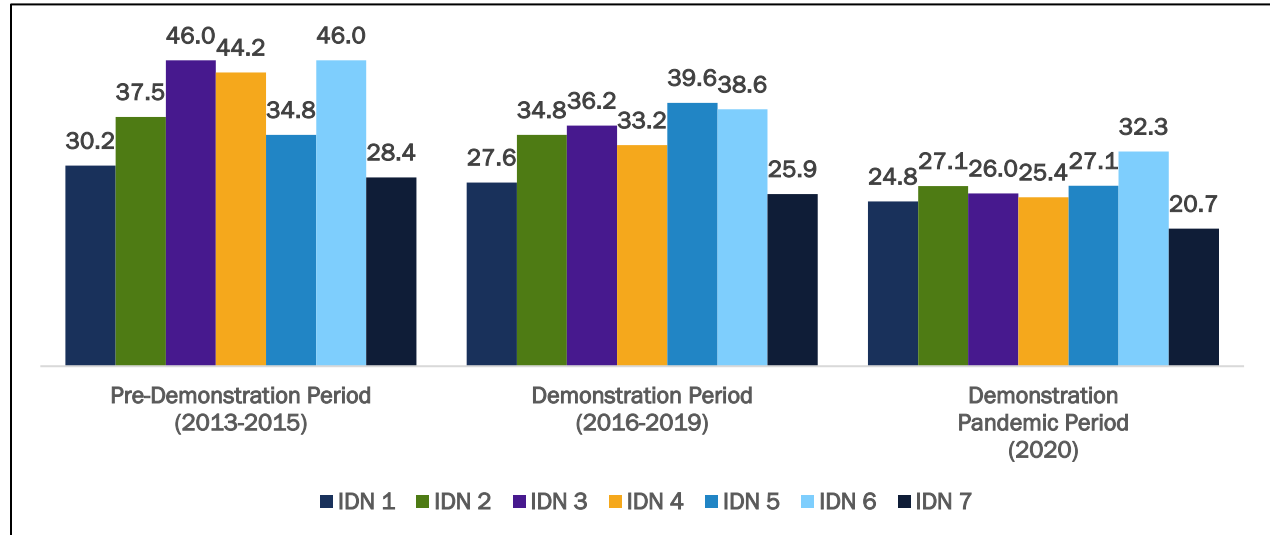
Without controlling for Beneficiary characteristics of interest, there were significant differences in rates of potentially avoidable ED visits compared to IDN 2 for some IDNs (Table 6.1-75). In the pre-Demonstration IDN 1, IDN 5, and IDN 7 experienced a significantly lower rate of potentially preventable emergency department visits, while IDN 3, IDN 4, and IDN 6 had a higher rate of visits. In the pandemic period, IDN 1 IDN 4 and IDN 7 had lower visit rates and IDN 6 had higher rates of potentially preventable ED visits.

Table 6.1-75. Rates of Potentially Preventable Emergency Department Visits with Significant Differences Relative to IDN 2 by Period - Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase/ Decrease	IDN	Increase/ Decrease	IDN	Increase/ Decrease
Potentially Preventable Outpatient Emergency Department Visits	IDN 1	▼	IDN 1	▼	IDN 1	▼
	IDN 3	▲	IDN 3	▲	IDN 4	▼
	IDN 4	▲	IDN 4	▼	IDN 6	▲
	IDN 5	▼	IDN 5	▲	IDN 7	▼
	IDN 6	▲	IDN 6	▲		
	IDN 7	▼	IDN 7	▼		

After controlling for age, gender, dual eligibility, whether Beneficiaries were enrolled in the expansion program, patient acuity (ACG risk score), and geographic location of the beneficiary, significant differences over time were found in rates of potentially preventable

ED visits by IDN over the course of the Demonstration among the behavioral health population (Table 6.1-76). Potentially preventable emergency department visits for Beneficiaries with behavioral health conditions in IDN 2 declined by 14% between the pre-Demonstration and Demonstration periods and by 36% between the pre- and Demonstration Pandemic periods. Compared to IDN 2:

- The rate of change in potentially preventable ED visits was significantly smaller for Beneficiaries in IDN 3, IDN 4, and IDN 6 between the pre-Demonstration and Demonstration periods.
- The difference in the rate of change between the pre-Demonstration and Demonstration periods for Beneficiaries in IDN 5 was significant.
- The rate of change was significantly smaller between the pre-Demonstration and Demonstration Pandemic periods for Beneficiaries in IDN 3 and IDN 4.

Figure 6.1—67. Results of Generalized Linear Model Estimating Rate of Change of Potentially Preventable Emergency Department Visits Relative to IDN 2
Behavioral Health Population (Demonstration Period)
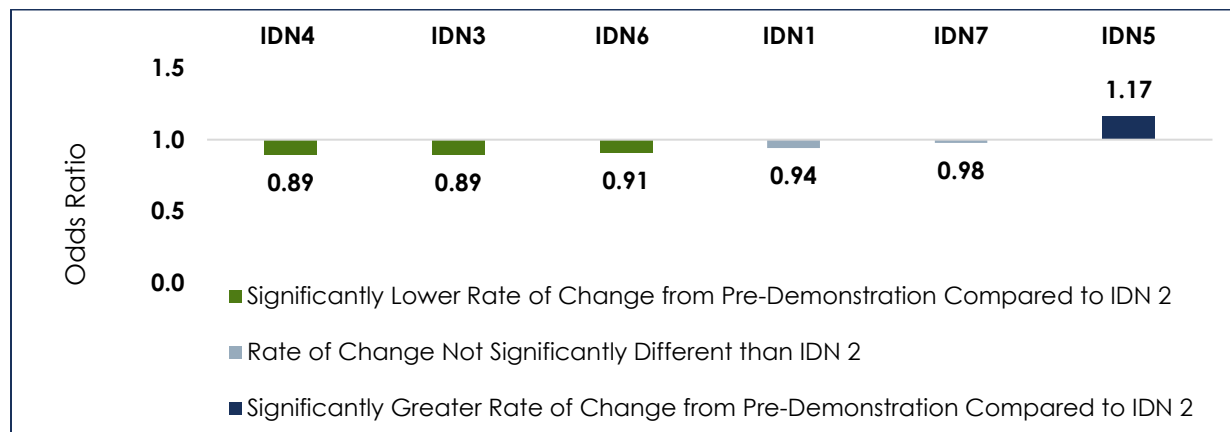
Figure 6.1—68.Results of Generalized Linear Model Estimating Rate of Change of Potentially Preventable Emergency Department Visits Relative to IDN 2
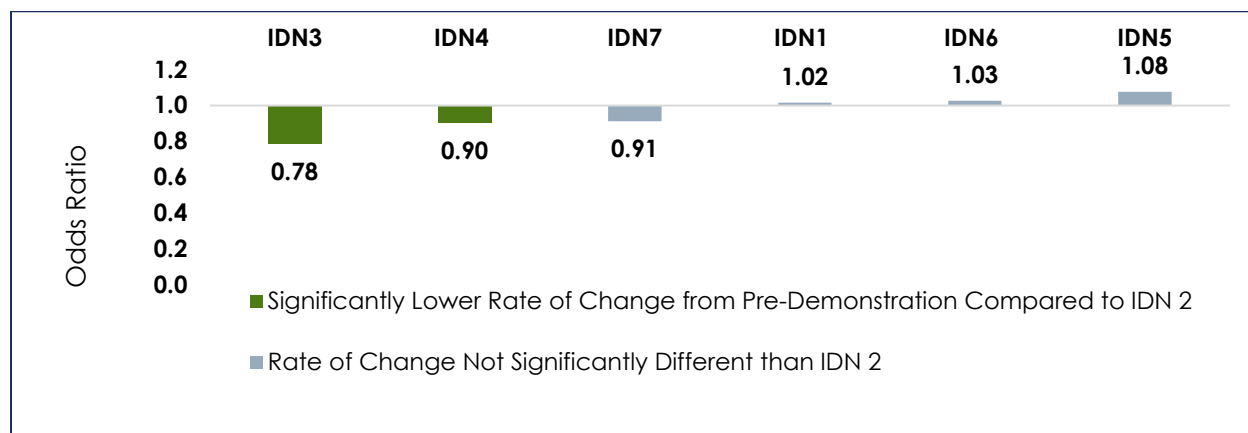*Behavioral Health Population (Demonstration Pandemic Period)*

Table 6.1-76. Generalized Linear Models Estimating Potentially Preventable Outpatient Emergency Department Visits – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.8624	<.0001	0.6418	**<.0001**
Time Interaction				
IDN 1	0.9414	0.0741	1.0154	0.7580
IDN 3	0.8924	**0.0013**	0.7848	**<.0001**
IDN 4	0.8910	**0.0002**	0.9015	**0.0232**
IDN 5	1.1662	**<.0001**	1.0765	0.1899
IDN 6	0.9083	**0.0026**	1.0264	0.5866
IDN 7	0.9781	0.5514	0.9125	0.1118

6.1.4.3 Hospital Readmission for Any Cause

Hospital readmissions have long been identified as an area of concern for the well-being of the patient and are potentially avoidable with good discharge planning and care coordination. Hospital readmissions can be particularly difficult on adults with multiple chronic conditions and behavioral health disorders. [74,75] The DSRIP demonstration is hypothesized to reduce hospital readmissions by improved transitional care and community care coordination.

The first national Medicaid (HMO) HEDIS® benchmarks for this measure is reported at a readmission rate of 10 for adults 18-64.

Compared to the pre-Demonstration period the behavioral health population experienced a small decrease in the hospital readmission rate for any cause between the pre-Demonstration and pandemic periods. In addition, as shown in Figure 6.1—69 compared to the non-Behavioral Health group, the behavioral health population hospital readmission rate was greater in every study period (6% vs 2%).

Figure 6.1—69. Prevalence of Hospital Readmission for Any Cause over Time
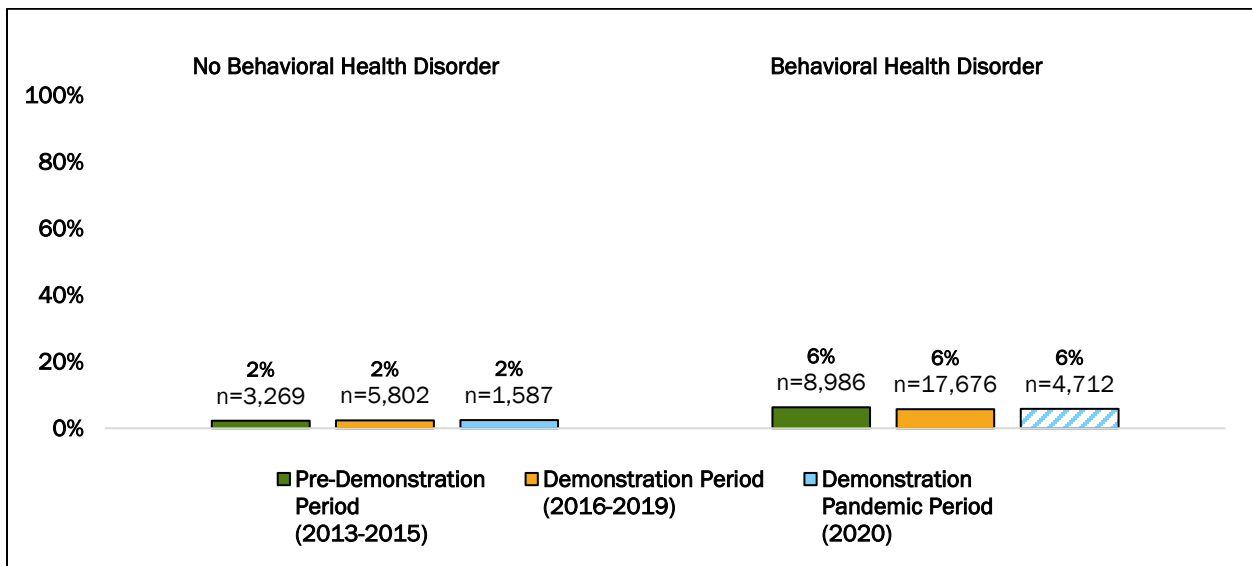
*Pattern within a column indicates significant change from Pre-Demonstration period

When examining hospital readmissions for Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders, results show that hospital readmission for any cause were more likely among the behavioral health group than the non-behavioral health group in all three periods. Compared to the non-behavioral health disorder group (Table 6.1-77), Beneficiaries with behavioral health disorders were:

♦ **5 times** more likely to have a readmission for any cause prior to the Demonstration (2013-2015)

◆ Almost **4 times** more likely to have a readmission for any cause post implementation of the Demonstration (2016-2019)

◆ **4.5 times** more likely to have a readmission for any cause during the Demonstration Pandemic period (2020)

Hospital readmission for any cause increased significantly between the pre-Demonstration and post periods for those with no behavioral health disorders.

Table 6.1-77. Generalized Linear Models Estimating Prevalence of Hospital Readmission

Propensity Matched Sample (N= 817,070)					
Parameter	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	5.0154	0.6290	3.9225	6.4129	**<.0001**
Demonstration Period (BH to Non-BH)	3.7945	0.3221	3.2129	4.4813	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	4.5002	0.6970	3.3219	6.0964	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	1.0693	0.0715	0.9380	1.2190	0.3162
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	1.1756	0.1014	0.9928	1.3921	0.0607
Change Pre-Demonstration/ Demonstration Period Non-BH sample	1.4134	0.1895	1.0868	1.8380	**0.0099**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	1.3102	0.2403	0.9146	1.8770	0.1407
BH vs. Non-BH Time Interaction (Demonstration Period)	0.7566	0.1138	0.5634	1.0160	0.0636
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.8973	0.1815	0.6036	1.3338	0.5920

No significant changes between the pre-Demonstration and Demonstration periods were found in the Beneficiary population with behavioral health conditions when controlling for Beneficiary characteristics of interest (Table 6.1-78). Among Beneficiaries with a behavioral health disorder:

◆ Readmissions for any cause were lower for dual eligible Beneficiaries;

◆ Readmission rates for any cause were associated with Beneficiaries who were older and had higher ACG risk score; and

◆ Lower readmission rates for any cause were associated with being female and residing in rural locations.

Table 6.1-78. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Any Cause – Unmatched Behavioral Health Sample

| Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-6.8858	0.1366	-7.1536	-6.6181	<.0001
Demonstration Period	0.1578	0.0868	-0.0123	0.3278	0.0690
Demonstration Pandemic Period	0.0873	0.1198	-0.1475	0.3221	0.4662
Age	0.0150	0.0026	0.0099	0.0201	**<.0001**
Female	-0.4070	0.0704	-0.5449	-0.2690	**<.0001**
Dual Eligible	-1.5616	0.1786	-1.9116	-1.2115	**<.0001**
Expansion Population	0.0210	0.0924	-0.1601	0.2021	0.8201
ACG Risk Score	0.0943	0.0044	0.0857	0.1029	**<.0001**
Large Rural	-0.2437	0.0970	-0.4339	-0.0536	**0.0120**
Small Rural	-0.4166	0.1289	-0.6692	-0.1640	**0.0012**
Isolated Rural	-0.5151	0.1483	-0.8057	-0.2244	**0.0005**
	Estimate (Incident Rate Ratio)	**Standard Error**	**95% Confidence Limits**		**P-value**
BH Demonstration vs Pre-Demonstration Period	1.1709	0.1016	0.9878	1.3879	0.0690
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0912	0.1307	0.8629	1.3800	0.4662

*Bold indicates significant (p<0.05)

The chronic conditions' subpopulations (asthma, COPD, CVD, diabetes) experienced either an increase in readmission for any cause or remained relatively consistent over the study period (Figure 6.1—70, Figure 6.1—71). Compared to the pre-Demonstration period:

- More readmissions for Beneficiaries with behavioral health disorders and asthma during the Demonstration Pandemic period;
- More readmissions for Beneficiaries with behavioral health disorders and COPD during the Demonstration Pandemic period; and
- More readmissions for Beneficiaries with behavioral health disorders and CVD during the Demonstration and Demonstration Pandemic period.
- There were no significant differences in the non-behavioral health population.
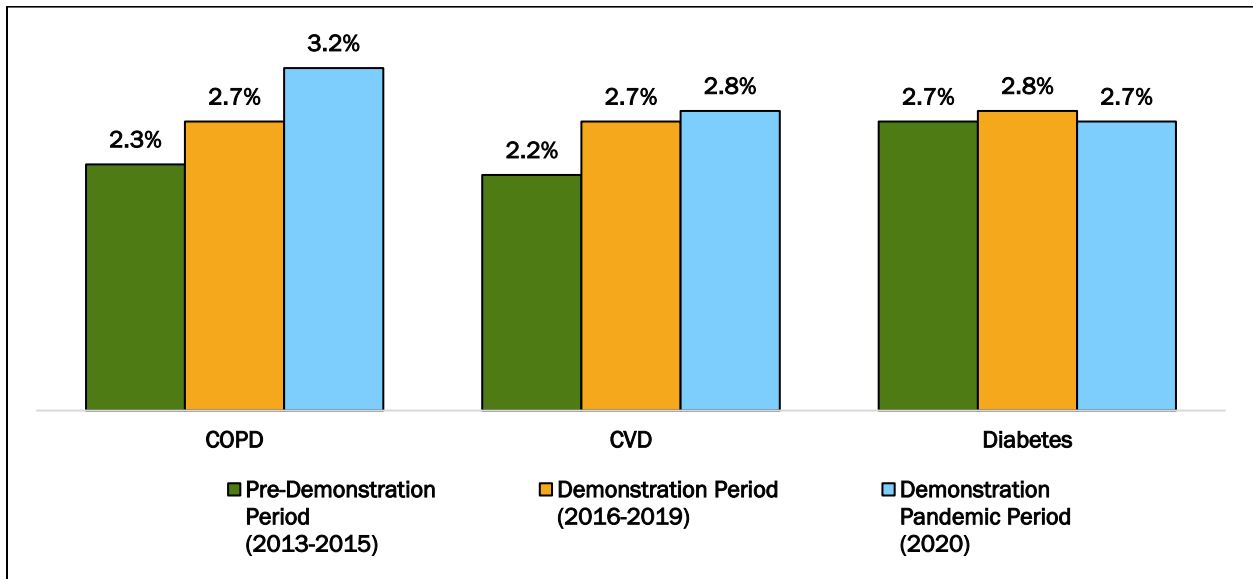
Compared to the non-Behavioral Health group

- Readmission rates were higher for the behavioral health population with COPD, CVD, and diabetes.

Figure 6.1—70. Prevalence of Hospital Readmission for Any Cause by Chronic Conditions Behavioral Health Population
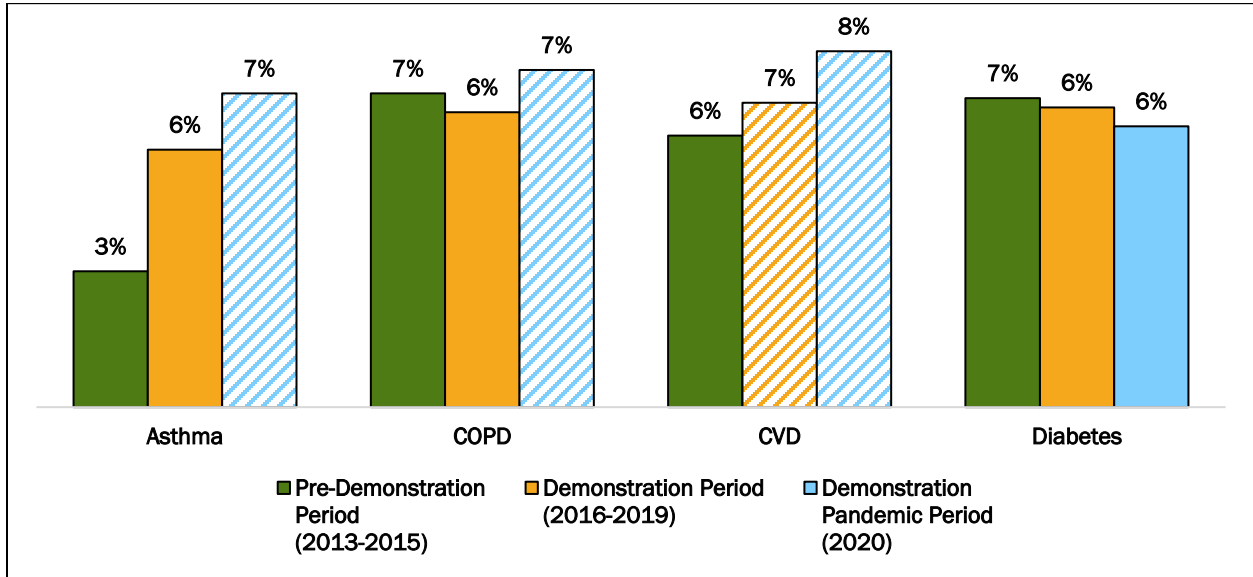
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—71. Prevalence of Hospital Readmission for Any Cause by Chronic Conditions – Non-Behavioral Health Population

*Pattern within a column indicates significant change from Pre-Demonstration period

When examining rates of readmissions among Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders, results showed most subpopulations with a behavioral health disorder were more likely to have hospital readmission for any cause than Beneficiaries without behavioral health disorder in the Demonstration periods (Table 6.1-79). Compared to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders were:

- **3.4 to 3.6 times more likely** to have readmissions prior to the Demonstration (2013-2015) among the COPD, CVD, and diabetes subpopulations
- **2.5 to 3.1 times more likely** to have readmissions post implementation of the Demonstration (2016-2019) among the COPD, CVD, and diabetes subpopulations
- **2.6 to 3.6 times more likely** to have readmissions during the Pandemic period (2020) among the COPD, CVD, and diabetes subpopulations

In addition, compared to the pre-Demonstration period, the CVD behavioral health sample was 1.6 times more likely to be readmitted to the hospital within 30 days in the Demonstration period.

Table 6.1-79. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Any Cause – Subpopulation Propensity Matched Sample

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
Pre-Demonstration Period (BH to Non-BH)	Insufficient data for analysis		3.5559	<.0001	3.5911	<.0001	3.3692	**<.0001**
Demonstration Period (BH to Non-BH)			2.8216	<.0001	3.1418	<.0001	2.4666	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)			2.7441	0.0003	3.6446	<.0001	2.5779	**0.0002**
Change Pre-Demonstration/ Demonstration Period BH sample			1.0469	0.7068	1.2661	0.1078	1.0469	0.7107
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample			1.1993	0.2563	1.6325	0.0104	1.0182	0.9085
Change Pre-Demonstration/ Demonstration Period Non-BH sample			1.3193	0.2206	1.4471	0.0743	1.4299	0.0724

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample			1.5540	0.1625	1.6085	0.1127	1.3307	0.3244
BH vs. Non-BH Time Interaction (Demonstration Period)			0.7935	0.3660	0.8749	0.5879	0.7321	0.1860
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)			0.7717	0.4602	1.0149	0.9661	0.7651	0.4138

*Bold indicates significant (p<0.05)

There were significant changes in the rate of hospital readmission for any cause over time when controlling for Beneficiary characteristics of interest. Among Beneficiaries with a behavioral health disorder and chronic conditions:

- There was a significantly higher rate of readmissions between the pre-Demonstration and Demonstration periods; difference in rates were 1.61 times for COPD and 1.56 times for diabetes between these periods.
- Similarly, the rate of readmissions was higher in the Demonstration Pandemic period compared to the pre-Demonstration period for COPD and diabetes.
- Readmissions were lower for the dual eligible Beneficiaries with COPD, CVD, and diabetes.
- Higher readmission rates were associated with having higher ACG risk score for all chronic condition groups, except diabetes where the rate was lower.
- Lower readmission rates were associated with being female in the COPD population, and residing in small and isolated rural for the COPD and diabetes populations.

Table 6.1-80. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Any Cause – Behavioral Health Subpopulations

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	-8.3976	<.0001	-4.8082	<.0001	-5.0373	<.0001	-4.6018	<.0001
Demonstration Period	0.5409	0.3298	0.4767	0.0005	0.1908	0.1399	0.4465	0.0109
Demonstration Pandemic Period	0.6589	0.3369	0.4992	0.0119	-0.0574	0.7782	0.6027	0.0056
Age	0.0007	0.9575	-0.0111	0.3055	-0.0088	0.1216	-0.0135	0.1869
Female	0.3871	0.4489	-0.3179	0.0251	-0.0464	0.7273	0.1382	0.4298
Dual Eligible	-0.6174	0.6107	-2.0585	<.0001	-2.0067	<.0001	-2.4693	<.0001

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Expansion Population	0.2800	0.4731	-0.3537	0.0584	-0.0899	0.5917	-0.2640	0.2182
ACG Risk Score	0.1252	<.0001	0.0830	<.0001	0.0848	<.0001	-0.0812	<.0001
Large Rural	0.3103	0.5805	-0.2337	0.2164	-0.2575	0.1603	-0.3037	0.1577
Small Rural	-0.4087	0.5605	-0.5902	0.0044	-0.2812	0.2282	-0.7206	0.0054
Isolated Rural	-0.0038	0.9951	-0.5610	0.0097	-0.3685	0.0801	-0.6047	0.0077
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	1.7175	0.3298	1.6107	0.0005	1.2102	0.1399	1.5628	**0.0109**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.9327	0.3369	1.6474	0.0119	0.9442	0.7782	1.8271	**0.0056**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—72, the rate of hospital readmissions was similar across periods for some IDNs while others, especially IDN 2, experienced variation.

Figure 6.1—72. Rate of Hospital Readmission by IDN – Behavioral Health Population
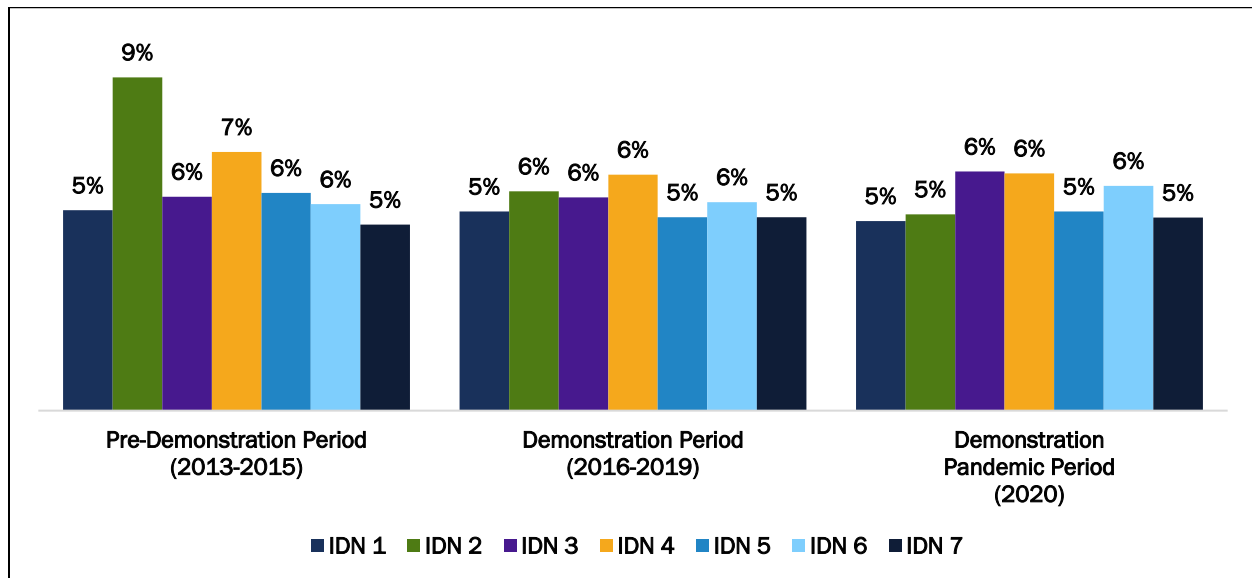
There were some differences in hospital readmission rates, without controlling for Beneficiary characteristics, in IDN rates across the Demonstration period compared to IDN 2 (Table 6.1-81). When compared to IDN 2, the following differences are significant:

- In the pre-Demonstration IDN 1, IDN 3, IDN 4, IDN 5, IDN 6 and IDN 7 had lower readmission rates; and
- In the Demonstration IDN 4 had higher readmission rates

Table 6.1-81. Rate of Hospital Readmissions with Significant Differences Compared to IDN 2 by Period - Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase or Decrease	IDN	Increase or Decrease	IDN	Increase or Decrease
Hospital Readmission for Any Cause	IDN 1	▼	IDN 4	▲		
	IDN 3	▼				
	IDN 4	▼				
	IDN 5	▼				
	IDN 6	▼				
	IDN 7	▼				

After controlling for Beneficiary characteristics of interest, results showed significant differences in IDN readmission rates compared to IDN 2 over the course of the Demonstration (Table 6.1-82). The readmission rate for Beneficiaries in IDN 2 declined between the pre-Demonstration and Demonstration periods by 40% and between the pre-Demonstration and Demonstration Pandemic by 52%. Compared to IDN 2 (Figure 6.1—73, Figure 6.1—74):

- The rate of change in the readmission rate for Beneficiaries in IDN 3, IDN 4, and IDN 7 was significantly different. Readmission rates for IDNs 3, 4 and 7 did not decline as much as IDN 2 between the pre-Demonstration and Demonstration periods.
- The rate of change in the readmission rate for Beneficiaries in IDN 3, IDN 4, and IDN 6 was significantly different. Readmission rates for IDNs 3, 4 and 6 did not decline as much as IDN 2 between the pre-Demonstration and Demonstration pandemic periods.

Figure 6.1—73. Results of Generalized Linear Model Estimating Rate of Change of Hospital Readmissions within 30 Days for Any Cause Relative to IDN 2
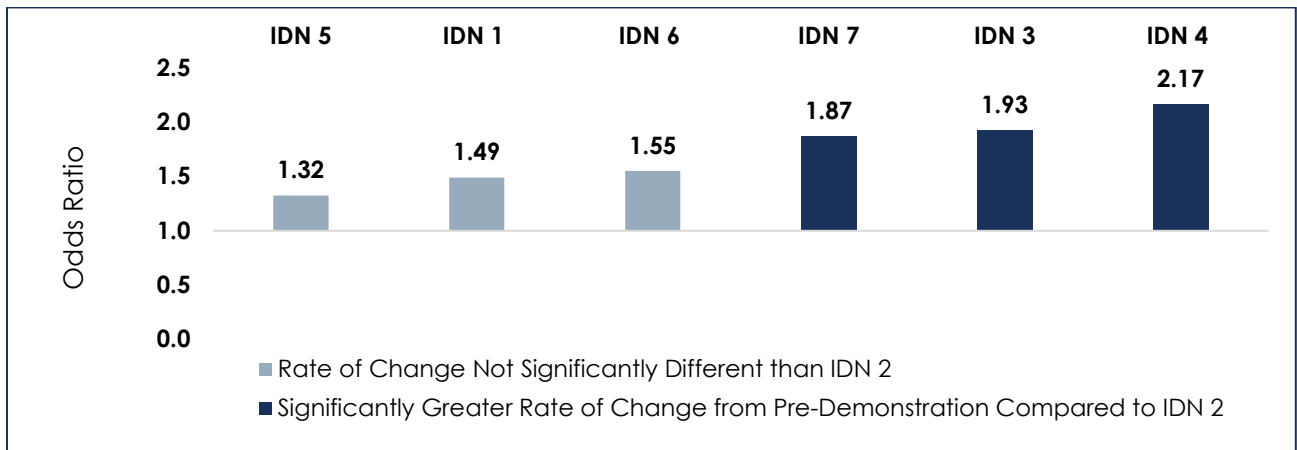*Behavioral Health Population (Demonstration Period)*

Figure 6.1—74. Results of Generalized Linear Model Estimating Rate of Change of Hospital Readmissions within 30 Days for Any Cause Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
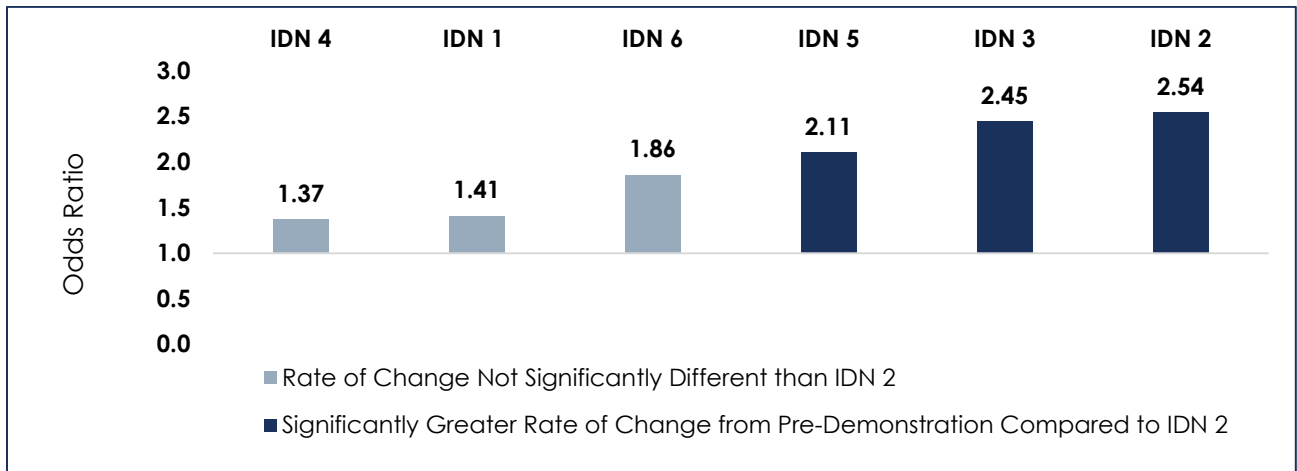
Table 6.1-82. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Any Cause – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.5930	**0.0027**	0.4770	**0.0028**
Time Interaction				
IDN 1	1.4893	0.0941	1.4103	0.3137
IDN 3	1.9299	**0.0058**	2.5429	**0.0036**
IDN 4	2.1672	**0.0004**	2.4483	**0.0200**
IDN 5	1.3245	0.2533	1.3725	0.3261
IDN 6	1.5521	0.0596	2.1070	**0.0178**
IDN 7	1.8733	**0.0134**	1.8604	0.0879

*Bold indicates significant (p<0.05)

6.1.4.4 Hospital Readmission for Behavioral Health Disorder

Readmissions for behavioral health disorder hospitalizations was consistent throughout the study period with a slight non-significant decline between the pre-Demonstration and Demonstration periods. There are no national HEDIS® benchmarks for comparison on this measure.

Figure 6.1—75. Prevalence of Hospital Readmission for Behavioral Health Related Disorder
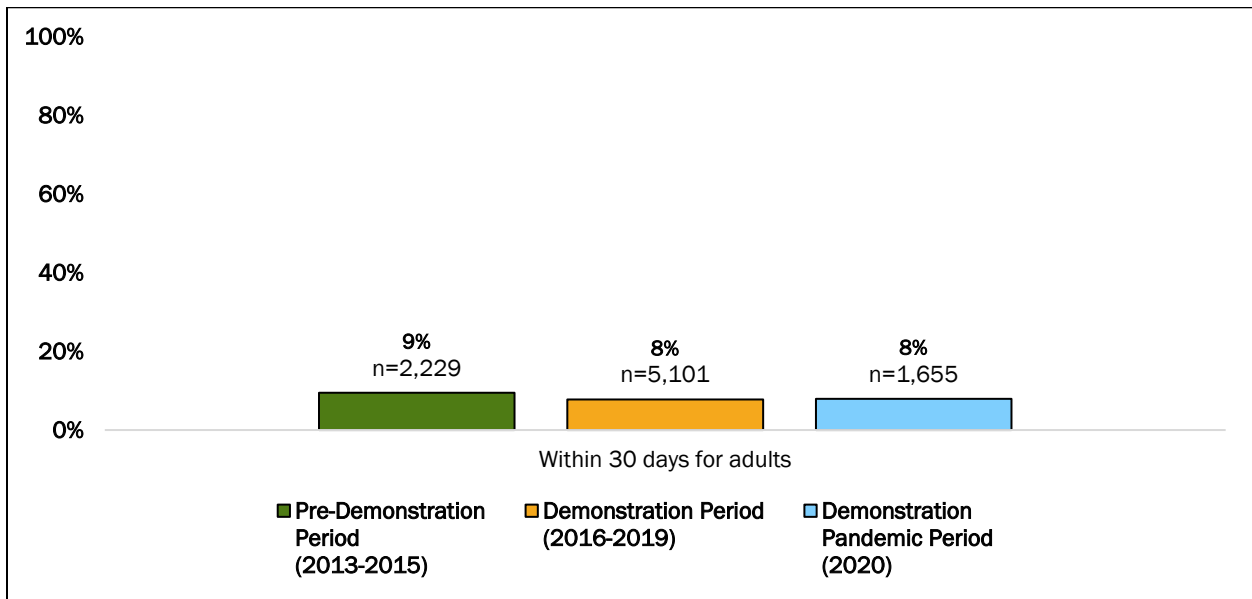
*Pattern within a column indicates significant change from Pre-Demonstration period

There was no significant change in behavioral health related hospital readmissions between the pre-Demonstration and Demonstration periods when controlling for Beneficiary characteristics of interest in the behavioral health group (Table 6.1-83). For the behavioral health population with a mental health related hospitalization:

- Behavioral health readmissions were lower for dual eligible Beneficiaries but higher for the expansion population;
- Behavioral health readmission rates were associated with having higher ACG risk score; and
- Lower Behavioral health readmission rates were associated with Beneficiaries who were older, female and residing in small rural & isolated rural areas.

Table 6.1-83. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Behavioral Health Related Disorder – Unmatched Behavioral Health Sample

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-2.0666	0.1338	-2.3289	-1.8042	<.0001
Demonstration Period	-0.1551	0.0815	-0.3148	0.0046	0.0570
Demonstration Pandemic Period	-0.0530	0.0996	-0.2482	0.1421	0.5943
Age	-0.0323	0.0024	-0.0370	-0.0276	**<.0001**
Female	-0.3318	0.0735	-0.4758	-0.1877	**<.0001**
Dual Eligible	-0.5369	0.1211	-0.7742	-0.2996	**<.0001**
Expansion Population	0.2234	0.0825	0.0616	0.3851	**0.0068**
ACG Risk Score	0.0254	0.0032	0.0191	0.0316	**<.0001**
Large Rural	0.0097	0.1076	-0.2013	0.2206	0.9283
Small Rural	-0.5294	0.1402	-0.8042	-0.2547	**0.0002**
Isolated Rural	-0.3246	0.1558	-0.6299	-0.0193	**0.0372**
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8563	0.0698	0.7299	1.0046	0.0570
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9483	0.0944	0.7802	1.1527	0.5943

*Bold indicates significant (p<0.05)

Among the chronic conditions' subpopulations (asthma, COPD, CVD, diabetes), there were no significant change over the study period for behavioral health related hospital readmissions (Figure 6.1—76).

Figure 6.1—76. Prevalence of Hospital Readmission for Behavioral Health Related Disorder by Chronic Conditions
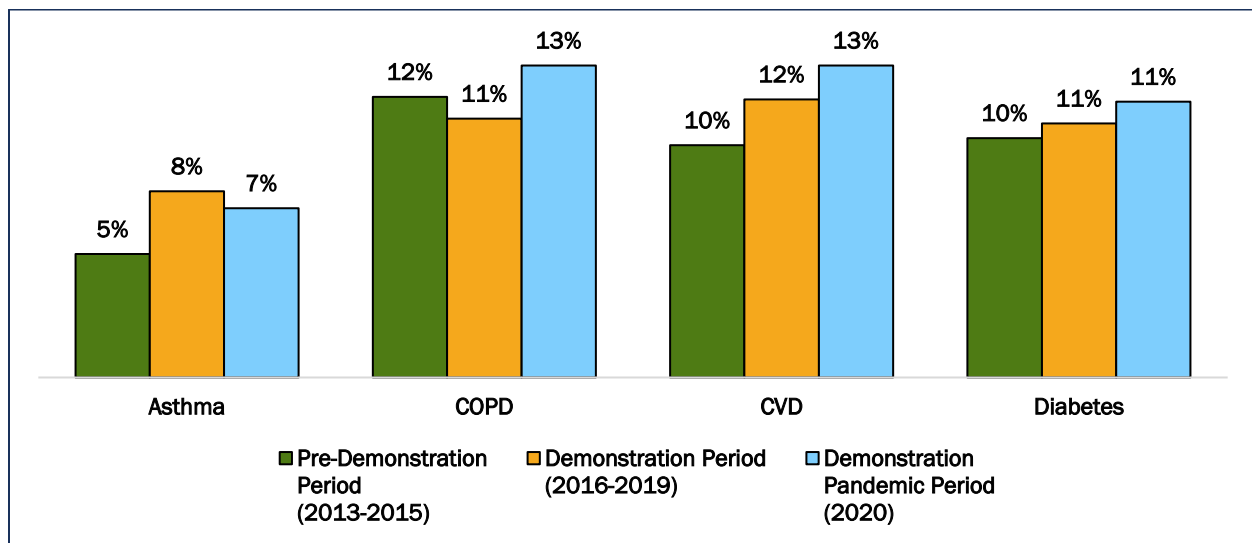
*Pattern within a column indicates significant change from Pre-Demonstration period

Similarly, there was no significant change in the chronic condition subpopulations in hospital readmission rates for any cause related to behavioral health over time when controlling for Beneficiary characteristics of interest (Table 6.1-84). Among Beneficiaries with a behavioral health disorder and chronic conditions:

- Readmissions were lower for the dual eligible Beneficiaries with COPD, CVD, and diabetes;
- Higher behavioral health related readmission rates were associated with having high ACG risk score; and
- Lower behavioral health related readmission rates were associated with older Beneficiaries with asthma, COPD, and diabetes and Beneficiaries with diabetes residing in small rural location.

Table 6.1-84. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Behavioral Health Related Disorder – Behavioral Health Subpopulations

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	-2.3572	0.0508	-1.6985	0.0003	-5.0373	<.0001	-2.4274	0.0002
Demonstration Period	0.6198	0.5426	0.1071	0.6167	0.1908	0.1399	-0.0321	0.9173
Demonstration Pandemic Period	1.2043	0.2480	0.3805	0.1028	-0.0574	0.7782	0.4300	0.2186
Age	-0.0703	**<.0001**	-0.0482	**<.0001**	-0.0088	0.1216	-0.0409	**<.0001**
Female	0.4831	0.3827	-0.2834	0.1252	-0.0464	0.7273	-0.4271	0.0981
Dual Eligible	-1.1256	0.3862	-0.6523	**0.0308**	-2.0067	**<.0001**	-1.3067	**0.0005**
Expansion Population	-0.2002	0.6790	0.3386	0.0674	-0.0899	0.5917	0.2074	0.4320
ACG Risk Score	0.0308	**0.0464**	0.0428	**<.0001**	0.0848	**<.0001**	0.0369	**<.0001**
Large Rural	0.6174	0.2339	0.1205	0.7519	-0.2575	0.1603	-0.3344	0.3892
Small Rural	0.1770	0.8186	-0.5883	0.0622	-0.2812	0.2282	-1.7532	**0.0158**
Isolated Rural	-0.5119	0.4704	-0.6721	0.1475	-0.3685	0.0801	-0.6254	0.1951
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	1.8585	0.5426	1.1130	0.6167	1.2102	0.1399	0.9685	0.9173
BH Demonstration Pandemic vs Pre-Demonstration Period	3.3345	0.2480	1.4629	0.1028	0.9442	0.7782	1.5372	0.1286

*Bold indicates significant (p<0.05)

Readmission rates for behavioral health admissions varied by IDN and declined for several IDNs in the Demonstration periods. Behavioral health readmission rates ranged from 6 to 13% in the pre-Demonstration period and from 5% to 9% in the Demonstration and Pandemic periods (Figure 6.1—77).

Figure 6.1—77. Prevalence of Hospital Readmission for Behavioral Health Related Disorder by IDN
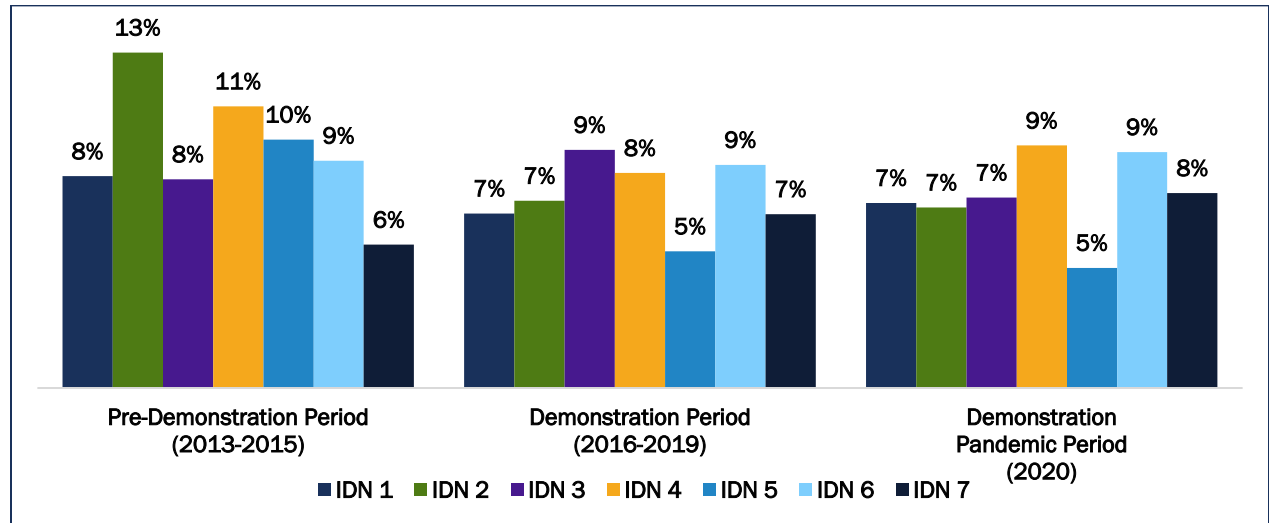
After controlling for age, gender, dual eligibility, whether Beneficiaries were enrolled in the expansion program, patient acuity (ACG risk score), and geographic location of the beneficiary regression results showed a significant difference between the pre-Demonstration and Demonstration periods for IDN 2 (Table 6.1-85). The rate of behavioral health readmissions for Beneficiaries in IDN 2 declined by 38% in the Demonstration period. The decline between the pre and pandemic periods was not statistically significant. Likewise, differences in the rate of change between IDN 2 and the other IDNs were not significant.

Table 6.1-85. Generalized Linear Models Estimating Prevalence of Hospital Readmission for Behavioral Health Related Disorder – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.6213	0.0417	0.6847	0.2226
Time Interaction				
IDN 1	1.2105	0.5419	0.9479	0.8991
IDN 3	1.8328	0.0562	1.4954	0.3417
IDN 4	1.5516	0.1217	1.7649	0.1160
IDN 5	0.8977	0.7377	0.7453	0.5564
IDN 6	1.5809	0.0990	1.8078	0.0991
IDN 7	1.7266	0.1627	1.7094	0.2641

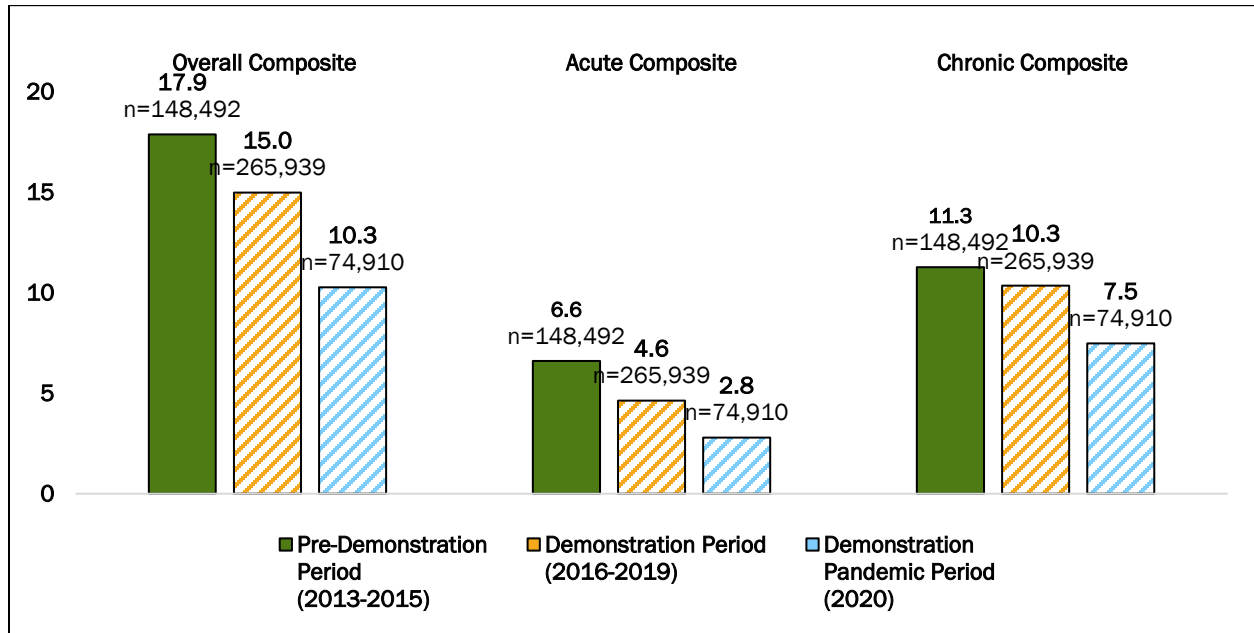*Bold indicates significant (p<0.05)

6.1.4.5 Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders

An ambulatory care sensitive condition (ACS) is defined as a condition for which timely and effective primary care or outpatient care can potentially reduce the risk of hospitalization. A summary of the research found that continuity of primary care was consistent with fewer ACS admissions.[76] Developed by the Agency for Healthcare Research and Quality (AHRQ), ACS conditions consist of 11 conditions considered as potentially preventable if managed well in the primary care setting. These conditions are combined into an acute rate consisting of dehydration, bacterial pneumonia, or urinary tract infection (UTI) (Prevention Quality Overall Composite #90)[77] and chronic rate consisting of diabetes short-term complications, diabetes long-term complications, chronic obstructive pulmonary disease (COPD) or asthma, hypertension, heart failure, uncontrolled diabetes, asthma in younger adults, and lower-extremity amputation among patients with diabetes (PQI #92).[78] A combined rate is also considered (PQI #90).[77] Admissions for Beneficiaries 18 and over are included.

It was hypothesized that the DSRIP demonstration would reduce ACS admissions by providing better continuity of care. In all three periods, ambulatory care sensitive hospital admission rates declined significantly for acute, chronic, and overall admissions and ACS admissions for Beneficiaries with a behavioral health disorder decreased significantly over time (Figure 6.1—78). When looking at ACS admission rates in both the behavioral health and non-behavioral health population, compared to the pre-Demonstration period (Figure 6.1—78, Figure 6.1—79):

- The overall ACS admission rate declined from 17.9 per thousand members to 15.0 per 1000 in the Demonstration period to 10.3 per thousand in the Demonstration Pandemic period.
- The acute ACS admission rate declined from 6.6 to 4.6 per thousand members in the Demonstration period to 2.8 per thousand in the Demonstration Pandemic period.
- The chronic ACS admission rate declined from 11.3 to 10.3 per thousand in the Demonstration period to 7.5 per thousand in the Demonstration Pandemic period.
- The overall ACS admission rate decreased for the non-behavioral health population from 4.8 per thousand in the pre-Demonstration period to 4.4 per thousand in the Demonstration period and to 3.0 per thousand in the pandemic. These changes were significant.
- The acute ACS admission rate also decreased significantly over time; the rate was 1.8 per thousand in the pre period, 1.4 per thousand in the Demonstration and to 0.7 per thousand in the Demonstration Pandemic period.
- The chronic ACS admission rate of 3.0 per thousand members was unchanged between the pre-Demonstration and Demonstration periods but dropped to 2.3 per thousand in the Demonstration Pandemic period. The change between the pre- and the Demonstration Pandemic periods was significant.
- Compared to the non-Behavioral Health group, Beneficiaries in the behavioral health population had a higher rate of ACS admissions (overall, acute, and chronic) in all three study periods than those without a behavioral health disorder.

Figure 6.1—78. Ambulatory Care Sensitive (ACS) Hospital Admission for Beneficiaries with Behavioral Health Disorders over Time (Rate per 1,000 members)

*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—79. Ambulatory Care Sensitive (ACS) Hospital Admission for Beneficiaries without Behavioral Health Disorders over Time (Rate per 1,000 members)
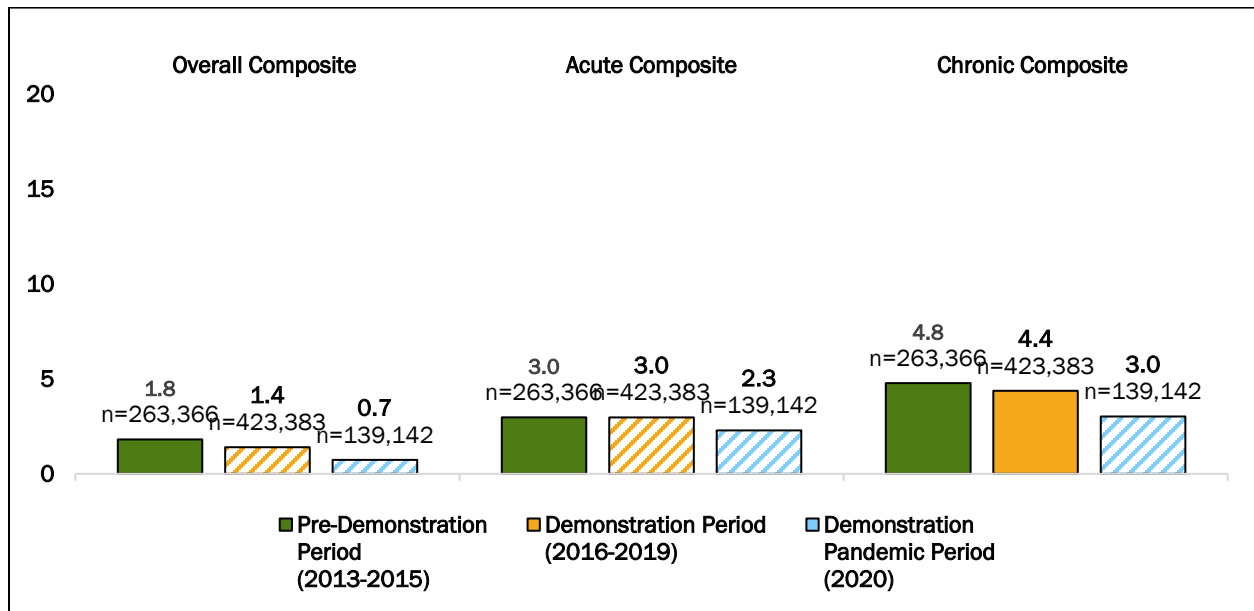
*Pattern within a column indicates significant change from Pre-Demonstration period

ACS admissions for Beneficiaries with behavioral health disorders were compared to a group of Beneficiaries with similar characteristics without behavioral health disorder. Results show that Beneficiaries with a behavioral health disorder were more likely to have ACS admissions

than Beneficiaries without a behavioral health disorder in all study periods (Table 6.1-86). There was a difference between the groups was for the overall, acute, and chronic ACS rates. Compared to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders were:

- **52% more likely** to have overall ACS admissions in the pre-Demonstration period;
- **42% more likely** to have overall ACS admissions Demonstration period; and
- **31% more likely** to have overall ACS admissions during the Demonstration Pandemic period.

In the behavioral health group, the rate of overall ACS admissions declined significantly between the pre-Demonstration and Demonstration periods and for both the behavioral health and non-behavioral health groups between the pre-Demonstration and Demonstration Pandemic periods (Table 6.1-86). The difference in the rate of decline between the two groups was not statistically significant.

Table 6.1-86. Generalized Linear Models Estimating Overall Ambulatory Care Sensitive Hospital Admission

Propensity Matched Sample (N= 817,070)					
Parameter	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.5202	0.0758	1.3787	1.6762	**<.0001**
Demonstration Period (BH to Non-BH)	1.4226	0.0586	1.3123	1.5421	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.3081	0.1019	1.1228	1.5239	**0.0006**
Change Pre-Demonstration/ Demonstration Period BH sample	0.8761	0.0335	0.8127	0.9443	**0.0005**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.6261	0.0353	0.5605	0.6993	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.9362	0.0451	0.8518	1.0289	0.1713
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.7276	0.0527	0.6314	0.8385	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	0.9358	0.0581	0.8286	1.0568	0.2850
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.8605	0.0791	0.7186	1.0304	0.1022

*Bold indicates significant (p<0.05)

When comparing the behavioral health group with similar characteristics to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders were:

- **46% more likely** to have acute ACS admissions in the pre-Demonstration period;
- **33% more likely** to have acute ACS admissions in the Demonstration period; and
- **40% more likely** to have acute ACS admissions during the Demonstration Pandemic period (Table 6.1-87).

The rate of acute ACS admissions declined between the pre- and Demonstration periods and between the pre-Demonstration and Demonstration pandemic periods for both the behavioral health and non-behavioral health groups (Table 6.1-87). The rate of change was not significantly different between the two samples.

Table 6.1-87. Generalized Linear Models Estimating Acute Ambulatory Care Sensitive Hospital Admission

Propensity Matched Sample (N= 817,070)					
Parameter	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.4644	0.1020	1.2776	1.6786	**<.0001**
Demonstration Period (BH to Non-BH)	1.3323	0.0809	1.1828	1.5007	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.4023	0.1988	1.0621	1.8516	**0.0171**
Change Pre-Demonstration/ Demonstration Period BH sample	0.6681	0.0388	0.5962	0.7487	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.4039	0.0414	0.3304	0.4938	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	0.7344	0.0515	0.6401	0.8426	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.4218	0.0508	0.3331	0.5342	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	0.9098	0.0824	0.7617	1.0866	0.2966
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.9576	0.1515	0.7023	1.3058	0.7842

*Bold indicates significant (p<0.05)

Compared to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders were:

- **48% more likely** to have chronic ACS admissions in the pre-Demonstration period
- **41% more likely** to have chronic ACS admissions in the Demonstration period

◆ **25% more likely** to have chronic ACS admissions during the Demonstration Pandemic period (Table 6.1-88)

The rate of chronic ACS admissions declined significantly by 27% between the pre-Demonstration and Demonstration Pandemic periods; however, the rate of change between the behavioral health and non-behavioral health groups was not significantly different (Table 6.1-88).

Table 6.1-88. Generalized Linear Models Estimating Chronic Ambulatory Care Sensitive Hospital Admission

Propensity Matched Sample (N= 817,070)					
Parameter	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.4835	0.0951	1.3083	1.6821	**<.0001**
Demonstration Period (BH to Non-BH)	1.4148	0.0735	1.2779	1.5665	**<.0001**
Demonstration Pandemic Period (BH to Non-BH)	1.2526	0.1159	1.0449	1.5016	**0.0149**
Change Pre-Demonstration/ Demonstration Period BH sample	0.9667	0.0479	0.8772	1.0653	0.4941
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.7347	0.0511	0.6411	0.8420	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	1.0136	0.0612	0.9005	1.1409	0.8234
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	0.8701	0.0766	0.7323	1.0340	0.1140
BH vs. Non-BH Time Interaction (Demonstration Period)	0.9537	0.0751	0.8173	1.1130	0.5478
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.8444	0.0946	0.6780	1.0516	0.1309

*Bold indicates significant (p<0.05)

Looking at only Beneficiaries with behavioral health disorders, there was a significant decline between the pre-Demonstration and Demonstration periods and between the pre- and Demonstration Pandemic periods when controlling for Beneficiary characteristics of interest (Table 6.1-89). For the individuals with behavioral health disorders:

◆ The decline of overall ACS admissions between the pre-Demonstration and post periods were significant; 12% in the Demonstration period versus 42% in the Demonstration Pandemic period.
◆ Overall ACS admissions were lower for dual eligible Beneficiaries.

◆ A higher rate overall ACS admissions was associated with Beneficiaries who were older and had higher ACG risk scores.

◆ A lower rate of overall ACS admissions was associated with residing in large and small rural areas.

Table 6.1-89. Generalized Linear Models Estimating Overall Ambulatory Care Sensitive Hospital Admission – Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-7.8183	0.1186	-8.0507	-7.5859	<.0001
Demonstration Period	-0.1313	0.0657	-0.2601	-0.0026	**0.0456**
Demonstration Pandemic Period	-0.5506	0.1035	-0.7533	-0.3478	**<.0001**
Age	0.0388	0.0020	0.0349	0.0428	**<.0001**
Female	-0.0451	0.0645	-0.1716	0.0813	0.4840
Dual Eligible	-0.4300	0.0857	-0.5979	-0.2620	**<.0001**
Expansion Population	-0.0915	0.0806	-0.2495	0.0665	0.2561
ACG Risk Score	0.0706	0.0038	0.0632	0.0780	**<.0001**
Large Rural	-0.2917	0.0909	-0.4699	-0.1135	**0.0013**
Small Rural	-0.2858	0.1108	-0.5030	-0.0686	**0.0099**
Isolated Rural	-0.0631	0.1117	-0.2819	0.1557	0.5719
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8769	0.0576	0.7710	0.9974	**0.0456**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.5766	0.0597	0.4708	0.7063	**<.0001**

*Bold indicates significant (p<0.05)

Among the behavioral health population:

◆ The decline of overall acute ACS admissions between the pre-Demonstration and Demonstration periods were significant; 20% in the Demonstration period versus 49% in the Demonstration Pandemic period.

◆ A higher rate of acute ACS admissions was associated with Beneficiaries who were older and had higher ACG risk score; and

◆ A lower rate of acute ACS admissions was associated with residing in a large rural geologic location (Table 6.1-90).

Table 6.1-90. Generalized Linear Models Estimating Acute Ambulatory Care Sensitive Hospital Admission – Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-8.8384	0.1555	-9.1431	-8.5337	**<.0001**
Demonstration Period	-0.2177	0.0836	-0.3815	-0.0539	**0.0092**
Demonstration Pandemic Period	-0.6725	0.1377	-0.9424	-0.4027	**<.0001**
Age	0.0370	0.0025	0.0320	0.0419	**<.0001**
Female	-0.0013	0.0763	-0.1507	0.1482	0.9869
Dual Eligible	-0.1613	0.0933	-0.3443	0.0216	0.0839
Expansion Population	-0.0957	0.0958	-0.2835	0.0921	0.3179
ACG Risk Score	0.0636	0.0036	0.0565	0.0706	**<.0001**
Large Rural	-0.4890	0.1329	-0.7494	-0.2285	**0.0002**
Small Rural	-0.2247	0.1201	-0.4602	0.0108	0.0615
Isolated Rural	0.1553	0.1259	-0.0914	0.4020	<0.2174
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8044	0.0672	0.6829	0.9476	**0.0092**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.5104	0.0703	0.3897	0.6685	**<.0001**

*Bold indicates significant (p<0.05)

Among the behavioral health population:

◆ The 41% decline of chronic ACS admissions between the pre-Demonstration and post periods was significant;

◆ Chronic ACS admission rates were lower for dual eligible Beneficiaries;

◆ Older Beneficiaries and those with higher ACG risk scores were associated with an increased rate of chronic ACS admissions; and

◆ Fewer chronic ACS admissions were associated with residing in large rural and small rural areas (Table 6.1-91).

Table 6.1-91. Generalized Linear Models Estimating Chronic Ambulatory Care Sensitive Hospital Admission – Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-8.2053	0.1526	-8.5044	-7.9061	<.0001
Demonstration Period	-0.1207	0.0866	-0.2905	0.0490	0.1632
Demonstration Pandemic Period	-0.5312	0.1308	-0.7876	-0.2748	**<.0001**
Age	0.0389	0.0026	0.0338	0.0440	**<.0001**
Female	-0.0584	0.0837	-0.2224	0.1056	0.4849
Dual Eligible	-0.5554	0.1145	-0.7799	-0.3310	**<.0001**

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Expansion Population	-0.0809	0.1061	-0.2888	0.1270	0.4458
ACG Risk Score	0.0738	0.0051	0.0639	0.0837	**<.0001**
Large Rural	-0.2154	0.1096	-0.4302	-0.0005	**0.0495**
Small Rural	-0.2991	0.1418	-0.5769	-0.0212	**0.0349**
Isolated Rural	-0.1810	0.1611	-0.4967	0.1347	0.2612
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.8863	0.0767	0.7479	1.0502	0.1632
BH Demonstration Pandemic vs Pre-Demonstration Period	0.5879	0.0769	0.4549	0.7597	**<.0001**

*Bold indicates significant (p<0.05)

Among the four chronic conditions' subpopulations, those with COPD, CVD, and diabetes experienced lower overall ACS hospital admissions in the Demonstration and the Demonstration Pandemic period when compared to the pre-Demonstration period (Figure 6.1—80, Figure 6.1—81). Compared to the pre-Demonstration period:

- Beneficiaries with COPD and a behavioral health disorder experienced significant declines in overall ACS admission rates during the Demonstration and Demonstration Pandemic periods; 180 per thousand to 151 per thousand in the Demonstration compared to 107 per thousand in the Demonstration Pandemic period.
- The ACS admission rate for the behavioral health population CVD declined during the Demonstration (160 to 137 per thousand) and Demonstration Pandemic periods (160 to 114 per thousand).
- ACS admission rates for beneficiaries with diabetes and a behavioral health disorder also declined during the Demonstration (111 to 102 per thousand) and Demonstration Pandemic periods (111 to 76 per thousand).
- The ACS admission rate for Beneficiaries with asthma and a behavioral health disorder was much lower for those with COPD, CVD, and diabetes, declining from 6.3 per thousand to 5.0 per thousand and then to 4.6 per thousand in the Demonstration Pandemic. These changes over time were not significant.

Figure 6.1—80. Overall ACS Hospital Admission for Beneficiaries with Behavioral Health Disorders (Rate per 1,000 members) by Chronic Conditions
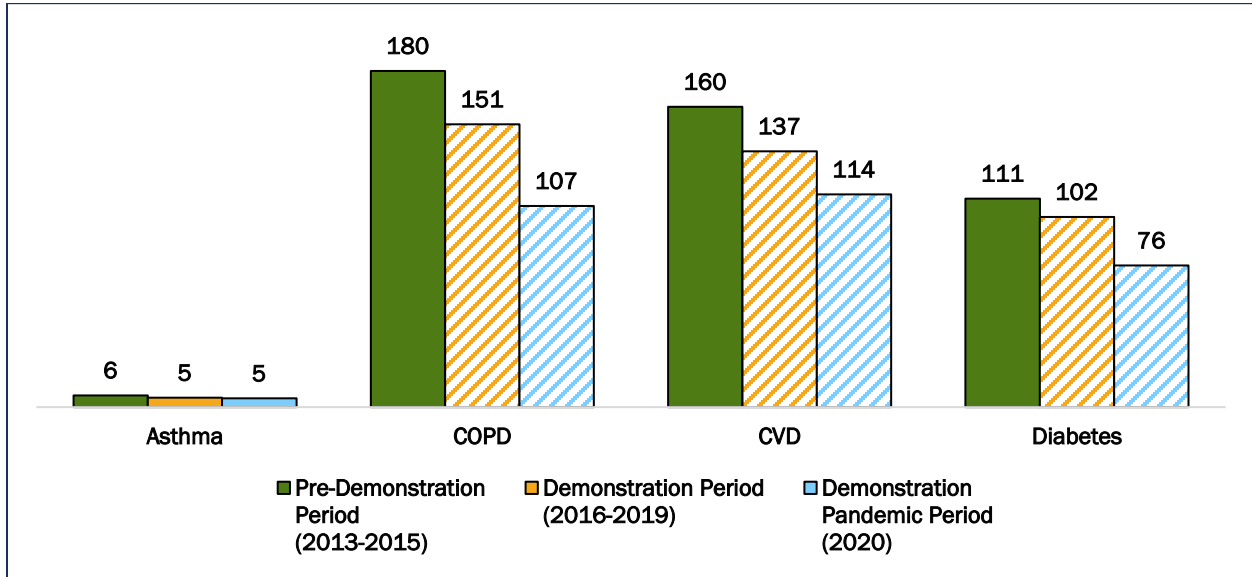
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—81. Overall ACS Hospital Admission for Beneficiaries without Behavioral Health Disorders (Rate per 1,000 members) by Chronic Conditions
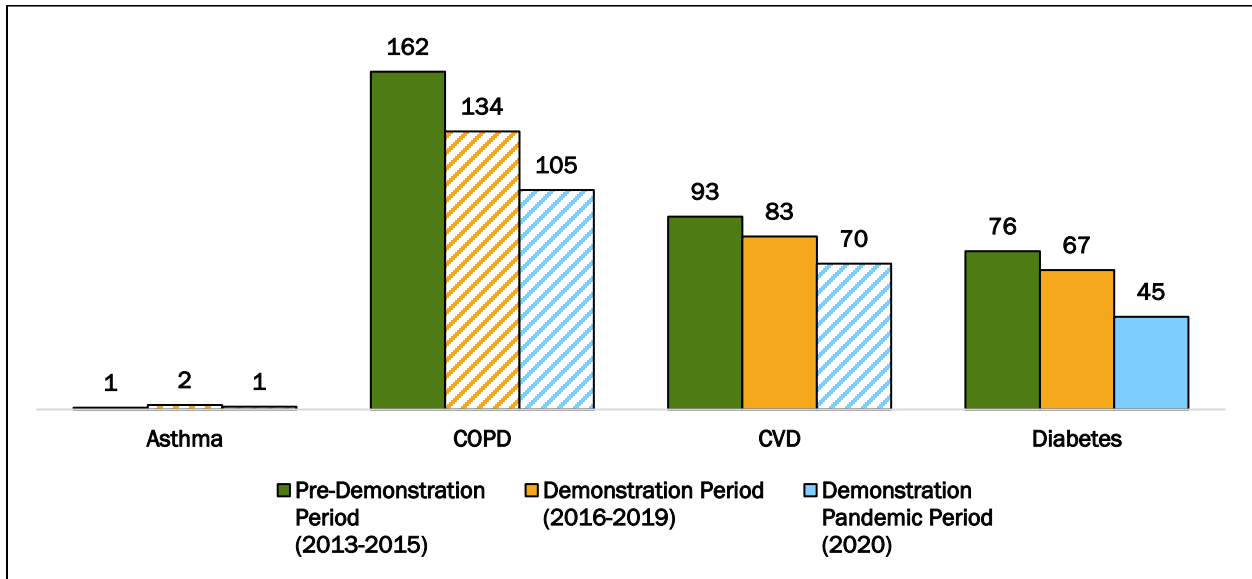
*Pattern within a column indicates significant change from Pre-Demonstration period

ACS admissions in Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders, results showed that Beneficiaries with a behavioral health disorder and chronic conditions were more likely to have ACS admissions than Beneficiaries without a behavioral health disorder in the Demonstration periods (Table 6.1-92). Compared to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders were:

- Beneficiaries with behavioral health disorders and CVD were **1.3 times more likely** to have ACS hospital admissions in the pre-Demonstration study period.
- Beneficiaries with behavioral health disorders and diabetes **were 1.6 times more likely** to have overall ACS admissions prior to the Demonstration (2013-2015) among the CVD and diabetes subpopulations.
- Beneficiaries with CVD and diabetes were **more likely** to have overall ACS admissions during the Demonstration period (2016-2019) (**1.2 times for CVD and 1.4 times for diabetes**)

Compared to the pre-Demonstration period (Table 6.1-92):

- Beneficiaries with behavioral health disorders and diabetes were **less likely** to have ACS hospital admissions in the both the Demonstration **(19%)** and Demonstration Pandemic **(38%).**
- Beneficiaries with behavioral health disorders and COPD **(39%)** or CVD **(29%) were less likely** to have ACS hospital admissions in the Demonstration Pandemic period.
- Beneficiaries with behavioral health disorders and COPD were **26% less likely** to have ACS admissions.

The difference in the rate of change between the behavioral health and non-behavioral health groups when comparing the pre-Demonstration to the Demonstration Pandemic periods was significant (Table 6.1-92). **The behavioral health population with chronic conditions had a greater decline than the comparable non-behavioral health population with chronic conditions in the likelihood of ACS admissions.** There were no significant differences in the rate of change between the pre-Demonstration and Demonstration periods.

Table 6.1-92. Generalized Linear Models Estimating Overall Ambulatory Care Sensitive Hospital Admission – Subpopulation Propensity Matched Group

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
Pre-Demonstration Period (BH to Non-BH)	2.2706	0.2613	1.1240	0.0673	1.2908	0.0002	1.5915	<.0001
Demonstration Period (BH to Non-BH)	0.9396	0.8742	1.0782	0.1892	1.1885	0.0024	1.3524	<.0001

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
Demonstration Pandemic Period (BH to Non-BH)	1.2363	0.8100	0.9258	0.4966	1.1643	0.1508	1.1579	0.2388
Change Pre-Demonstration/ Demonstration Period BH sample	1.0082	0.9872	0.8535	0.0055	0.9549	0.4243	0.8059	**0.0012**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	0.8625	0.8308	0.6134	<.0001	0.7130	<.0001	0.6193	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	2.4363	0.1746	0.8898	0.0542	1.0371	0.5546	0.9483	0.4368
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	1.5840	0.6142	0.7446	0.0023	0.7906	0.0132	0.8512	0.1136
BH vs. Non-BH Time Interaction (Demonstration Period)	0.4138	0.2872	0.9592	0.6162	0.9207	0.3305	0.8498	0.0848
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.5445	0.5956	0.8237	0.1336	0.9019	0.4079	0.7276	**0.0258**

*Bold indicates significant (p<0.05)

Looking at only Beneficiaries with behavioral health disorders, there was a significant change in overall ACS admissions between the pre-Demonstration and Demonstration periods when controlling for Beneficiary characteristics of interest (Table 6.1-93). Among the behavioral health population of Beneficiaries with chronic conditions:

- The decline of overall ACS admissions between the pre-Demonstration and the Demonstration was significant for Beneficiaries with asthma;
- The decline of overall ACS admissions between the pre-Demonstration and Demonstration Pandemic period was significant for Beneficiaries with asthma, COPD, and CVD periods were significant;
- Overall ACS admissions were lower for dual eligible Beneficiaries (COPD, CVD, diabetes);

 Overall ACS admissions were lower for the expansion population among the diabetes subpopulation but higher among the asthma subpopulation;

 More overall ACS admissions were associated with Beneficiaries who were older (COPD, diabetes), had a higher ACG risk score (CVD, diabetes), and resided in small rural location (asthma); and

 Fewer overall ACS admissions were associated with having a higher ACG risk score (COPD), residing in a large rural geologic location (COPD, CVD, diabetes), and residing in a small rural location (COPD).

Table 6.1-93. Generalized Linear Models Estimating Overall Ambulatory Care Sensitive Hospital Admission – Behavioral Health Subpopulations

Parameter	Asthma		COPD		CVD		Diabetes	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Intercept	-7.9518	<.0001	-5.6396	<.0001	-4.5459	<.0001	-5.0505	<.0001
Demonstration Period	-1.1024	0.0185	-0.0706	0.3492	-0.1254	0.1050	-0.0504	0.5991
Demonstration Pandemic Period	-1.1801	0.0404	-0.4849	0.0003	-0.4870	<.0001	-0.2672	0.0639
Age	0.0079	0.5871	0.0232	<.0001	-0.0024	0.4629	0.0099	0.0090
Female	0.9261	0.1297	-0.0973	0.2324	-0.1287	0.1256	0.1712	0.0971
Dual Eligible	0.2234	0.7946	-0.3601	<.0001	-0.4842	<.0001	-0.7021	<.0001
Expansion Population	0.8748	0.0290	-0.0763	0.4427	0.0643	0.5407	-0.2791	0.0387
ACG Risk Score	0.0402	0.1451	-0.0363	<.0001	0.0553	<.0001	0.0498	<.0001
Large Rural	-0.3229	0.6011	-0.2989	0.0086	-0.3078	0.0137	-0.3395	0.0216
Small Rural	0.9420	0.0439	-0.3705	0.0009	-0.1847	0.2020	-0.2625	0.1407
Isolated Rural	0.8853	0.1131	-0.0492	0.7162	0.0136	0.9208	-0.0073	0.9637
	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value	Estimate (Incident Rate Ratio)	P-value
BH Demonstration vs Pre-Demonstration Period	0.3321	0.0185	0.9318	0.3492	0.8821	0.1050	0.9508	0.5991
BH Demonstration Pandemic vs Pre-demonstration Period	0.3072	0.0404	0.6157	0.0003	0.6145	<.0001	0.7655	0.0639

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—82, without controlling for key factors of interest such as age and gender, the rate of overall ambulatory care sensitive hospital admissions declined over the study period for Beneficiaries with behavioral health disorders in all IDNs. In the pre-
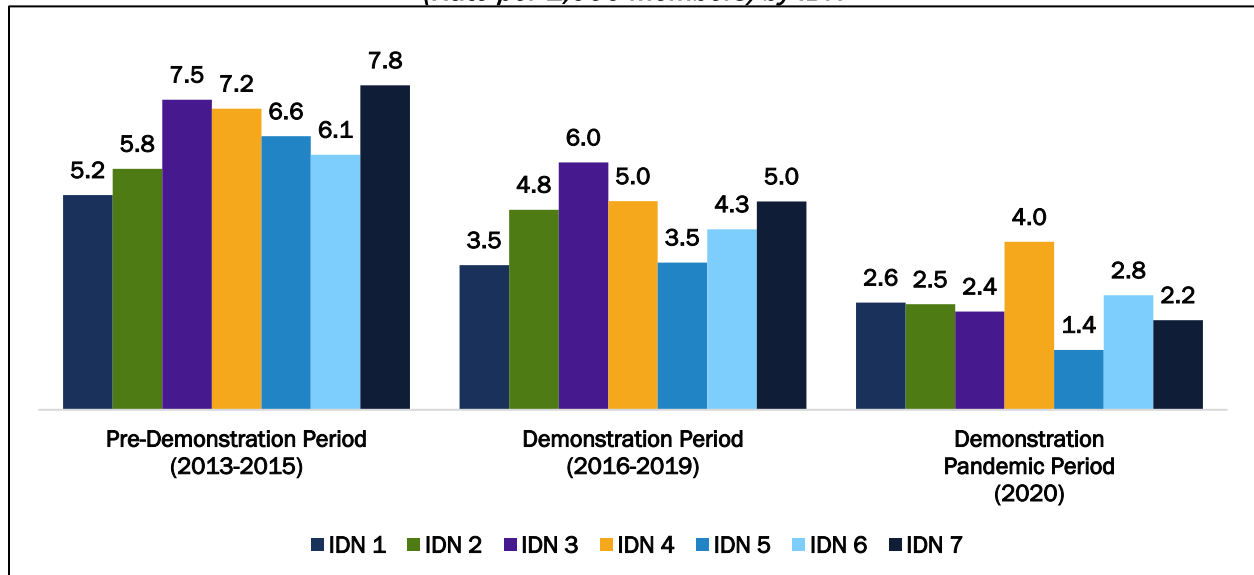
Demonstration period, the rate of overall ACS admissions ranged from 13 to 20 per thousand members. The range decreased to 12 to 19 per thousand in the Demonstration period and to 8 to 14 in the Demonstration Pandemic period.

Figure 6.1—82. Overall ACS Hospital Admission for Beneficiaries with Behavioral Health Disorders (Rate per 1,000 members) by IDN
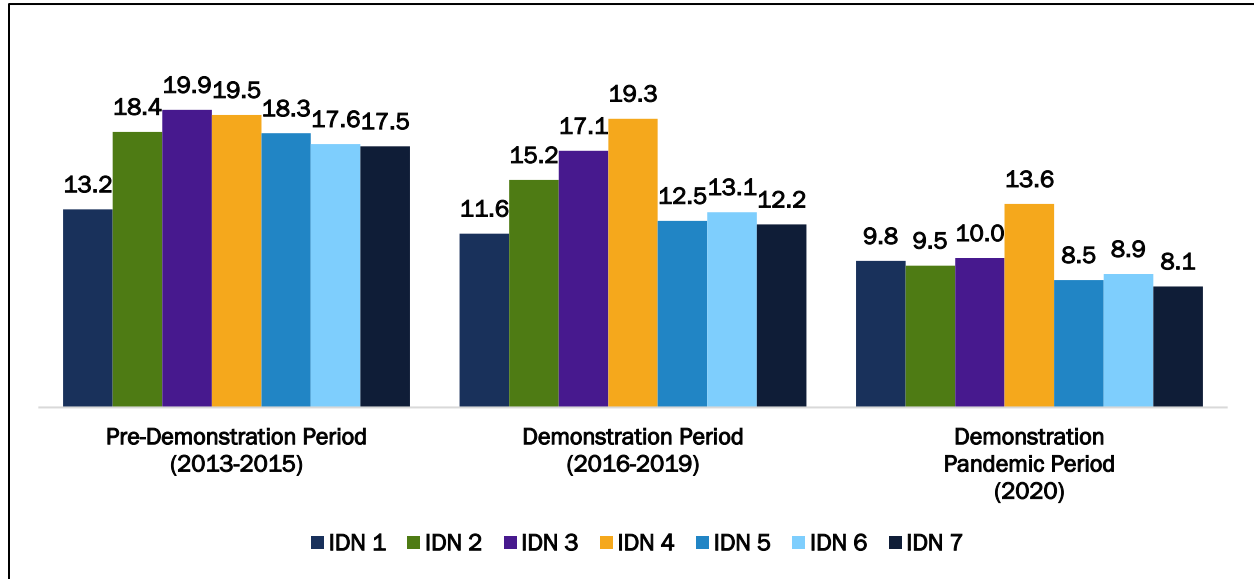

In the pre-Demonstration period, the rate of acute ACS admissions ranged from 5 to 8 per thousand members. The range decreased to 4 to 6 per thousand in the Demonstration period and to 1 to 4 in the Demonstration Pandemic period (Figure 6.1—83).

Figure 6.1—83. Acute ACS Hospital Admission for Beneficiaries with Behavioral Health Disorders (Rate per 1,000 members) by IDN

In the pre-Demonstration period, the rate of chronic ACS admissions ranged from 8 to 13 per thousand members. In the Demonstration, the range was similar at 8 to 14 per thousand members. However, chronic ACS hospital admissions did slightly decline in the post-Demonstration Pandemic period to a range of 6 to 10 (Figure 6.1—84).

Figure 6.1—84. Chronic ACS Hospital Admission for Beneficiaries with Behavioral Health Disorders (Rate per 1,000 members) by IDN
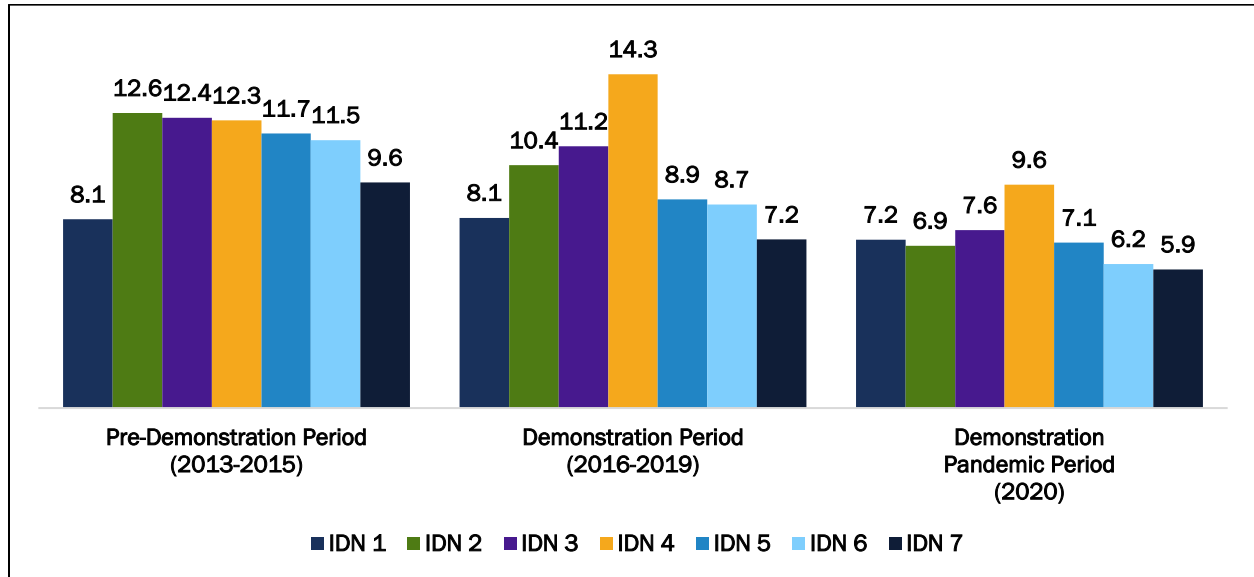
There were some significant differences in ACS hospital admissions, without controlling for Beneficiary characteristics, in IDN rates across the Demonstration period compared to IDN 2; results are shown in Table 6.1-94 for IDNs with significant differences compared to IDN 2. Compared to IDN 2 significant differences include:

- Overall, ACS admission rates were lower for IDN 1 in the pre-Demonstration. In the Demonstration period, overall rates were lower in IDN 1, IDN 5, IDN 6, and IDN 7 and higher in IDN 4. IDN 4 also had higher overall ACS admission rates in the Demonstration Pandemic period.
- Acute ACS admission rates were higher in IDN 7 in the pre-Demonstration period and lower in IDN 1 and IDN 5 in the Demonstration period.
- Chronic ACS hospital admission rates were lower in IDN 1 and IDN 7 in the pre-Demonstration period and in the Demonstration period. IDN 6 was also lower in the Demonstration period. IDN 4 had higher chronic ACS admissions in the Demonstration and Demonstration Pandemic periods.

Table 6.1-94. ACS Hospital Admission for Beneficiaries with Behavioral Health Disorders (Rate per 1,000 members) by IDN

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase/ Decrease	IDN	Increase/ Decrease	IDN	Increase/ Decrease
Overall ACS	IDN 1	▼	IDN 1	▼	IDN 4	▲
			IDN 4	▲		
			IDN 5	▼		
			IDN 6	▼		
			IDN 7	▼		
Acute ACS	IDN 7	▲	IDN 1	▼		
			IDN 5	▼		
Chronic ACS	IDN 1	▼	IDN 1	▼	IDN 4	▲
	IDN 7	▼	IDN 4	▲		
			IDN 6	▼		
			IDN 7	▼		

After controlling for Beneficiary characteristics of interest, significant differences were found in ACS hospital admission rates for some IDN over time (Table 6.1-94). Beneficiaries in IDN 2 were 65% less likely to have an acute ACS hospital admission in the Demonstration Pandemic period compared to the pre-Demonstration period, 55% less likely to have a chronic ACS admission, and 57% less likely to have an ACS hospital admission overall. These differences were significant. The likelihood of chronic ACS hospital admissions was 14% lower in the Demonstration period and 55% lower in the Demonstration Pandemic period compared to the pre-Demonstration period. Compared to IDN 2:

◆ The rate of change of overall ACS hospital admissions was significantly different for IDN 4. Although Beneficiaries in IDN 4 had a lower likelihood of ACS admissions in the Demonstration Pandemic period compared to the pre-Demonstration period, the decline was smaller than that of IDN 2; thus a relative odds of 1.62 admissions per thousand members (Figure 6.1—86).
◆ There were no other significant differences in the rate of change between IDNs for overall, acute, or chronic ACS hospital admissions (Table 6.1-94, Table 6.1-95, Figure 6.1—85).

Figure 6.1—85. Results of Generalized Linear Model Estimating Rate of Change of Overall Ambulatory Care Sensitive Hospitalizations Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
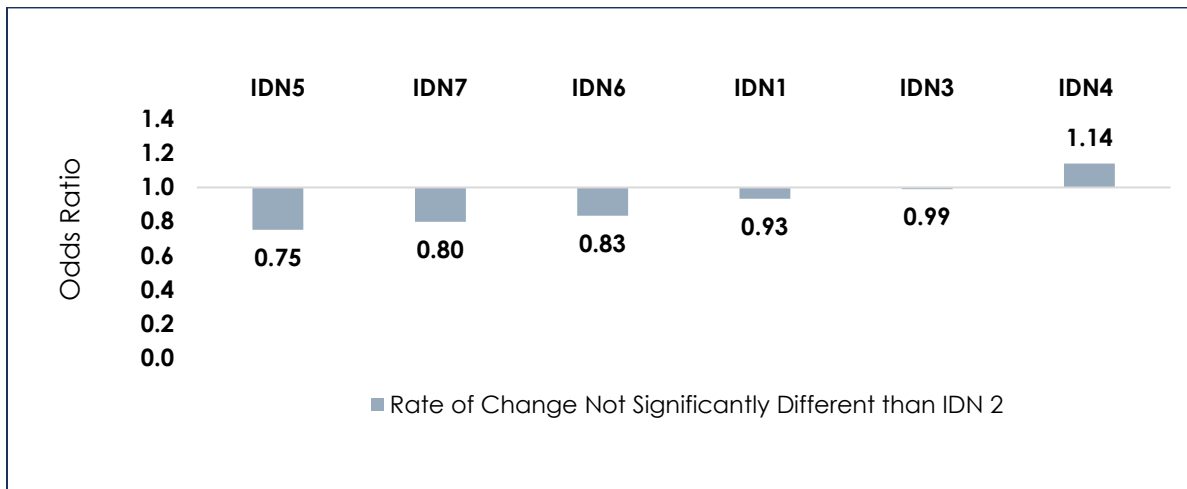

Figure 6.1—86. Results of Generalized Linear Model Estimating Rate of Change of Overall Ambulatory Care Sensitive Hospitalizations Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
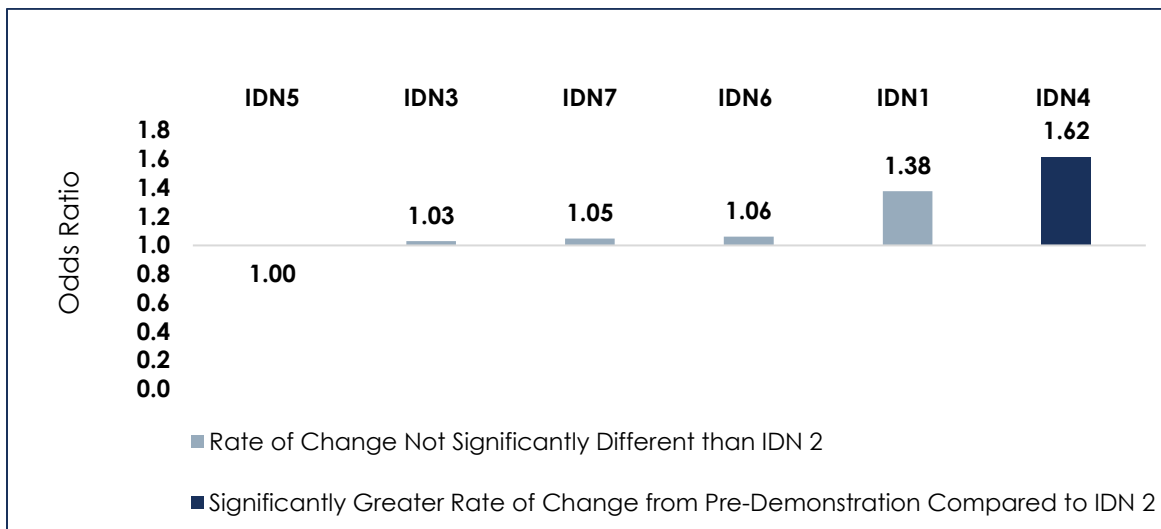
Table 6.1-95. Generalized Linear Models Estimating Overall Ambulatory Care Sensitive Hospital Admission – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.8748	0.3286	0.4344	**<0.0001**
Time Interaction				
IDN 1	0.9330	0.6986	1.3764	0.2258
IDN 3	0.9895	0.9507	1.0306	0.9089
IDN 4	1.1399	0.2037	1.6174	**0.0304**
IDN 5	0.7518	0.1077	0.9957	0.9871
IDN 6	0.8334	0.2813	1.0601	0.8097
IDN 7	0.7993	0.2146	1.0484	0.8761

*Bold indicates significant (p<0.05)

Table 6.1-96. Generalized Linear Models Estimating Acute Ambulatory Care Sensitive Hospital Admission – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.8125	0.2006	0.3475	**0.0004**
Time Interaction				
IDN 1	0.8706	0.5195	1.4249	0.3437
IDN 3	0.9849	0.9410	0.7885	0.5348
IDN 4	0.9051	0.5961	1.6439	0.1345
IDN 5	0.6788	0.0849	0.5809	0.2197
IDN 6	0.8750	0.5116	1.2816	0.4943
IDN 7	0.8244	0.3725	0.7630	0.5129

*Bold indicates significant (p<0.05)

Table 6.1-97. Generalized Linear Models Estimating Chronic Ambulatory Care Sensitive Hospital Admission – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.8600	<.0001	0.4458	**0.0015**
Time Interaction				
IDN 1	0.9950	0.9832	1.3646	0.3620
IDN 3	1.0145	0.9509	1.2053	0.5750
IDN 4	1.2989	0.2037	1.6772	0.0710
IDN 5	0.8007	0.3517	1.2028	0.5798
IDN 6	0.8473	0.4705	1.0342	0.9139
IDN 7	0.7918	0.3489	1.2610	0.5842

*Bold indicates significant (p<0.05)

6.1.4.6 Length of Stay for Inpatient Psychiatric Care

The DSRIP Demonstration is hypothesized to reduce the length of stay (LOS) at the New Hampshire Hospital, the state's institution for mental disease (IMD), through better continuity and coordination of community care. This measure excludes stays over 90 days because Beneficiaries with longer stays are less likely to be receiving services from an IDN and therefore not directly benefiting from the Demonstration.[22] It was anticipated that the DSRIP Demonstration would reduce inpatient psychiatric stays through improved access to care for Beneficiaries with behavioral health disorders.

The average length of stay ranged from 15.6 days in the pre-Demonstration period to 23.9 days in the Demonstration Pandemic period. Length of inpatient psychiatric stays significantly increased between the pre-Demonstration and Demonstration periods (Figure 6.1—87).

Figure 6.1—87. Length of Stay for Psychiatric Hospital Discharges by Period - Unadjusted
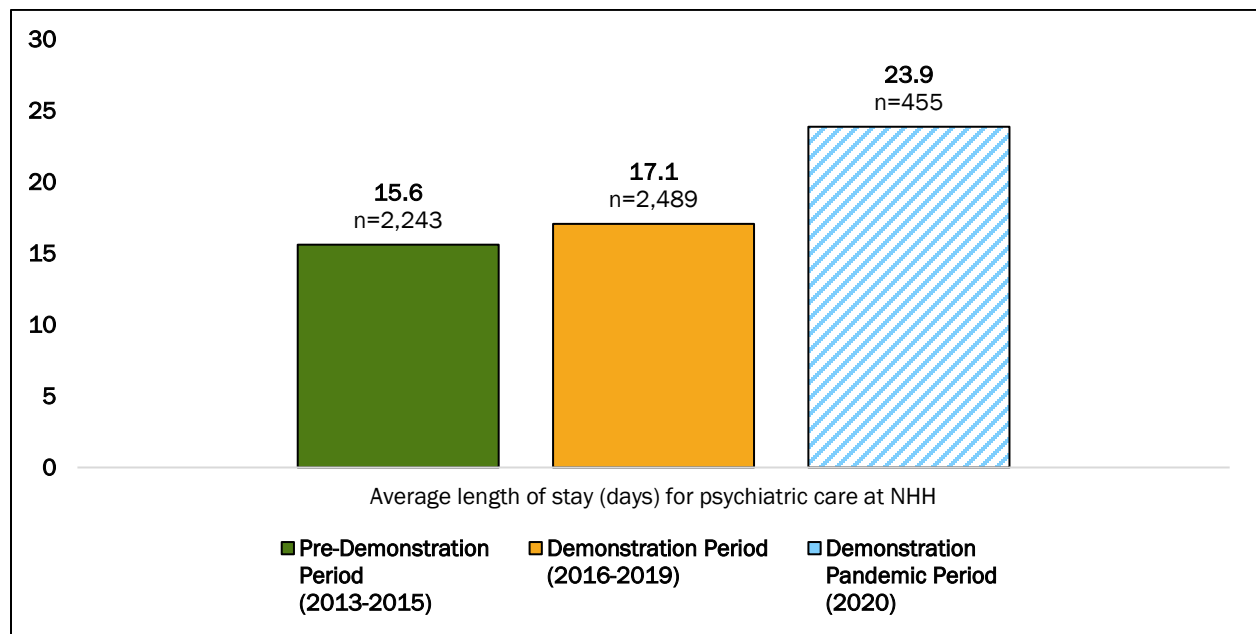
*Pattern within a column indicates significant change from Pre-Demonstration period

After controlling for Beneficiary characteristics of interest, results showed a significant change in length of stay for inpatient psychiatric care between the pre-Demonstration and Demonstration periods among Beneficiaries with behavioral health disorders (Table 6.1-98). Among the population of Beneficiaries with a behavioral health disorder:

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[22] A sensitivity analysis looking at setting outliers to missing, capping the measure at 90 days, and looking at the 99th percentile was conducted prior to conducting all of the analyses associated with the Length of Stay for Psychiatric Hospital Discharges measure.

◆ The increase of length of stay between the pre-Demonstration and Demonstration periods were significant (Demonstration: 6%; Demonstration pandemic: 33%);
◆ Average length of stay was longer for dual eligible Beneficiaries and the expansion population;
◆ Longer length of stay was associated with Beneficiaries who were older; and
◆ Shorter length of stay was associated with being female, having a higher ACG risk score, and residing in a large rural location.

Table 6.1-98. Generalized Linear Models Estimating Length of Stay for Psychiatric Hospital Discharges Unmatched Behavioral Health Group

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	0.0332	0.0350	-0.0355	0.1018	0.3433
Demonstration Period	0.0618	0.0275	0.0080	0.1156	**0.0245**
Demonstration Pandemic Period	0.2820	0.0497	0.1846	0.3794	**<.0001**
Age	0.0111	0.0011	0.0089	0.0133	**<.0001**
Female	-0.1039	0.0280	-0.1589	-0.0490	**0.0002**
Dual Eligible	0.1421	0.0396	0.0644	0.2198	**0.0003**
Expansion Population	0.1405	0.0436	0.0550	0.2260	**0.0013**
ACG Risk Score	-0.0163	0.0027	-0.0216	-0.0109	**<.0001**
Large Rural	-0.0849	0.0369	-0.1572	-0.0127	**0.0212**
Small Rural	0.0061	0.0468	-0.0856	0.0978	0.8965
Isolated Rural	-0.0757	0.0582	-0.1898	0.0384	0.1935
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0637	0.0292	1.0080	1.1225	**0.0245**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.3258	0.0659	1.2027	1.4613	**<.0001**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—88, length of stay for psychiatric hospital discharges varied over the study periods by IDNs. Length of stay ranged from 14 days to 17 days in the pre-Demonstration period, from 16 days to 18 days in the Demonstration period, and from 21 days to 30 days in the Demonstration Pandemic period.

Figure 6.1—88. Length of Stay for Psychiatric Hospital Discharges by IDN – Unadjusted
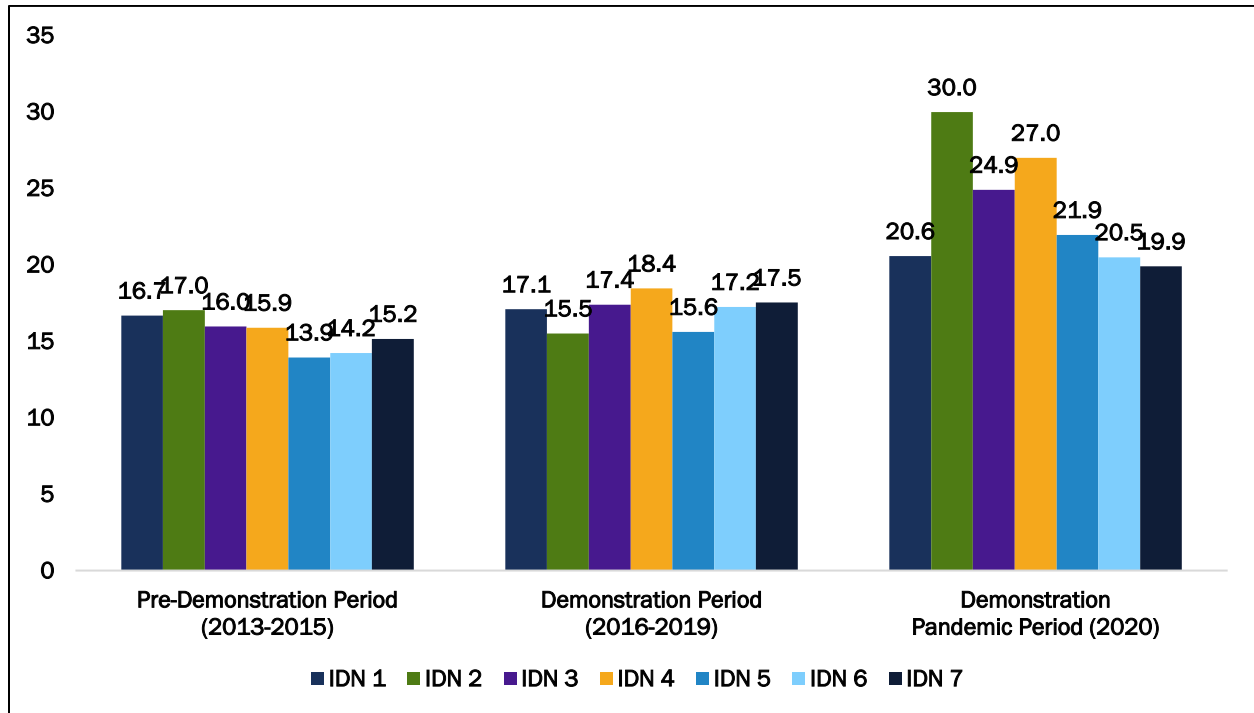
Unadjusted regression results (Table 6.1-99) show significant differences for some IDNs compared to IDN 2 in the rate of follow-up visits:

- IDN 5 and IDN 6 had significantly shorter average length of stays in the pre-Demonstration period.
- The average length of stay for IDN 4 was significantly longer in the Demonstration period.
- The average length of stay for Beneficiaries in IDN 1, IDN 6, and IDN 7 was shorter in the Demonstration Pandemic period.

Table 6.1-99. Length of Stay for Psychiatric Hospital Discharges by IDN

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase/ Decrease	IDN	Increase/ Decrease	IDN	Increase/ Decrease
Length of Stay for Psychiatric Hospital Discharges	IDN 5	▼	IDN 4	▲	IDN 1	▼
	IDN 6	▼			IDN 6	▼
					IDN 7	▼

After controlling for Beneficiary characteristics of interest results showed significant differences overtime in length of stay for psychiatric hospitalizations by IDN among the behavioral health

population (Table 6.1-100). Average length of stay for Beneficiaries in IDN 2 increased between the pre-Demonstration and Demonstration Pandemic periods by 54%.

Although average length of stay was shorter in the Demonstration when compared to the pre-Demonstration, the difference was not statistically significant. Compared to IDN 2:

- The rate of change in length of stay was significantly different between the pre-Demonstration and Demonstration periods in IDN 4, IDN 6, and IDN 7; and
- There were no significant differences in the rate of change among the IDNs (Table 6.1-100).

Table 6.1-100. Generalized Linear Models Estimating Length of Stay for Psychiatric Hospital Discharges - Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.8841	0.0622	1.538	**<.0001**
Time Interaction				
IDN 1	1.1419	0.2096	0.7669	0.1713
IDN 3	1.1948	0.0884	0.8424	0.2941
IDN 4	1.2704	**0.0058**	0.8919	0.4565
IDN 5	1.2199	0.0688	0.8133	0.2539
IDN 6	1.3121	**0.0041**	0.7841	0.1202
IDN 7	1.2850	**0.0127**	0.8368	0.3057

*Bold indicates significant (p<0.05)

6.1.5 Cost of Care

Cost of Care Key Findings

While there was a decrease in costs for all populations over the study period, in most cases the rate of decrease was significantly less for the behavioral health population.

- Total costs of ED Care increased for both populations; the increase was less for the behavioral health population.
- Data supporting the total cost of outpatient care was inconclusive, as costs decreased for the behavioral health population in the Demonstration period, but increased during the pandemic period.

6.1.5.1 Total Cost of All Care

An analysis of the total per member per month (PMPM) costs of all beneficiaries with a behavioral health disorder and Beneficiaries without behavioral health disorders, regardless of services setting, is summarized in this section. It was hypothesized that the DSRIP demonstration would reduce overall costs as well as costs for behavioral health related services through enhanced access and improved care integration and coordination.

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OVERVIEW OF COST ANALYSIS

Analysis of total cost of care in this evaluation utilizes a different methodology than budget neutrality calculations outlined in CMS State Medicaid Director Letter #18-009 *Budget Neutrality Policies for Section 1115(a) Medicaid Demonstration Projects.* Data transformations that make these results unique from NH Medicaid costs data reported elsewhere include:

- Costs data from claims and encounter data are aggregated by incurred or service date to the member study year level;
- Beneficiaries with ten or more months of full Medicaid coverage are included;
- Bivariate analysis include all Beneficiaries with 10 or more months full Medicaid coverages; Multivariate analyses are limited to the propensity matched sample and unmatched behavioral health sample.
- Costs related to behavioral health services are additionally limited to the behavioral health sample with 10 or more months of Medicaid eligibility;
- All costs were standardized using the medical consumer price index to 2016 dollars, the start of the DSRIP program. Standardized costs are presented as per member month costs, adjusting for the number of months members were enrolled with full Medicaid benefits in the study year; and
- With the exception of total costs, two-step analyses are preformed first predicting the likelihood of service use, with cost regressions limited to users of the service.

For a more detailed description of the source of costs data and analyses please refer to Sections 3 and 4 above.

</div>

When examining changes in PMPM costs over the course of the Demonstration, significant changes where found. Compared to the pre-Demonstration period:

- There was a decrease in the total PMPM cost between the pre-Demonstration and Demonstration periods from $391 to $353 PMPM for Beneficiaries without a behavioral health disorder; and from $1,140 to $1,092 for Beneficiaries with a behavioral health disorder; these changes were significant (Figure 6.1—89).

- Total PMPM costs decreased significantly between the pre-Demonstration and the Demonstration Pandemic period from $391 to $264 for Beneficiaries without a behavioral health disorder and from $1,140 to $952 for beneficiaries with a behavioral health disorder (Figure 6.1—89).

◆ Compared to Beneficiaries without behavioral health disorders, the total PMPM costs for all services were considerably more for Beneficiaries with behavioral health disorders in all three study periods.

Figure 6.1—89. Total Standardized Medicaid Costs (PMPM) of All Care
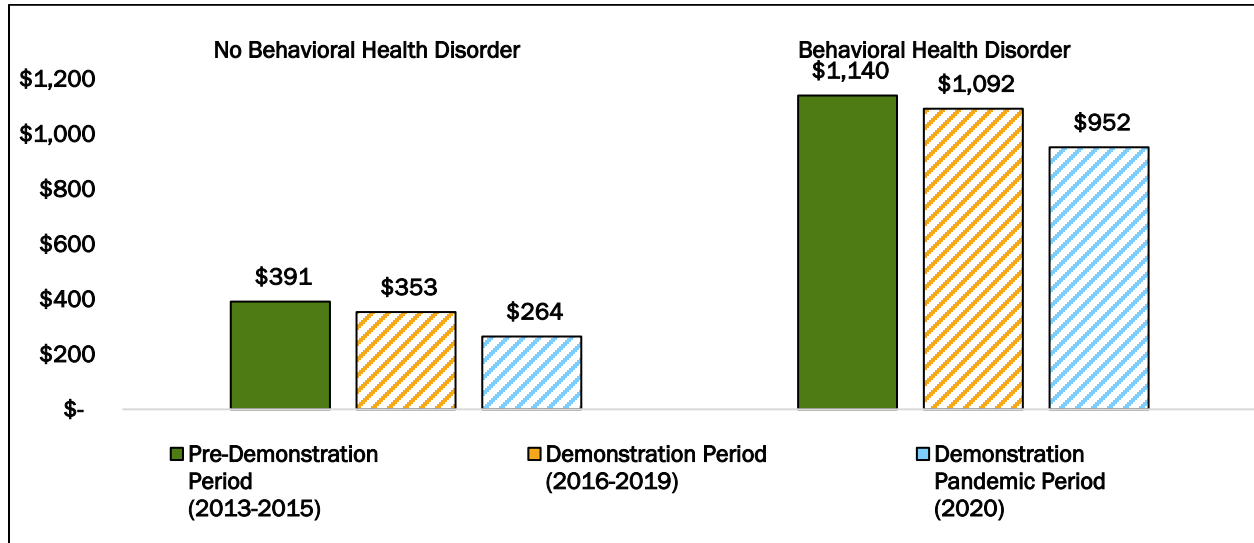
* Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

When examining PMPM costs for Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders, the total PMPM cost of all services decreased for both groups in the Demonstration periods (Table 6.1-101). Total PMPM costs for the non-behavioral health population were $178 less in the Demonstration period and $348 less in the Demonstration Pandemic period than in the pre-Demonstration period. Compared to the non-behavioral health:

◆ Total PMPM costs for Beneficiaries with behavioral health disorders were $292 more in the pre-Demonstration period, and this difference was significant;

◆ Although the behavioral health population also experienced a decrease in total costs, the decline was $113 less between the pre-Demonstration and Demonstration periods; and

◆ The decrease in costs among the behavioral health population was $203 less between the pre-Demonstration and Demonstration Pandemic periods (Table 6.1-101).

It is important to note that PMPM decreases from the Pre-Demonstration period to the Demonstration period may not be attributable to the Demonstration. In 2019, New Hampshire's Medicaid Expansion population transitioned from the Premium Assistance Program to the less costly Medicaid Care Management service delivery model, which may be a driver in decrease in PMPM costs in the post and pandemic periods.

Table 6.1-101. Generalized Linear Models Estimating Total Costs PMPM
Propensity Matched Sample

Number of Observations = 817,070					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$694.53	0.0110	6.5218	6.5647	**0.0000**
BH Flag	$292.09	9.3458	273.7706	310.4054	**0.0000**
Demonstration Period	-$178.22	7.2636	-192.46	-163.9866	**0.0000**
Demonstration Pandemic Period	-$348.10	11.8623	-371.355	-324.8551	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	$112.96	9.2760	94.77689	131.1381	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	$203.25	14.8831	174.0759	232.4167	**0.0000**

*Bold indicates significant (p<0.05)

Examining changes in PMPM costs for the behavioral health population only showed a significant change between the pre-Demonstration and Demonstration periods when controlling for Beneficiary characteristics of interest (Table 6.1-102). Among Beneficiaries with a behavioral health condition:

- The total PMPM costs increased significantly ($133) between the pre-Demonstration and Demonstration periods;
- As expected, total expenditures significantly declined during the pandemic (-$174);
- Significantly lower total costs were associated with being female, dual status, and the expansion group; and
- Significantly higher costs were associated with being older, having a higher ACG risk score, and residing in large or isolated rural area (Table 6.1-102)

Table 6.1-102. Generalized Linear Models Estimating Total Costs PMPM
*Unmatched Behavioral Health Group*

Number of observations = 80,802					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$1,227.67	249.07	7.056898	7.168843	**0.0000**
Demonstration Period	$133.06	21.1283	91.649	174.47	**0.0000**
Demonstration Pandemic Period	-$173.82	28.5894	-229.855	-117.786	**0.0000**
Age	$10.79	0.81218	9.19576	12.3794	**0.0000**
Female	-$422.67	25.3442	-472.346	-372.998	**0.0000**
Dual Eligible	-$100.02	36.9667	-172.478	-27.5714	**0.0070**
Expansion Population	-$445.89	28.7548	-502.245	-389.529	**0.0000**
ACG Risk Score	$71.32	1.70762	67.9755	74.6693	**0.0000**
Large Rural	$75.23	33.4561	9.6586	140.804	**0.0250**
Small Rural	-$68.18	39.3781	-145.365	8.99478	0.0830
Isolated Rural	$200.30	46.2655	109.625	290.983	**0.0000**

*Bold indicates significant (p<0.05)

Among Beneficiaries in all four chronic conditions' subpopulations (asthma, COPD, CVD, diabetes), without controlling for key factors such as age and gender, total overall cost decreased over time in most cases (Figure 6.1—90 and Figure 6.1—91). However, total costs for all services were higher for the behavioral health population in all chronic condition subpopulations across all measurement periods. For both the behavioral and non-behavioral population, beneficiaries with CVD had the highest cost for all services. Those with asthma had the least cost compared to the other chronic condition subpopulations (Figure 6.1—90 and Figure 6.1—91). Compared to the pre-Demonstration period:

- For Beneficiaries with a behavioral health condition(s) and COPD, total cost remained steady in the Demonstration period, and decreased significantly in the Demonstration Pandemic period;
- For Beneficiaries with a behavioral health condition(s) and CVD, total cost decreased significantly during the Demonstration and Demonstration Pandemic periods;
- For Beneficiaries with a behavioral health condition(s) and diabetes, total cost decreased significantly during the Demonstration and Pandemic periods.
- The CVD subpopulation with a behavioral health condition(s) saw the largest decrease in costs in the Demonstration period;
- Beneficiaries with COPD, CVD or Diabetes without behavioral health condition(s) had significant reductions in cost during the Demonstration and Demonstration Pandemic periods ; and
- Beneficiaries with CVD without a behavioral health condition(s) saw the most significant decrease in costs from the pre-Demonstration period to the Demonstration period

Figure 6.1—90. Total Cost of All Care by Chronic Conditions – Behavioral Health Subpopulation
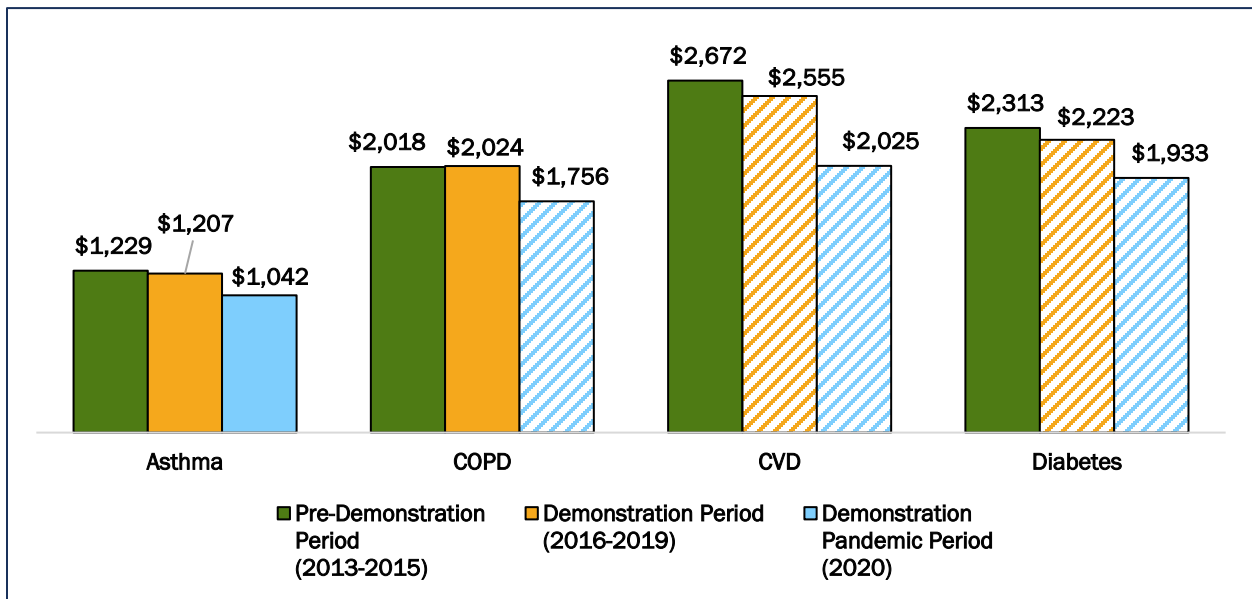
*Pattern within a column indicates significant change from Pre-Demonstration period

Figure 6.1—91. Total Cost of All Care by Chronic Conditions – Non-Behavioral Health Subpopulation
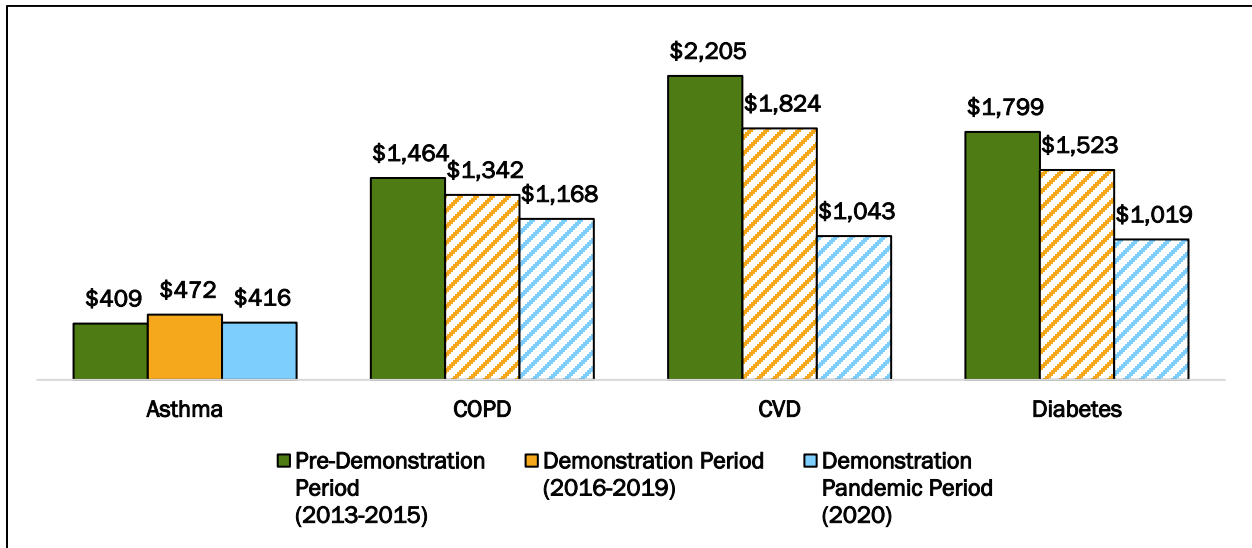
* Pattern within a column indicates significant change from Pre-Demonstration period

Table 6.1-103 shows the difference in total inpatient cost between Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders. Those with CVD and behavioral health disorders had the highest cost among the subpopulations in all study periods. Beneficiaries without a behavioral health condition and a chronic condition (COPD, CVD, and diabetes) experienced significant decreases in total PMPM costs in the Demonstration and Demonstration Pandemic periods. Compare to the Beneficiaries without behavioral health disorders:

- In the pre-Demonstration period, those who had a BH disorder and any one of the chronic conditions had significantly higher total PMPM costs than their non-Behavioral health counterparts.
- The decline in costs between the pre-Demonstration and Demonstration periods was smaller for the CVD and diabetes populations with a BH disorder. The same is true for the decline between the pre-Demonstration and pandemic periods.
- There was no significant difference in the change in costs for the asthma and COPD populations.

Table 6.1-103. Generalized Linear Models Estimating Changes in Total PMPM Cost of All Care Propensity Matched Sample by Chronic Conditions

Parameter	Asthma N = 17,097		COPD N = 26,350		CVD N = 27,387		Diabetes N= 54,190	
	Cost Change	P-Value	Cost Change	P-Value	Cost Change	P-Value	Cost Change	P-Value
Intercept	$483.99	0.0000	$1,472.24	0.0000	$2,215.00	0.0000	$1,819.01	0.0000
BH Flag	$680.39	0.0000	$482.99	0.0000	$352.51	0.0000	$376.99	0.0000
Demonstration Period	$72.62	0.5690	-$124.84	**0.0130**	-$403.02	**0.0000**	-$284.24	**0.0000**
Demonstration Pandemic Period	$47.44	0.6550	-$322.95	**0.0000**	-$1,263.72	**0.0000**	-$829.63	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	-$161.16	0.3090	$47.73	0.447	$186.29	**0.0030**	$146.94	**0.0010**
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	-$221.77	0.1020	-$29.54	0.738	$638.35	**0.0000**	$465.90	**0.0000**

*Bold indicates significant (p<0.05)

Table 6.1-104 shows costs for Beneficiaries with a behavioral health disorder and chronic conditions, after controlling for Beneficiary characteristics of interest among Beneficiaries with behavioral health conditions. Among the behavioral health population with chronic conditions:

- Beneficiaries with behavioral health conditions and CVD had the highest total cost PMPM costs in the pre-Demonstration period;
- Cost changes in the Demonstration period were not significantly different for any of the subpopulations;
- In the Demonstration Pandemic period, costs decreased significantly for the COPD, CVD, and diabetes subpopulations, with the biggest decrease occurring for those with CVD;
- Among those with COPD, CVD, and diabetes, female and dual eligible Beneficiaries had lower PMPM costs;
- In the asthma and diabetes populations, lower costs were associated with the Expansion group; and
- Higher total PMPM costs were associated with those with higher ACG risk scores in all the subpopulation groups.

Table 6.1-104. Generalized Linear Models Estimating Changes in Total PMPM Costs
Unmatched Behavioral Health Subpopulations by Chronic Conditions

Parameter	Asthma N = 17,097		COPD N = 26,350		CVD N = 27,387		Diabetes N= 54,190	
	Cost Change	P-Value	Cost Change	P-Value	Cost Change	P-Value	Cost Change	P-Value
Intercept	$1,742.02	0.0000	$919.84	0.0000	$2,018.93	0.0000	$1,937.23	0.0000
Demonstration Period	$281.06	0.1550	$34.98	0.5750	-$80.14	0.3450	$20.05	0.7230
Demonstration Pandemic Period	-$147.61	0.2830	-$234 .62	0.0090	-$894.30	0.0000	-$314.89	**0.0010**
Age	-$3.76	0.5280	$27.80	0.0000	$11.12	0.0160	$9.24	**0.0010**
Female	-$231.18	0.1950	-$303.07	0.0000	-$228.42	0.0140	-$428.93	**0.0000**
Dual Eligible	$168.14	0.3900	-$911.78	0.0000	-$829.70	0.0000	-$465.23	**0.0000**
Expansion Population	-$631.63	0.0000	-$31.12	0.7030	$87.74	0.4790	-$373.17	**0.0000**
ACG Risk Score	$88.62	0.0000	$65.30	0.0000	$71.79	0.0000	$65.34	**0.0000**
Large Rural	-$148.71	0.3500	$186.08	0.0660	$53.79	0.6870	$142.01	0.1700
Small Rural	-$295.57	0.0660	$28.35	0.8130	-$242.20	0.0590	-$158.08	0.1060
Isolated Rural	$202.68	0.3680	$263.30	0.0150	$228.90	0.0860	$573.11	**0.0000**

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—92 below, without controlling for Beneficiary characteristics of interest, total cost PMPM for Beneficiaries with behavioral health disorders declined over time. In the pre-Demonstration period, total cost ranged from $1,018 - $1,295 PMPM. This decreased to a range of $1,006 - $1,216 PMPM in the Demonstration period and to $861 - $1,127 PMPM in the Demonstration Pandemic period. Compared to IDN 2, all other IDNs had significantly lower costs in the pre-Demonstration, Demonstration, and Demonstration Pandemic period.

Figure 6.1—92. Total PMPM Cost of Care by IDN - Behavioral Health Population
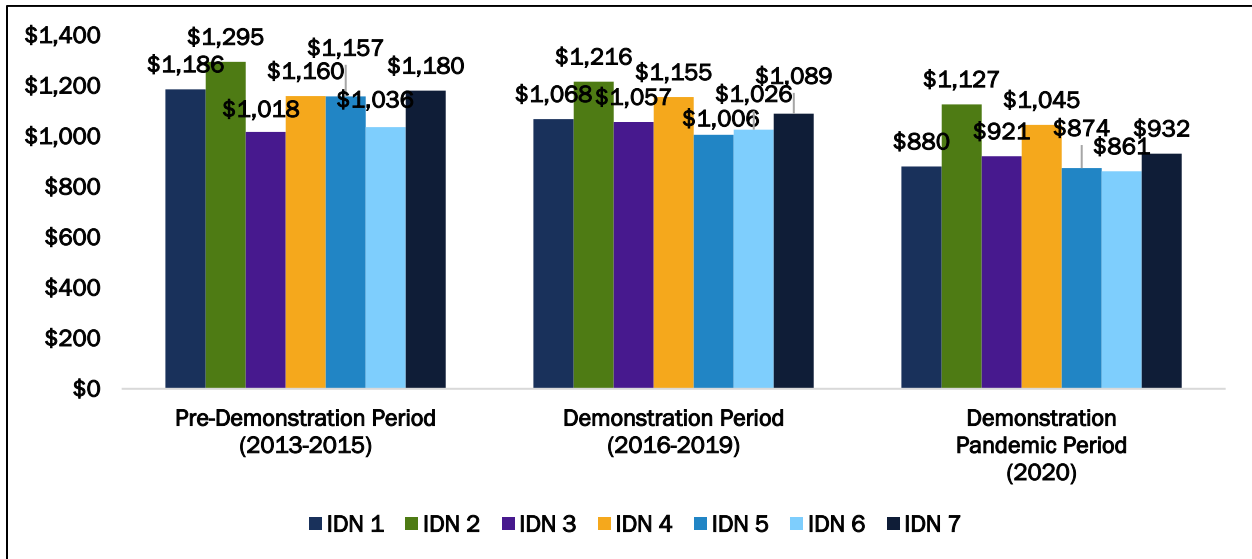

Table 6.1-105. Total PMPM Cost of All Care for IDNs with Significant Differences Compared to IDN

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Total Cost of Care	IDN 1	▼	IDN 1	▼	IDN 1	▼
	IDN 3	▼	IDN 3	▼	IDN 3	▼
	IDN 4	▼	IDN 4	▼	IDN 4	▼
	IDN 5	▼	IDN 5	▼	IDN 5	▼
	IDN 6	▼	IDN 6	▼	IDN 6	▼
	IDN 7	▼	IDN 7	▼	IDN 7	▼

2– Behavioral Health Population

There were significant differences in total PMPM costs for Beneficiaries with behavioral health conditions, controlling for Beneficiary characteristics of interest, in IDN rates across the Demonstration period compared to IDN 2 (Figure 6.1—93, Figure 6.1—94, Table 6.1-106). Total PMPM costs for IDN 2 did not change significantly between the pre-Demonstration and Demonstration periods, but PMPM costs did decline by $114 between the pre-Demonstration and Demonstration Pandemic periods. Compared to IDN 2:

◆ Beneficiaries with behavioral health conditions in IDN 3, IDN 4, and IDN 6 experienced a significant increase in total PMPM costs between the pre-Demonstration and Demonstration periods while IDN 2 remained steady;

◆ Total PMPM costs in IDN 1 significantly declined among members with behavioral health conditions between the pre-Demonstration and Demonstration Pandemic periods; and

◆ Beneficiaries with behavioral health conditions in IDN 3, IDN 4, and IDN 6 experienced a statistically smaller decline in total PMPM costs between the pre-Demonstration and Demonstration Pandemic periods.

Figure 6.1—93. Results of Generalized Linear Model Estimating Change in Total PMPM Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
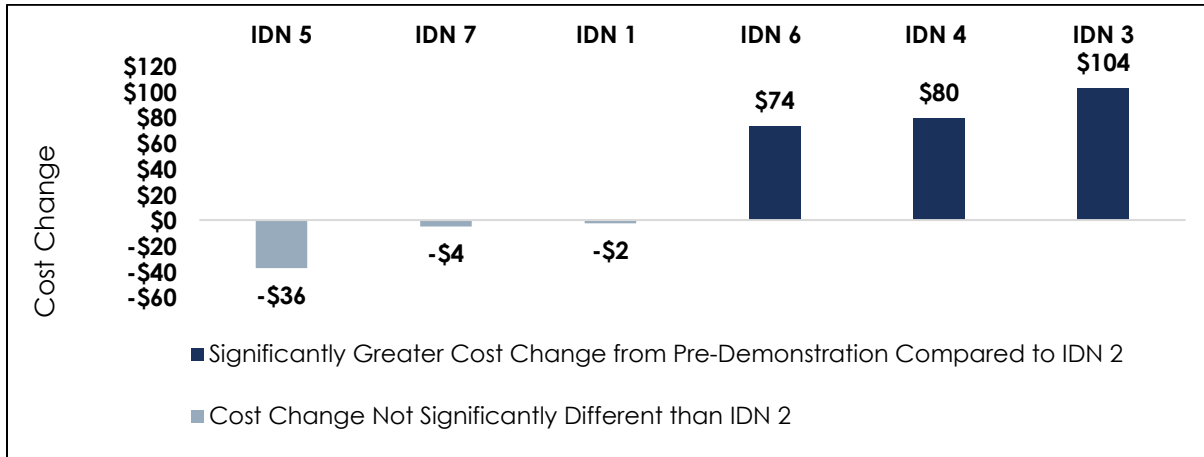
Figure 6.1—94. Results of Generalized Linear Model Estimating Change in Total PMPM Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
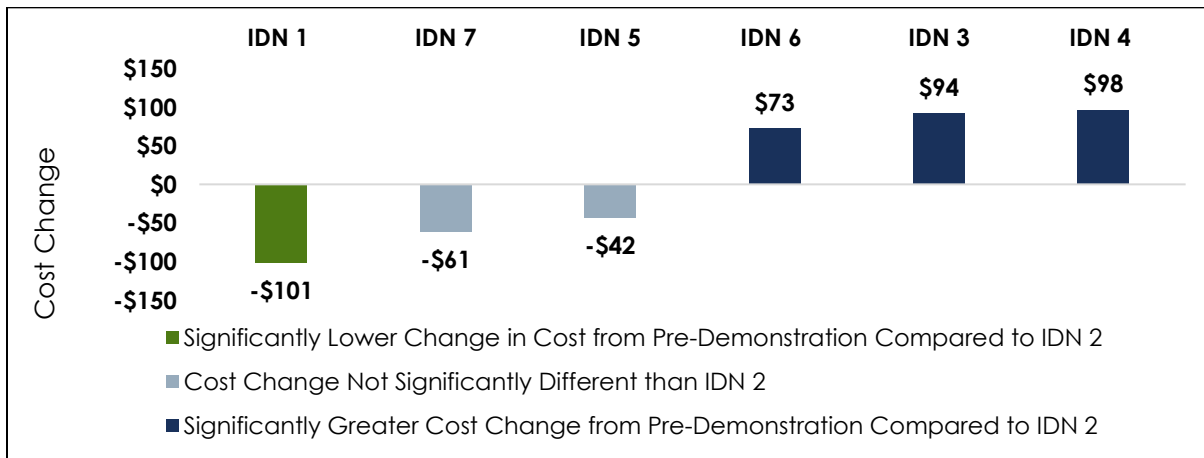
Table 6.1-106. Generalized Linear Models (GLM) Estimating Adjusted Total PMPM Costs for IDNs

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Cost Change	P-Value	Cost Change	P-Value
IDN 2	-$2.74	0.8810	-$114.01	**0.0000**
Time Interaction				
IDN 1	-$1.55	0.9510	-$100.85	**0.0060**
IDN 3	$103.56	**0.0000**	$93.58	**0.0100**
IDN 4	$79.94	**0.0000**	$97.68	**0.0030**
IDN 5	-$36.41	0.1620	-$42.37	0.3070
IDN 6	$73.89	**0.0010**	$73.32	**0.0250**
IDN 7	-$3.96	0.8800	-$61.11	0.1110

*Bold indicates significant (p<0.05)

6.1.5.2 Total Cost of All Inpatient Care

An estimate of total cost PMPM for inpatient care was analyzed to understand changes in cost over the study period. Costs were compared in the pre-Demonstration, Demonstration, and Demonstration Pandemic periods between Beneficiaries with behavioral health and without behavioral health conditions (Figure 6.1—95). Results showed:

- ◆ In the Demonstration period, inpatient costs increased for both Beneficiaries with a behavioral health disorder and for those without a behavioral health disorder.
- ◆ In the Demonstration Pandemic period, inpatient costs decreased for both populations. However, this decrease was only significant among individuals with a behavioral health condition.
- ◆ Beneficiaries with a behavioral health disorder had higher inpatient care costs across the study period.
- ◆ The inpatient cost increase in the Demonstration period in the behavioral health population was larger than that experienced by the Beneficiaries without a behavioral health condition.

Figure 6.1—95. Total Standardized Medicaid PMPM Inpatient Costs
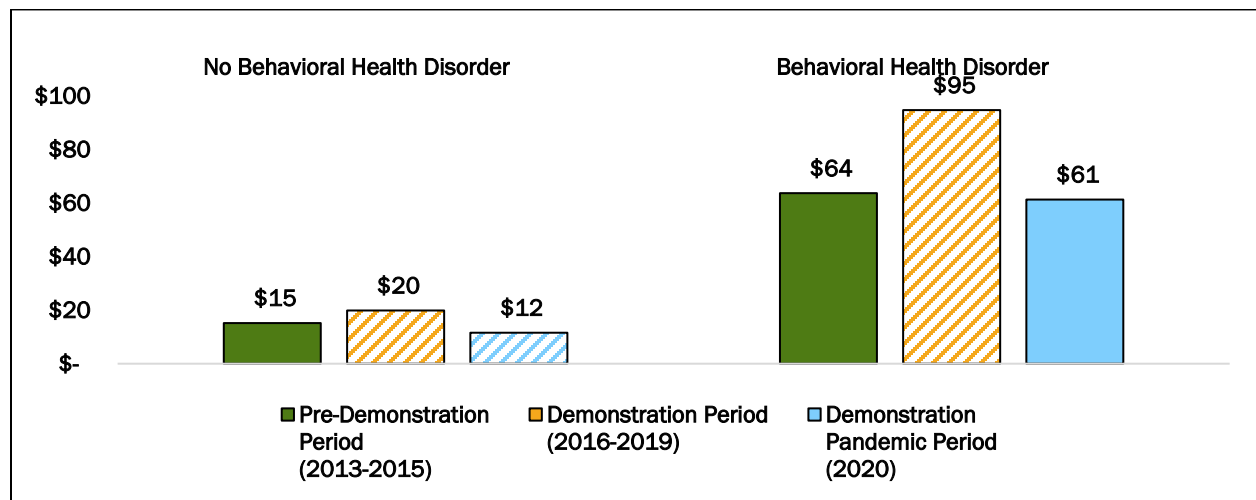
*Pattern within a column indicates a significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

Analyses of costs for services that are not used by a large percentage of the population, like inpatient services, are separated into two parts. The first part of the analysis explores the likelihood of use, and the second part estimates PMPM costs for those who have used the service (See Section 4.2 for more details on cost analyses related costs).

Table 6.1-107 below presents the results of the analysis of the likelihood of inpatient admission for Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders. Compared to members without behavioral health conditions, Beneficiaries with behavioral health disorders were:

   🔶 16% more likely to have an inpatient admission than their counterparts in the pre-Demonstration.

   🔶 Beneficiaries without a behavioral health disorder had 19% lower odds of an inpatient admission in the Demonstration period.

   🔶 Beneficiaries without a behavioral health disorder had 26% lower odds of an inpatient admission in the pandemic period.

Table 6.1-107 Logistic Regression Estimating the Likelihood of Having Any Inpatient Admission Propensity Matched Sample

Number of observations = 817,070					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Intercept	1.08	0.0009	0.0795	0.0832	**<0.0000**
BH Flag	1.16	0.0179	1.1270	1.1973	**<0.0000**
Demonstration Period	0.81	0.0113	0.7872	0.8318	**<0.0000**
Demonstration Pandemic Period	0.74	0.0151	0.7143	0.7735	**<0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	1.26	0.0230	1.2010	1.3036	**<0.0000**
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	1.20	0.0327	1.1391	1.2673	**<0.0000**

*Bold indicates significant (p<0.05)

Table 6.1-108 presents the estimated total costs for inpatient care for Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders. Comparisons overtime and between the groups found:

   🔶 Both groups experienced an increase in inpatient admission costs in the Demonstration and Demonstration Pandemic periods.

   🔶 In the Demonstration period, inpatient admission costs increased significantly, by $191, for Beneficiaries without behavioral health conditions compared to only $144 for those without.

   🔶 The increase in inpatient admission costs in the Demonstration pandemic period among Beneficiaries without a behavioral health disorder was not significant.

   🔶 Inpatient PMPM costs among Beneficiaries with a behavioral health disorder were $211 more than for those without in the pre-Demonstration period.

   🔶 Costs among Beneficiaries with a behavioral health condition increased by a smaller amount in the post period, but the difference in the change was not significant.

   🔶 There was no significant difference in inpatients costs from the pre-Demonstration to the Demonstration or Demonstration Pandemic periods.

Table 6.1-108. Generalized Linear Models (GLM) Estimating Inpatient Costs PMPM
Propensity Matched Sample

Number of Observations = 61,637					
	Estimate	Standard Error	95% Confidence Limits		P-Value
BH Flag	$210.99	16.0903	179.4534	242.5262	**<0.0000**
Demonstration Period	$190.97	24.0212	143.8887	238.0500	**<0.0000**
Demonstration Pandemic Period	$27.44	34.7337	-40.6331	95.5204	0.4290
BH vs Non-BH Time Interaction (Demonstration Period)	-$47.32	25.7588	-97.8072	3.1654	0.0660
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	-$1.03	43.9856	-87.2382	85.1822	0.9810

*Bold indicates significant (p<0.05)

Among Beneficiaries with a behavioral health disorder, results showed several significant differences in the likelihood of experiencing an inpatient admission when controlling for key factors such as age and gender (Table 6.1-109). Among Beneficiaries with a behavioral health disorder:

- In the Demonstration period, the odds of having an inpatient admission were the same as in the pre-Demonstration period.
- In the Demonstration Pandemic period, the odds of having an inpatient admission decreased by 18%.
- The Expansion population and those with higher ACG risk scores had a greater likelihood of experiencing an inpatient admission.
- Fewer inpatient admissions were associated with being female, dual eligibility, and residing in small and isolated rural areas.

Table 6.1-109. Logistic Regression Estimating the Likelihood of Having Any Inpatient Admission Behavioral Health Group (Adjusted)

Number of Observations = 80,802					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Intercept	1.27	1.0082	1.2465	1.2871	0.0000
Demonstration Period	1.00	0.0204	0.9584	1.0384	0.9090
Demonstration Pandemic Period	0.82	0.0235	0.7797	0.87190	**0.0000**
Age	1.00	0.0007	0.9980	1.0006	0.2960
Female	0.94	0.0184	0.9041	0.9764	**0.0010**
Dual Eligible	0.76	0.0202	0.7246	0.8038	**0.0000**
Expansion Population	1.11	0.0233	1.0702	1.1616	**0.0000**
ACG Risk Score	1.10	0.0017	1.0938	1.1004	**0.0000**
Large Rural	0.98	0.0252	0.9313	1.0304	0.4250
Small Rural	0.84	0.0248	0.7887	0.8859	**0.0000**
Isolated Rural	0.81	0.0297	0.7563	0.8726	**0.0000**

*Bold indicates significant (p<0.05)

Among Beneficiaries with a behavioral health disorder and chronic conditions, results showed significant changes in the PMPM costs associated with inpatient admissions when controlling for key factors such as age and gender (Table 6.1-110). Among Beneficiaries with a behavioral health condition:

- PMPM inpatient admission cost increased significantly in the Demonstration when compared to the pre-Demonstration period by $44.
- In the Demonstration Pandemic period, PMPM inpatient admission cost decreased significantly when compared to the pre-Demonstration period by $187
- Being female and dual eligible status were associated with lower PMPM inpatient admission costs.
- Beneficiaries in the expansion group and those with higher ACG risk scores were associated with higher PMPM inpatient admission costs.

Table 6.1-110. Generalized Linear Models (GLM) Estimating PMPM Inpatient Admission Costs Unmatched Behavioral Health Group (Adjusted)

Number of observations = 21,379					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$636.04	1.0623	564.9600	716.0700	0.0000
Demonstration Period	$44.00	21.1040	2.6411	85.3656	**0.0370**
Demonstration Pandemic Period	-$187.15	33.9570	-253.7014	-120.5923	0.0000
Age	-$0.35	0.7145	-1.7478	1.0529	0.6270
Female	-$121.62	20.2240	-161.2628	-81.9964	0.0000
Dual Eligible	-$823.07	24.5742	-871.2306	-774.9015	0.0000
Expansion Population	$292.09	21.6052	249.7480	334.4390	0.0000
ACG Risk Score	$20.89	1.4007	18.1492	23.6397	0.0000
Large Rural	$42.41	32.4762	-21.2378	106.0668	0.1920
Small Rural	-$35.42	33.03256	-100.1629	29.3223	0.2840
Isolated Rural	-$16.99	38.79929	-93.0402	59.05 02	0.6610

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—96 below, without controlling for Beneficiary characteristics of interest, inpatient cost increased for beneficiaries with behavioral health disorders in all IDNs between the pre-Demonstration and Demonstration periods. Inpatient costs decreased for IDN 1, IDN 2, and IDN 6 between the pre-Demonstration and pandemic periods and increased for IDN 3 and IDN 4. In the pre-Demonstration period cost ranged from $54 to $71 PMPM and in the Demonstration period with ranges from $77 - $103 PMPM. The inpatient costs for individuals with behavioral health conditions ranged of $55 - $72 PMPM in the Demonstration Pandemic period, which was similar to pre-Demonstration period inpatient service costs.

Figure 6.1—96. Total Inpatient Cost of Care by IDN - Behavioral Health Population
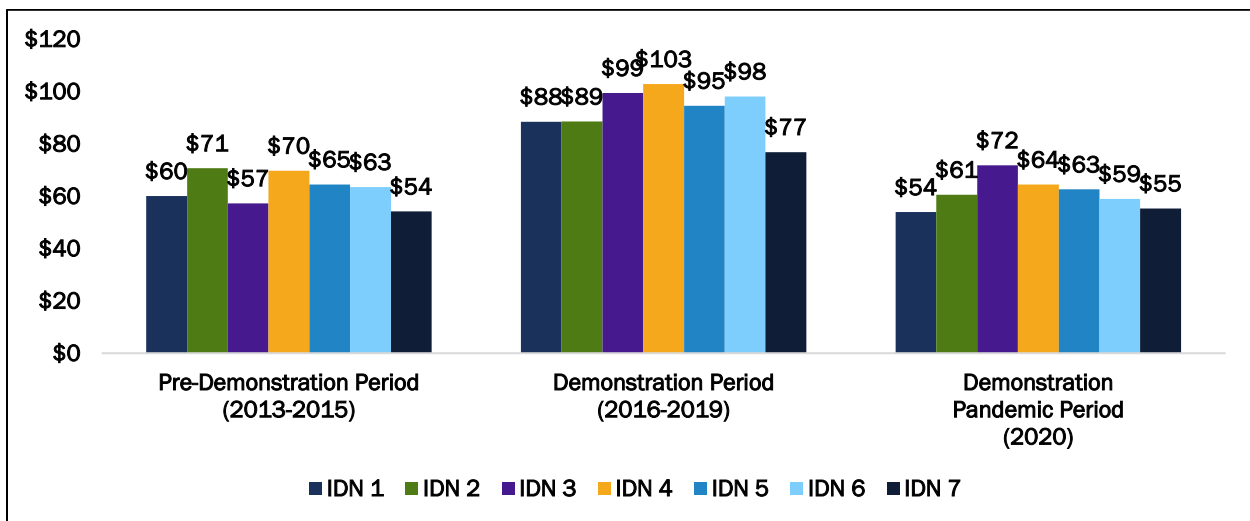
There were some significant differences in IDN inpatient costs for Beneficiaries with behavioral health conditions, without controlling for Beneficiary characteristics, across the Demonstration periods when compared to IDN 2 (Table 6.1-111). Compared to IDN 2:

- Beneficiaries with behavioral health conditions experienced significantly lower inpatient costs in the pre-Demonstration period in IDN 1, IDN 3 and IDN 7;
- Beneficiaries with behavioral health conditions in IDN 4 had significantly higher costs while those in IDN 7 had significantly lower costs in the Demonstration; and
- There were no significant differences in the Demonstration Pandemic period

Table 6.1-111. Total Inpatient Cost of Care for IDNs with Significant Differences Compared to IDN2 by Period – Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Total inpatient cost PMPM	IDN 1	▼	IDN 4	▲
	IDN 3	▼	IDN 7	▼
	IDN 7	▼		

After controlling for Beneficiary characteristics of interest, results showed significant differences over time in inpatient costs by IDN (Table 6.1-112). The odds of experiencing an inpatient admission between the pre-Demonstration and Demonstration periods for Beneficiaries in IDN 2 was not significantly different. However, the likelihood of inpatient care declined by 29% between the pre- and Demonstration Pandemic periods (Figure 6.1—97). Compared to IDN 2:

- The rate of change between the pre- and Demonstration periods was significantly different for IDN 3 and IDN 4 (Figure 6.1—97).
- The odds of an inpatient admission declined for IDN 3, IDN 4, and IDN 6 between the pre and pandemic periods, but the decrease in odds was significantly smaller than IDN 2 (Figure 6.1—98).

Figure 6.1—97. Logistic Regression Estimating The Likelihood of <u>Any Inpatient Care</u> Across IDNs Behavioral Health Population Relative to IDN 2 (Demonstration Period)
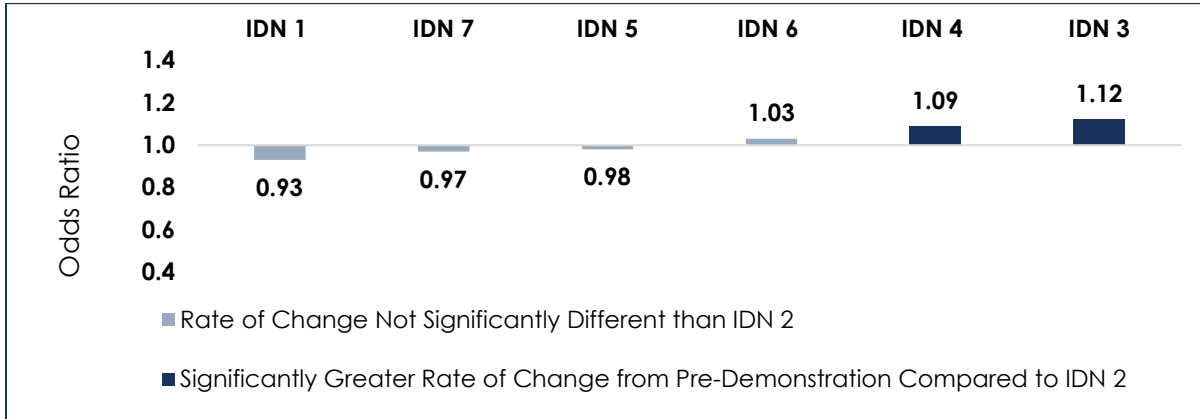

Figure 6.1—98. Logistic Regression Estimating The Likelihood of <u>Any Inpatient Care</u> Across IDNs Behavioral Health Population Relative to IDN 2 (Demonstration Pandemic Period)
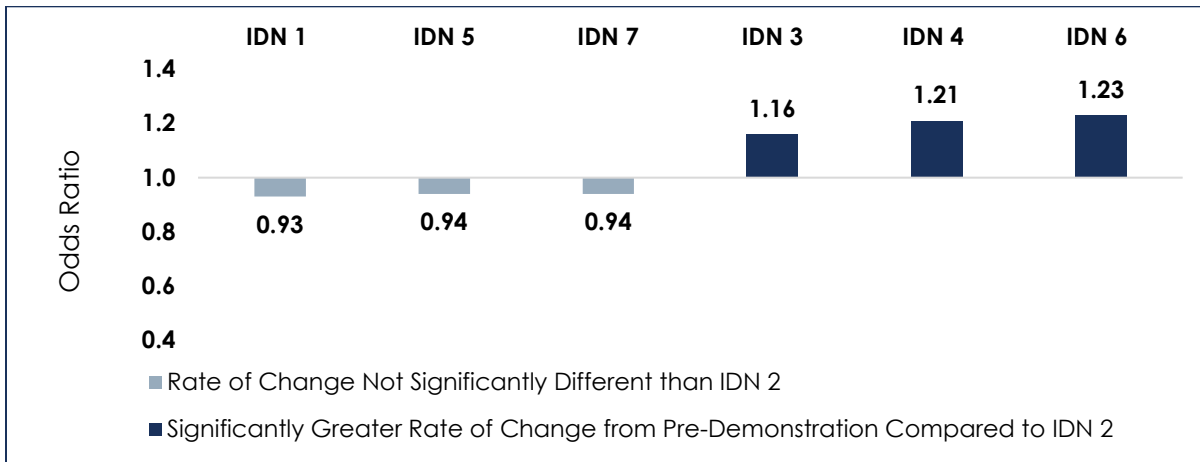
Table 6.1-112. Logistic Regression Estimating the Likelihood of <u>Any Inpatient Care</u> across IDNs - Behavioral Health Population Relative to IDN 2

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.93	0.0530	0.71	**0.0000**
Time Interaction				
IDN 1	0.93	0.1280	0.93	0.2870
IDN 3	1.11	0.0180	1.16	**0.0310**
IDN 4	1.09	0.0320	1.20	**0.0020**
IDN 5	0.98	0.6540	0.94	0.4360
IDN 6	1.03	0.4760	1.23	**0.0010**
IDN 7	0.97	0.5480	0.94	0.4400

*Bold indicates significant (p<0.05)

After excluding Beneficiaries with no inpatient admissions and controlling for Beneficiary characteristics of interest, results showed significant differences over time in inpatient costs by IDN (Table 6.1-113). The difference in inpatient costs between the pre-Demonstration and Demonstration periods was not significantly different for Beneficiaries in IDN 2. However, inpatient costs decreased significantly by $192 between the pre-Demonstration and Demonstration Pandemic periods. Compared to IDN 2:

All other IDNs a significant increase in inpatient costs (Figure 6.1—99); and

◆ There were no statistically significant differences in inpatient costs between the pre-Demonstration period and the Demonstration and Demonstration Pandemic periods (Figure 6.1—100).

Figure 6.1—99 Results of Generalized Linear Model Estimating Change in Total Inpatient Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
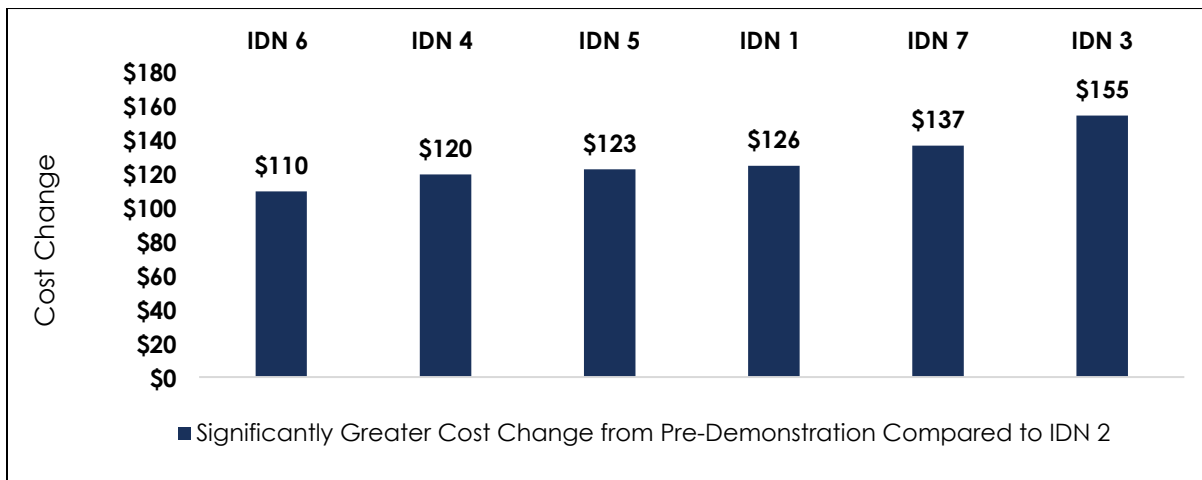
Figure 6.1—100. Results of Generalized Linear Model Estimating Change Total Inpatient Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
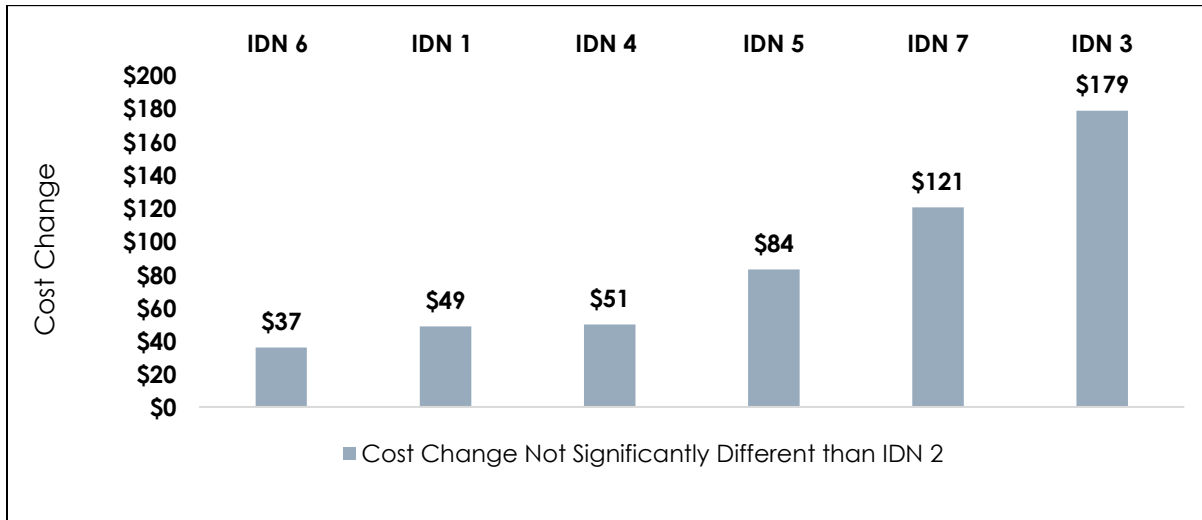

Table 6.1-113 Generalized Linear Models Estimating Adjusted PMPM Inpatient Care Costs Compared to IDN 2 – Adjusted Behavioral Health Population

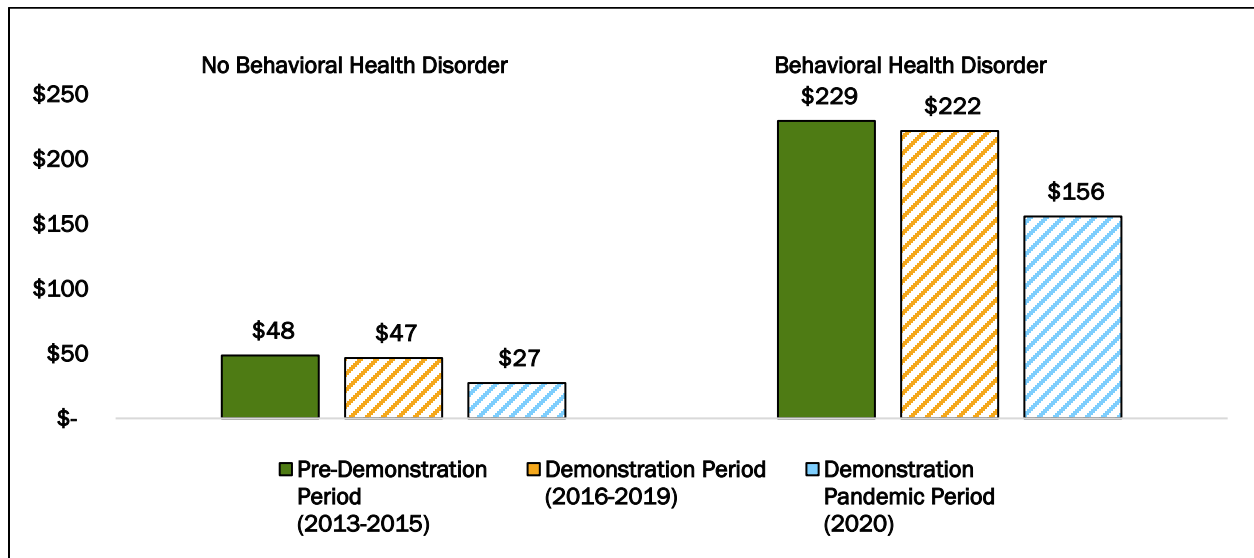| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Cost Change	P-Value	Cost Change	P-Value
IDN 2	-$73.24	0.1130	-$191.51	**0.0170**
Time Interaction				
IDN 1	$125.50	**0.0470**	$49.43	0.6040
IDN 3	$155.04	**0.0040**	$179.15	0.0810
IDN 4	$120.40	**0.0330**	$50.60	0.5660
IDN 5	$123.47	**0.0320**	83.62	0.3980
IDN 6	$110.31	**0.0350**	$36.74	0.6670
IDN 7	$137.37	**0.0150**	$121.04	0.2800

*Bold indicates significant (p<0.05)

6.1.5.3 Total Cost of All Outpatient Care

An analysis of the PMPM cost of outpatient care was evaluated for Beneficiaries with a behavioral health disorder and those without behavioral health disorders. Costs were compared in the pre-Demonstration, Demonstration, and Demonstration Pandemic periods between Beneficiaries with and without behavioral health disorders and are shown in Figure 6.1—101 below. Results show significant decreases in costs for both groups over the study period including:

 The total PMPM cost for outpatient visits was significantly higher among Beneficiaries with behavioral health disorders over the study period. In the Demonstration period, total outpatient cost decreased significantly for Beneficiaries with and without behavioral health disorders;
 During the Demonstration Pandemic period, total outpatient cost decreased for both the behavioral and non-behavioral health populations; and
 Costs decreased more among Beneficiaries with behavioral health disorders in the post- and Demonstration Pandemic periods compared to those without.

Figure 6.1—101 Total Standardized Medicaid PMPM Outpatient Costs

* Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

Table 6.1-114 presents the estimated total PMPM outpatient costs for Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders. The non-behavioral health sample was significantly less likely to have an outpatient visit in the Demonstration and Demonstration Pandemic periods when compared to the pre-Demonstration period. Compared to the non-behavioral health disorder group, Beneficiaries with behavioral health disorders:

 Were 3.7 times more likely to have an outpatient visit in the pre-Demonstration period;

◆ Were also less likely in the post and pandemic periods to have outpatient visits; and
◆ Had a smaller rate of decline in both the post- and Demonstration Pandemic periods.

Table 6.1-114 Logistic Regression Estimating the Likelihood of Having Any Outpatient Visit

Propensity Matched Sample (N= 817,070)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Intercept	5.18	0.0453	5.0952	5.2730	0.0000
BH Flag	3.74	0.0638	3.6167	3.8668	0.0000
Demonstration Period	0.58	0.0055	0.5647	0.5864	**0.0000**
Demonstration Pandemic Period	0.33	0.0039	0.3266	0.3420	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	1.40	0.0267	1.3459	1.4507	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	1.47	0.0337	1.4081	1.5403	**0.0000**

*Bold indicates significant (p<0.05)

Among Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders with at least one outpatient visit, the total PMPM cost of outpatient care for those who had at least one outpatient care visit are shown in Table 6.1-115 below. Compared to the pre-Demonstration period:

◆ In the Demonstration period, outpatient total cost decreased slightly by $2 for the BH but there was a five-fold increase in total outpatient cost among the non-behavioral health population ($11).
◆ During the Demonstration pandemic period cost decreased for both populations specifically $42 for the behavioral health population and $26 for the non-behavioral health population.
◆ Compared to the non-Behavioral Health group, the behavioral health population's cost was $156 PMPM more than the non-behavioral health population in the pre-Demonstration period;
◆ The behavioral health population had a small decrease in costs in the Demonstration period compared to an increase for the non-behavioral health sample; and
◆ The behavioral health population experienced a greater decline in costs between the pre-Demonstration and Demonstration Pandemic periods comparted to the non-behavioral health population.

Table 6.1-115. Generalized Linear Model (GLM) Estimating PMPM Outpatient Costs

Propensity Matched Sample (N= 260,944)					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$117.68	0.0100	4.7483	4.7876	**0.0000**
BH Flag	$155.56	2.8625	149.95	161.17	**0.0000**
Demonstration Period	$11.14	2.3115	6.6091	15.6698	**0.0000**
Demonstration Pandemic Period	-$26.03	3.9330	-33.7357	-18.3188	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	-$12.82	3.1443	-18.9800	-6.6548	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	-$15.82	5.1765	-25.9642	-5.6728	**0.0020**

*Bold indicates significant (p<0.05)

Table 6.1-116 below shows the likelihood of having any outpatient visit among Beneficiaries with behavioral health disorders controlling for patient characteristics. Among Beneficiaries with behavioral health disorders:

- There was no statistically significant difference in the odds of having an outpatient visit in the Demonstration period compared to the pre-Demonstration period;
- Beneficiaries with behavioral health conditions were significantly less likely (15%) to have an outpatient visit in the Demonstration Pandemic period compared to the pre-Demonstration period;
- A greater likelihood of having an outpatient visit was associated with being female, residing in isolated rural areas, and having a higher ACG risk scores; and
- Duals and expansion groups were less likely to have an outpatient care visit.

Table 6.1-116. Logistic Regression Estimating the Likelihood of Having Any Outpatient Visit – Unmatched Behavioral Health Group

Unmatched Sample (N= 80,802)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Demonstration Period	1.10	0.0621	0.9828	1.2269	0.0980
Demonstration Pandemic Period	0.85	0.0618	0.7349	0.9781	**0.0240**
Age	1.00	0.0019	0.9941	1.0018	0.2880
Female	2.12	0.1001	1.9309	2.3239	**0.0000**
Dual Eligible	0.74	0.0479	0.6541	0.8426	**0.0000**
Expansion Population	0.48	0.0267	0.4294	0.5344	**0.0000**
ACG Risk score	1.10	0.0104	1.0809	1.1218	**0.0000**
Large Rural	0.90	0.0595	0.7952	1.0291	0.1270
Small Rural	0.89	0.0667	0.7690	1.0312	0.1210
Isolated	1.25	0.1299	1.0227	1.5352	**0.0300**

*Bold indicates significant (p<0.05)

Table 6.1-117shows PMPM outpatient costs for Beneficiaries with behavioral health disorders controlling for patient characteristics. Among Beneficiaries with behavioral health disorders:

- ⬥ Compared to the pre-Demonstration period, costs decreased by $105 during the Demonstration pandemic period;
- ⬥ Being female, dual eligible, younger, and residing in small rural areas were associated with lower costs; and
- ⬥ Higher ACG risk scores were associated with higher costs.

Table 6.1-117 Generalized Linear Models (GLM) Estimating Outpatient Costs PMPM Unmatched Behavioral Health Sample

Number of Observations = 78,833					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$360.81	1.3963	337.9500	385.2100	0.0000
Demonstration Period	-$0.27	5.7184	-11.4781	10.9375	0.9620
Demonstration Pandemic Period	-$105.05	8.2157	-121.1548	-88.9498	0.0000
Age	-$1.27	0.2427	-1.7445	-0.7932	0.0000
Dual Eligible	-$33.53	8.3767	-49.9456	-17.1094	0.0000
Expansion Population	-$38.97	11.9340	-62.3575	-15.5771	0.0010
ACG Risk Score	$3.95	6.4686	-8.7304	16.6261	0.5420
Large Rural	$16.09	0.5094	15.0934	17.0903	0.0000
Small Rural	$13.88	12.1951	-10.0206	37.7834	0.2550
Isolated Rural	-$20.64	10.5479	-41.3151	0.0321	0.0500
Intercept	-$19.96	16.8782	-53.0401	13.1214	0.2370

*Bold indicates significant (p<0.05)

Comparisons of total outpatient PMPM costs by IDN showed differences over time and by region. As shown in Figure 6.1—102, the outpatient costs increased for Beneficiaries with behavioral health disorders in IDN 3 and IDN 4 but decreased in IDNs 1,2,5,6, and 7 in the Demonstration period. During the Demonstration Pandemic period, costs decreased across all the IDNs. IDN 2 had the highest costs in all study periods.

In the pre-Demonstration period costs ranged from $201 to $319 with the lowest cost occurring in IDN 3. This decreased in the post- Demonstration period with costs ranging from $200 - $280 with the lowest cost occurring in IDN 1. The cost range in the Demonstration Pandemic period also declined and had a range of $131 - $201, with the lowest cost occurring in IDN 1.

Figure 6.1—102. Total Outpatient Cost of Care by IDN - Behavioral Health Population (Unadjusted)
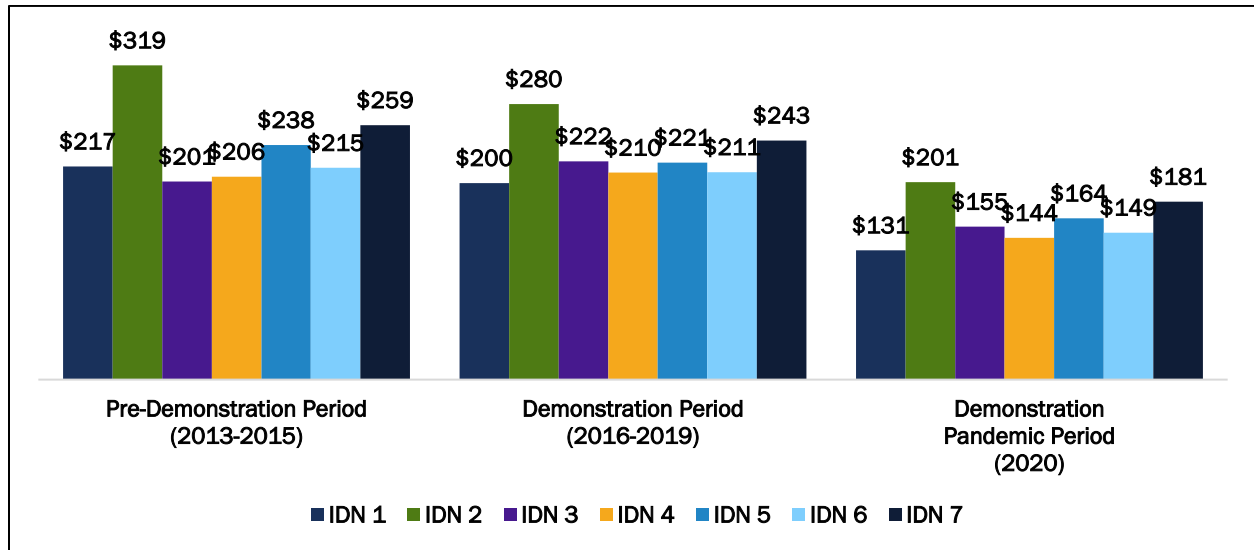
Results are shown in Table 6.1-118 for IDNs with significant differences compared to IDN 2. Compared to IDN 2:

❖ All IDNs had lower outpatient costs in the pre-Demonstration, Demonstration, and Demonstration Pandemic periods.

Table 6.1-118. Total Cost of All Outpatient Care for IDNs with Significant Differences Compared to IDN2– Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Outpatient PMPM	IDN 1	▼	IDN 1	▼	IDN 1	▼
	IDN 3	▼	IDN 3	▼	IDN 3	▼
	IDN 4	▼	IDN 4	▼	IDN 4	▼
	IDN 5	▼	IDN 5	▼	IDN 5	▼
	IDN 6	▼	IDN 6	▼	IDN 6	▼
	IDN 7	▼	IDN 7	▼	IDN 7	▼

After controlling for Beneficiary characteristics, results showed significant differences over time (Table 6.1-119). The odds of an outpatient visit for Beneficiaries in IDN 2 decreased significantly by 41% between the pre-Demonstration and Demonstration Pandemic periods. The change between the pre-Demonstration and Demonstration periods was not significant. Compared to IDN 2 (Figure 6.1—103, Figure 6.1—104):

➕ The rate of change for IDN 3 between the pre-Demonstration and Demonstration period was significantly different with the likelihood of an outpatient visit increasing slightly in the Demonstration period compared to a small decline in IDN 2.

➕ The rate of change for IDN 3 between the pre-Demonstration and Demonstration Pandemic periods was also significantly different with the likelihood of an outpatient visit decreased less than that of IDN 2.

Figure 6.1—103 Logistic Regression Estimating The Likelihood of Any Outpatient Visit Across IDNs - Behavioral Health Population Relative to IDN 2 (Demonstration Period)
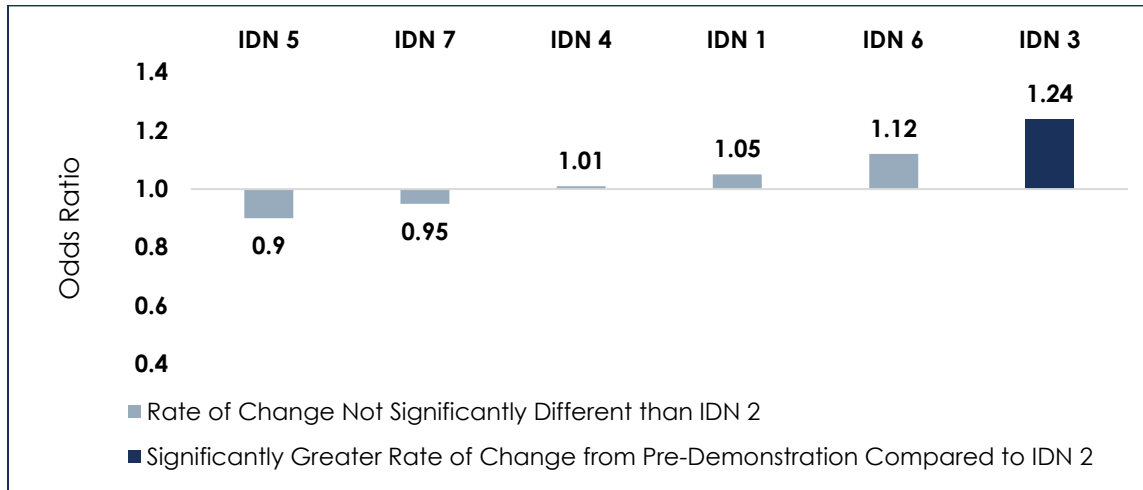
Figure 6.1—104 Logistic Regression Estimating The Likelihood of Any Outpatient Visit Across IDNs - Behavioral Health Population Relative to IDN 2 (Demonstration Pandemic Period)
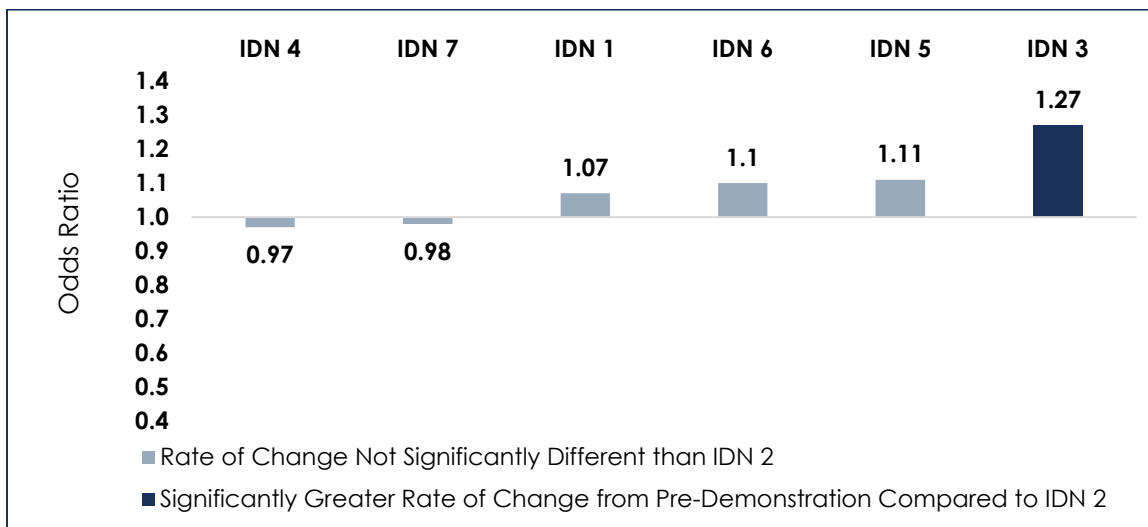
Table 6.1-119 Logistic Regression Estimating The Likelihood of Any Outpatient Care Across IDNs - Behavioral Health Population Relative to IDN 2

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.94	0.1850	0.59	**0.000**
Time Interaction				
IDN 1	1.05	0.4310	1.07	0.4020
IDN 3	1.23	0.0010	1.27	**0.0030**
IDN 4	1.00	0.8910	0.97	0.6860
IDN 5	0.90	0.1450	1.11	0.2130
IDN 6	1.11	0.0770	1.10	0.2090
IDN 7	0.94	0.4720	0.98	0.8230

*Bold indicates significant (p<0.05)

After excluding Beneficiaries with no outpatient vests and controlling Beneficiary characteristics, results showed significant differences over time (Table 6.1-120) in PMPM outpatient costs by IDN. Outpatient costs for Beneficiaries in IDN 2 decreased between the pre-Demonstration and Demonstration periods by $19 and between the pre-Demonstration and Demonstration Pandemic periods by $91. Compared to IDN 2(Figure 6.1—103, Figure 6.1—106):

- Outpatient costs in IDN 6 decreased by a smaller amount in the Demonstration period.
- While outpatient costs decreased in IDN 2, they increased in IDN 3 and IDN 4 in the Demonstration period.
- In the Demonstration Pandemic period, outpatient costs decreased significantly more in IDN 1.
- Outpatient costs in IDN 3, IDN 4, and IDN 6 decreased by a smaller amount in the Pandemic period.

Figure 6.1—105. Results of Generalized Linear Model Estimating Change in Total Outpatient Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
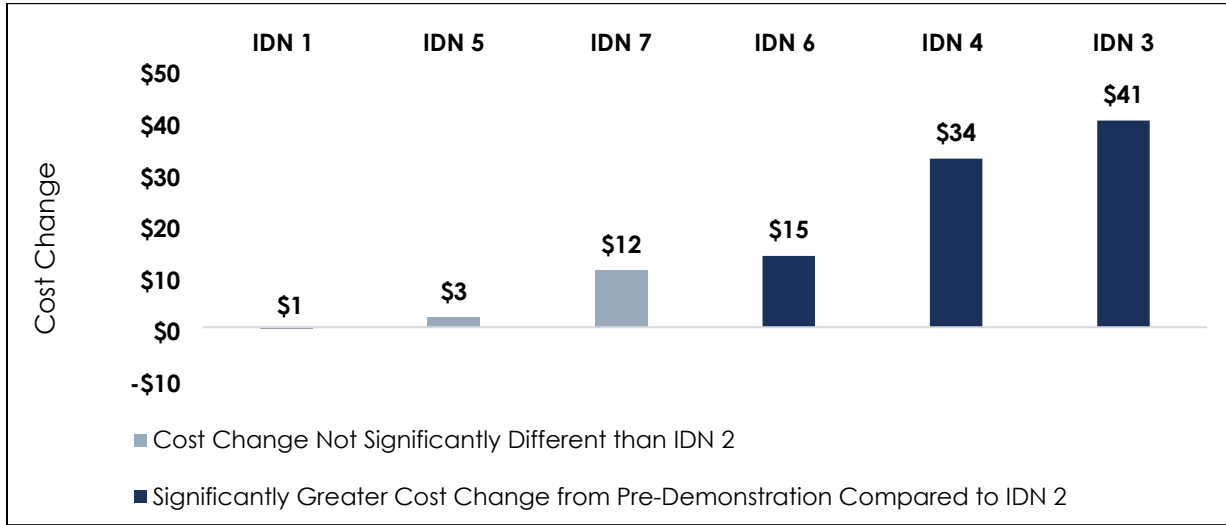

Figure 6.1—106. Results of Generalized Linear Model Estimating Change in Total Outpatient Costs Relative to IDN 2 – Behavioral Health Population (Demonstration Pandemic Period)
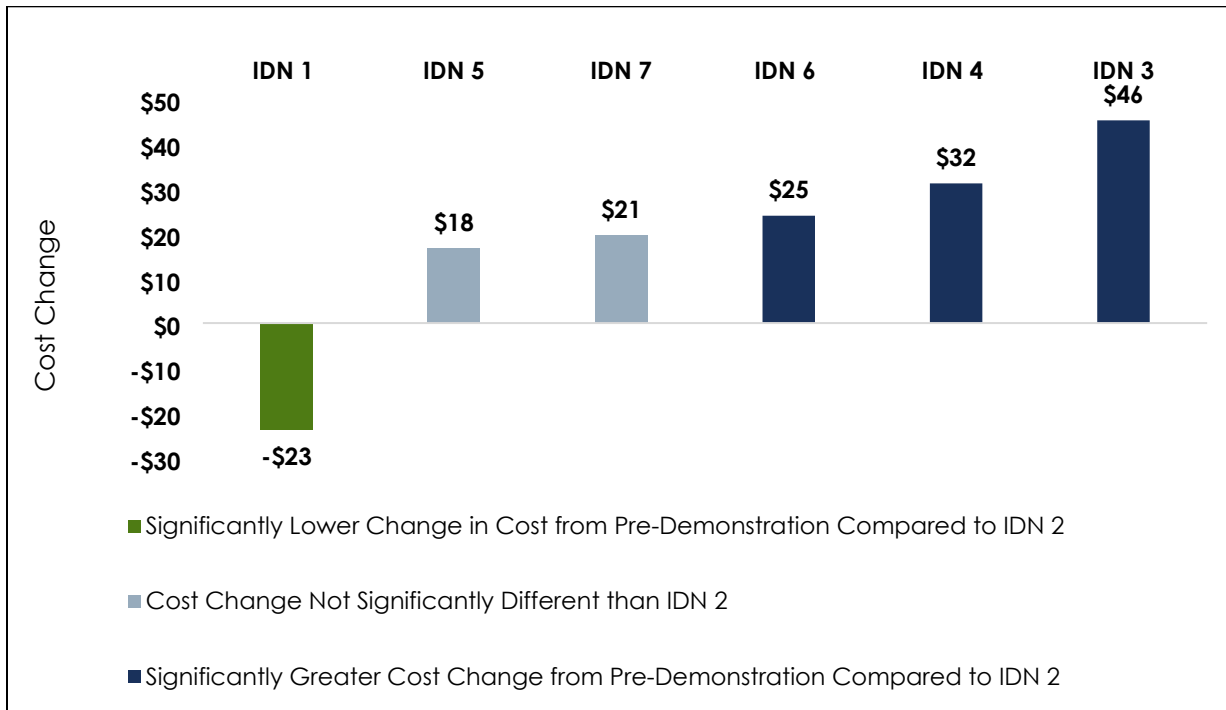
Table 6.1-120. Generalized Linear Models Estimating Adjusted Outpatient Care Cost PMPM Compared to IDN 2 IDN – Adjusted Behavioral Health Population

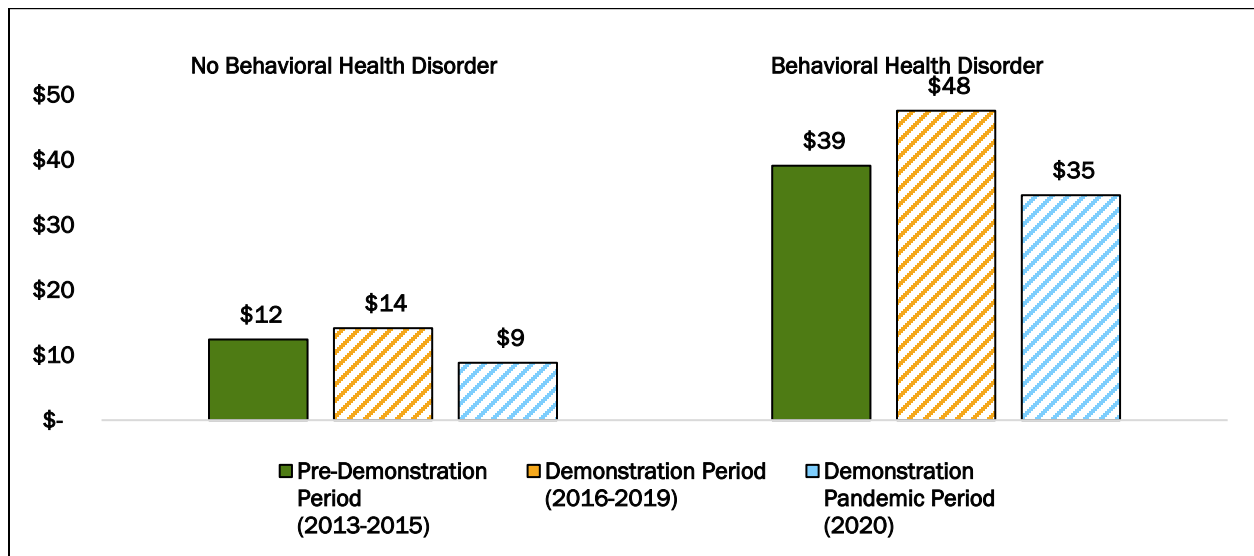| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Cost Change	P-Value	Cost Change	P-Value
IDN 2	-$19.39	0.0010	-$90.74	0.0000
Time Interaction				
IDN 1	$0.77	0.9090	-$22.66	0.0340
IDN 3	$41.10	0.0000	$46.18	0.0000
IDN 4	$33.71	0.0000	$32.11	0.0010
IDN 5	$2.84	0.6650	$17.73	0.0870
IDN 6	$14.86	0.0190	$24.94	0.0140
IDN 7	$11.99	0.1100	$20.55	0.0620

*Bold indicates significant (p<0.05)

6.1.5.4 Total Cost of Emergency Department (ED) Care

Statistical analyses were conducted to compare emergency department PMPM costs between the pre-Demonstration and Demonstration periods and to detect differences in the rate of change between the behavioral health and non-behavioral health Medicaid populations (Figure 6.1—107). Total costs for emergency department (ED) care:

⬥ PMPM ED visit cost was higher for Beneficiaries with a behavioral health disorder in all study periods;

⬥ Increased between the pre-Demonstration and Demonstration periods; costs increased from $12 to $14 for Beneficiaries without a behavioral health disorder and from $39 to $48 for those with a disorder; and

⬥ During the Demonstration Pandemic period, costs decreased to $9 for Beneficiaries without a behavioral health disorder and to $35 for those with a behavioral health disorder.

Figure 6.1—107.Standardized Medicaid Total ED Costs (PMPM) Over Time

*Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

Table 6.1-121 below shows the results of the analyses examining the likelihood of Beneficiaries with and without behavioral health disorders having at least one emergency department (ED) visit. Comparisons showed:

⬥ Beneficiaries with behavioral health disorders were **20% more likely** to have an ED visit in the pre-Demonstration period.

⬥ Beneficiaries without behavioral health disorders were **15% less likely** to have an ED visit in the Demonstration period and **64% less likely** in the Demonstration Pandemic period.

⬥ The decline in the likelihood of ED visits for Beneficiaries with a behavioral health disorder was similar to that of those without.

Table 6.1-121. Logistic Regression estimating the likelihood of Any ED Visit Propensity Matched Sample

Number of observations = 817,070					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-Value
Intercept	0.50	0.0033	0.4917	0.5040	0.0000
BH Flag	1.20	**0.0109**	1.1773	1.2200	**0.0000**
Demonstration Period	0.85	**0.0066**	0.8404	0.8663	**0.0000**
Demonstration Pandemic Period	0.64	**0.0071**	0.6235	0.6514	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	1.00	**0.0109**	0.9827	1.0253	0.7260
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	0.98	**0.0153**	0.9540	1.0139	0.2830

*Bold indicates significant (p<0.05)

Table 6.1-122 presents the results of analyses examining PMPM ED visit costs for Beneficiaries with behavioral health disorders compared to a group of Beneficiaries with similar characteristics without behavioral health disorders. Among individuals who had at least one ED visit, compared to the pre-Demonstration period:

◆ Both groups experienced an increase in ED visit cost in the Demonstration and Demonstration Pandemic periods;
◆ In the Demonstration period, total ED visit costs increased by $18 for Beneficiaries without behavioral health disorders compared to only $13 among individuals with behavioral health disorders;
◆ During the Demonstration Pandemic period, ED visit costs increased for the non-behavioral health population by $12 and by $4 for the behavioral health population;
◆ ED Visit cost was $18 higher for among Beneficiaries with behavioral health disorders compared to those without in the pre-Demonstration period;
◆ There was a significant increased PMPM ED cost for members with behavioral health disorders, $5 PMPM, compared to those without behavioral health disorders between the pre-Demonstration and Demonstration periods; and
◆ The increase between the pre-Demonstration and Demonstration Pandemic periods was $8 less among the behavioral health population compared to the non-behavioral health population.

Table 6.1-122. Generalized Linear Models (GLM) Estimating Emergency Department Costs PMPM Propensity Matched Sample

Number of observations = 260,944					
Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	$57.45	1.0080	56.5700	58.3500	0.0000
BH Flag	$17.82	0.9007	16.0592	19.5898	**0.0000**
Demonstration Period	$17.84	0.7996	16.2704	19.4049	**0.0000**
Demonstration Pandemic Period	$12.31	1.0996	10.1578	14.4680	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Period)	-$4.69	1.1133	-6.8725	-2.5085	**0.0000**
BH vs Non-BH Time Interaction (Demonstration Pandemic Period)	-$8.23	1.6108	-5.0752	-11.3895	**0.0000**

*Bold indicates significant (p<0.05)

Among Beneficiaries with a behavioral health disorder, after controlling for Beneficiary characteristics, several significant differences were found in the likelihood of experiencing an ED visit (Table 6.1-123). In the behavioral health population:

- There was no change in the likelihood of an ED visit between the pre-Demonstration and Demonstration periods;
- The odds of having an ED visit declined between the pre-Demonstration and Demonstration Pandemic periods;
- Female Beneficiaries, the expansion group and individuals with higher ACG risk scores were more likely to have ED visits; and
- Lower odds of having ED visits were associated with age, dual eligibility, and residing in non-urban locations

Table 6.1-123. Logistic Regression estimating the likelihood of Any ED Visit
Unmatched Behavioral Health Group

Number of observations = 60,619					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-Value
Intercept	7.63	0.3123	7.0379	8.2635	0.0000
Demonstration Period	0.99	0.0205	0.9510	1.0314	0.6410
Demonstration Pandemic Period	0.77	0.0213	0.7260	0.8095	**0.0000**
Age	0.97	0.0007	0.9692	0.9718	**0.0000**
Female	1.06	0.0220	1.0215	1.1077	**0.0030**
Dual Eligible	0.60	0.0155	0.5708	0.6315	**0.0000**
Expansion Population	1.24	0.0280	1.1876	1.2974	**0.0000**
ACG Risk Score	1.11	0.0035	1.1069	1.1205	**0.0000**
Large Rural	0.84	0.0219	0.7965	0.8824	**0.0000**
Small Rural	0.76	0.0230	0.7198	0.8102	**0.0000**
Isolated Rural	0.62	0.0216	0.5835	0.6680	**0.0000**

*Bold indicates significant (p<0.05)

Table 6.1-124 below shows PMPM ED cost for Beneficiaries with behavioral health disorders who had with at least one ED visit, after controlling for Beneficiary characteristics of interest. Among Beneficiaries with a behavioral health disorder:

- Compared to the pre-Demonstration period, there was a small decline between the pre-Demonstration and Demonstration periods in ED PMPM costs among Beneficiaries with behavioral health disorders, but it was not significant.
- ED PMPM costs for those with at least one ED visit declined significantly between the pre-Demonstration and Demonstration Pandemic periods by $35.
- Beneficiaries in the expansion group, females, individuals with higher risk scores, and residents in small and isolated remote areas had higher PMPM ED costs.
- Dual eligibility and age were associated with lower ED visit cost.

Table 6.1-124 Generalized Linear Models (GLM) Estimating ED Costs PMPM
Unmatched Behavioral Health Population

Number of observations = 60,619					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$104.26	1.0242	99.4200	109.3500	0.0000
Demonstration Period	-$3.71	1.9232	-7.4841	0.0549	0.0530
Demonstration Pandemic Period	-$35.34	2.5830	-40.4057	-30.2806	0.0000
Age	-$0.36	0.0667	-0.4870	-0.2256	0.0000
Female	$12.46	1.9517	8.6378	16.2883	0.0000
Dual Eligible	-$137.98	2.9568	-143.7756	-132.1853	0.0000
Expansion Population	$57.60	1.9610	53.7551	61.4423	0.0000
ACG Risk Score	$8.23	0.2011	7.8386	8.6269	0.0000
Large Rural	-$1.44	2.4994	-6.3370	3.4604	0.5650
Small Rural	$28.18	3.3851	21.5490	34.8182	0.0000
Isolated Rural	$15.61	3.2571	9.2244	21.9921	0.0000

*Bold indicates significant (p<0.05)

As shown in Figure 6.1—108 below, without controlling for Beneficiary characteristics of interest, ED cost increased for beneficiaries with behavioral health disorders in all IDNs between the pre-Demonstration and Demonstration periods. In the pre-Demonstration period, cost ranged from $32 to $49. This increased in the Demonstration period with ranges from $40 - $58. However, this trend reversed in the Demonstration Pandemic period where all IDNs saw decreases in ED cost.

Figure 6.1—108 Total Emergency Department Cost of Care by IDN - Behavioral Health Population
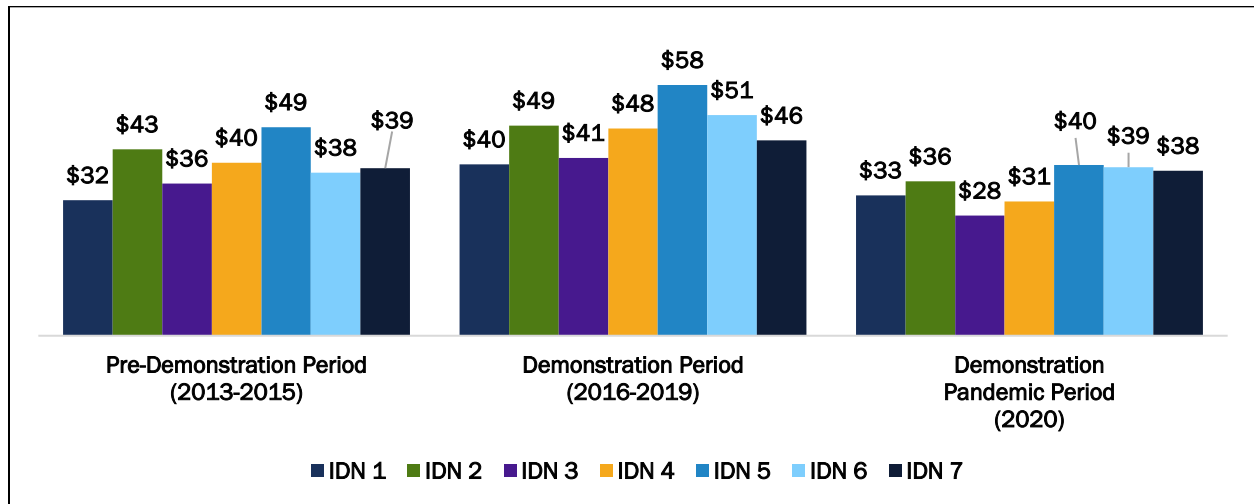
Results showed significant differences in IDN ED costs, without controlling for Beneficiary characteristics of interest, over the course of the Demonstration (Table 6.1-125). When compared to IDN 2:

◆ In the pre-Demonstration period, IDN 1, IDN 3, IDN 4, IDN 6, and IDN 7 experienced significantly lower PMPM ED costs, while IDN 5 had significantly higher PMPM ED costs;

- In the Demonstration period, ED PMPM costs for Beneficiaries in IDN 1, IDN 3, and IDN 7 were lower and costs for Beneficiaries in IDN 5 and IDN 6 were higher; and
- In the Demonstration Pandemic period, IDN 1, IDN 3, and IDN 4 had lower costs and IDN 5 and IDN 6 had higher costs.

Table 6.1-125. Total Cost of All Emergency Department Care for IDNs with Significant Differences Compared to IDN2 by Period – Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
PMPM ED Costs	IDN 1	▼	IDN 1	▼	IDN 1	▼
	IDN 3	▼	IDN 3	▼	IDN 3	▼
	IDN 4	▼	IDN 5	▲	IDN 4	▼
	IDN 5	▲	IDN 6	▲	IDN 5	▲
	IDN 6	▼	IDN 7	▼	IDN 6	▲
	IDN 7	▼				

Significant differences in the odds of Beneficiaries with behavioral health conditions having at least one ED visit were found after controlling for Beneficiary characteristics of interest (Table 6.1-126). The likelihood of at least one ED visit decreased by 51% between the pre-Demonstration and Demonstration periods and by 29% between the pre-Demonstration and Demonstration Pandemic periods. Compared to IDN 2 (Figure 6.1—109 and Figure 6.1—110);

- The odds of a member having an ED visit for all other IDNs decreased more between the pre- and Demonstration periods, and the difference in the reduction was significant for all IDNs except IDN 5.
- The decrease in the odds of an ED visit between the pre- and Demonstration Pandemic periods was also larger for all other IDNs. The differences were significant for all except IDN 6.

Figure 6.1—109. Logistic Regression Estimating the Likelihood of <u>Any ED </u>Visit Across IDNs - Behavioral Health Population Relative to IDN 2 (Demonstration Period)
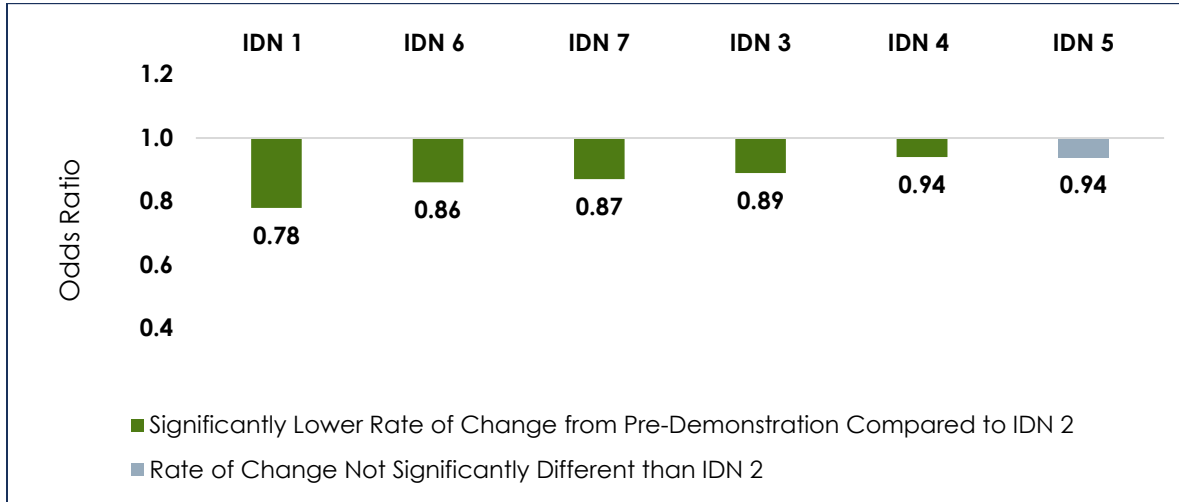

Figure 6.1—110. Logistic Regression Estimating the Likelihood of <u>Any ED </u>Visit Across IDNs - Behavioral Health Population Relative to IDN 2 (Demonstration Pandemic Period)
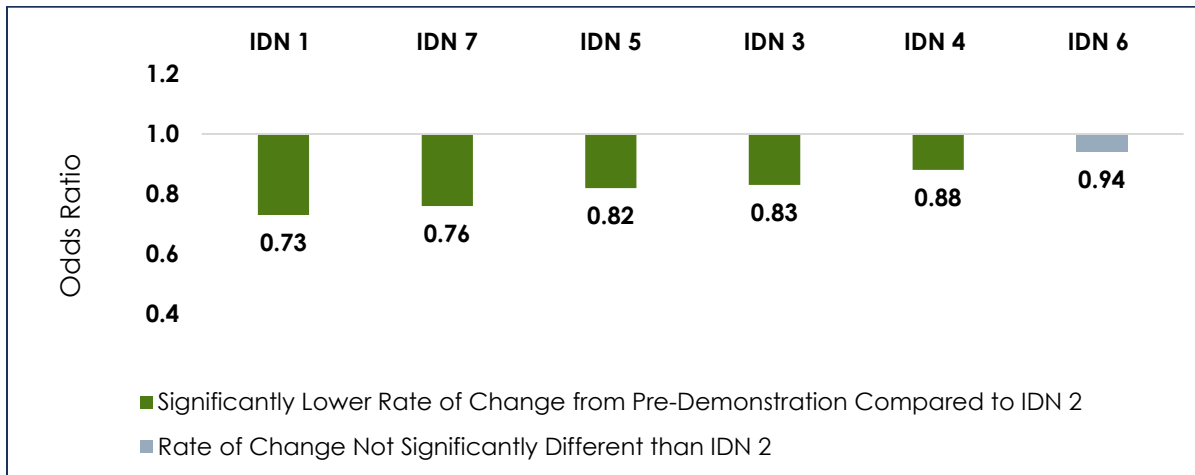
Table 6.1-126. Logistic Regression Estimating the Likelihood of any ED visit Across IDNs

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	0.49	0.0000	0.71	**0.0000**
Time Interaction				
IDN 1	0.78	**0.0000**	0.73	**0.0000**
IDN 3	0.89	**0.0000**	0.83	**0.0000**
IDN 4	0.94	**0.0310**	0.88	**0.0010**
IDN 5	0.94	0.0590	0.82	**0.0000**
IDN 6	0.86	**0.0000**	0.94	0.0820
IDN 7	0.87	**0.0000**	0.76	**0.0000**

*Bold indicates significant (p<0.05)

After excluding Beneficiaries with no ED visits and controlling for Beneficiary characteristics of interest, results showed significant differences in ED costs over time by IDN relative to IDN 2 (Table 6.1-127). ED costs significantly declined by $12 PMPM between the pre-Demonstration and Demonstration periods for Beneficiaries in IDN 2 and by $31 PMPM between the pre-Demonstration and Demonstration Pandemic periods. Compared to IDN 2:

- ◆ All other IDNs either experienced a significant but smaller decrease or an increase in ED visit PMPM costs between the pre-Demonstration and Demonstration periods.
- ◆ PMPM ED costs in IDN 3, IDN 5 and IDN 7 decreased by a significantly smaller amount between the pre-Demonstration and Demonstration periods ($4 PMPM, $6 PMPM, and $2 PMPM, respectively).
- ◆ PMPM ED costs in IDN 1, IDN 4, and IDN 6 increased between the between the pre-Demonstration and Demonstration periods by $2, $2, and $7, respectively.
- ◆ ED PMPM costs for all IDNs were lower in the Demonstration Pandemic period when compared to the pre-Demonstration period. However, the decrease in IDN 2 was significantly more than all other IDNs.

Figure 6.1—111. Results of Generalized Linear Model Estimating Change in Total ED Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
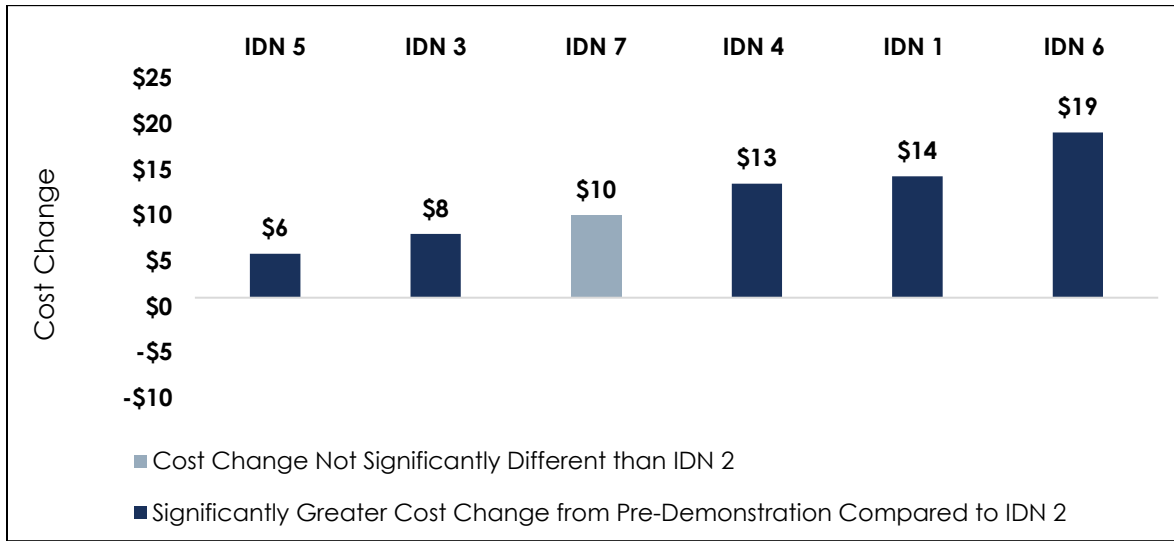

Figure 6.1—112 Results of Generalized Linear Model Estimating Change in Total ED Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
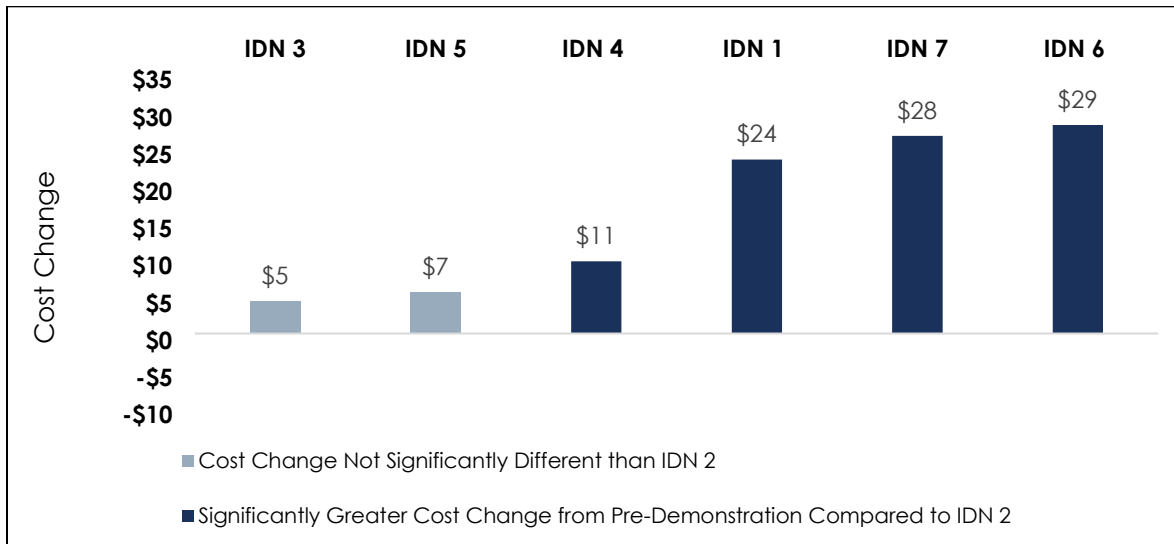
Table 6.1-127 Generalized Linear Models (GLM) Estimating Adjusted ED Costs PMPM Compared to IDN 2 – Adjusted Behavioral Health Population

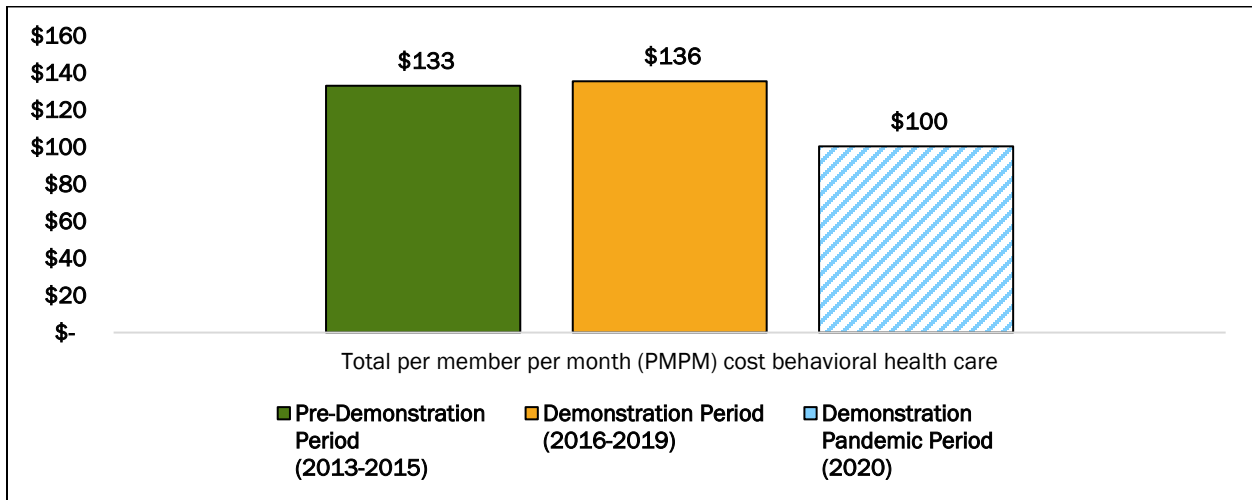| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Cost Change	P-Value	Cost Change	P-Value
IDN 2	-$11.66	**0.0000**	-$30.99	**0.0000**
Time Interaction				
IDN 1	$14.30	**0.0000**	$24.39	**0.0000**
IDN 3	$7.97	**0.0040**	$5.32	0.1630
IDN 4	$13.49	**0.0000**	$10.69	**0.0010**
IDN 5	$5.80	**0.0410**	$6.55	0.0840
IDN 6	$19.09	**0.0000**	$29.02	**0.0000**
IDN 7	$10.01	**0.0000**	$27.56	**0.0000**

*Bold indicates significant (p<0.05)

6.1.5.5 Total Cost of Behavioral Health Care

An analysis of the total PMPM cost for behavioral health care services regardless of the setting of the service is summarized in this section. Compared to the pre-Demonstration Period (Figure 6.1—113):

<div style="margin-left:2em;">

◆ Total PMPM costs for behavioral health care services did not change significantly between the pre-Demonstration and Demonstration periods; and

◆ Costs changed significantly between the pre-Demonstration and Demonstration Pandemic periods, dropping by $33 PMPM.

</div>

Figure 6.1—113. Total Standardized Medicaid Costs (PMPM) for Behavioral Health Care Services

*Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

Results show significantly higher PMPM cost for behavioral health services in the Demonstration period when controlling for Beneficiary characteristics of interest such as age, gender and eligibility status (Table 6.1-128). In the Demonstration Pandemic period, total behavioral health costs declined significantly. Compared to the pre-Demonstration period:

<div style="margin-left:2em;">

◆ Total behavioral health cost PMPM increased by $8 in the Demonstration period and decreased by $28 in the Demonstration Pandemic period.

◆ Individuals who were dual eligible had the highest behavioral health related costs.

◆ Beneficiaries with higher ACG risk scores and living in a large rural area were had higher PMPM costs for behavioral health services.

</div>

Being older, female, a member of the expansion population, and living in isolated rural area were all found to be associated with having lower costs.

Table 6.1-128. Generalized Linear Models (GLM) Estimating Adjusted Total Costs PMPM for Behavioral Health Visits

Number of observations = 489,337					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Demonstration Period	$8.04	1.3082	5.4769	10.6049	**0.0000**
Demonstration Pandemic Period	-$27.81	1.8718	-31.4811	-24.1437	**0.0000**
Age	-$0.67	0.0910	-0.8456	-0.4890	**0.0000**
Female	-$27.84	2.0931	-31.9445	-23.7398	**0.0000**
Dual Eligible	$69.91	4.8539	60.3958	79.4228	**0.0000**
Expansion Population	-$15.33	2.4620	-20.1532	-10.5024	**0.0000**
ACG Risk Score	$9.56	0.2569	9.0551	10.0622	**0.0000**
Large Rural	$5.44	2.7678	0.0133	10.8628	**0.0490**
Small Rural	-$3.52	3.3421	-10.0722	3.0285	0.2920
Isolated Rural	-$22.36	3.0949	-28.4236	-16.2917	**0.0000**

*Bold indicates significant (p<0.05)

Without controlling for Beneficiary characteristics of interest, in the pre-Demonstration period, total cost for behavioral health related visits ranged from $106- $227 with the lowest cost occurring in IDN 3 (Figure 6.1—114 below). In the Demonstration period, the cost for behavioral health related visits ranged from $122 - $191 with the lowest cost among Beneficiaries in IDN 1. Likewise, in the Demonstration Pandemic period, a behavioral health visit cost ranged from $75 - $147 with the lowest cost also in IDN 1. IDN 2 had the highest total PMPM behavioral health visit cost across the study period.

Figure 6.1—114. Total Cost of Care by IDN - Behavioral Health Population (Unadjusted)
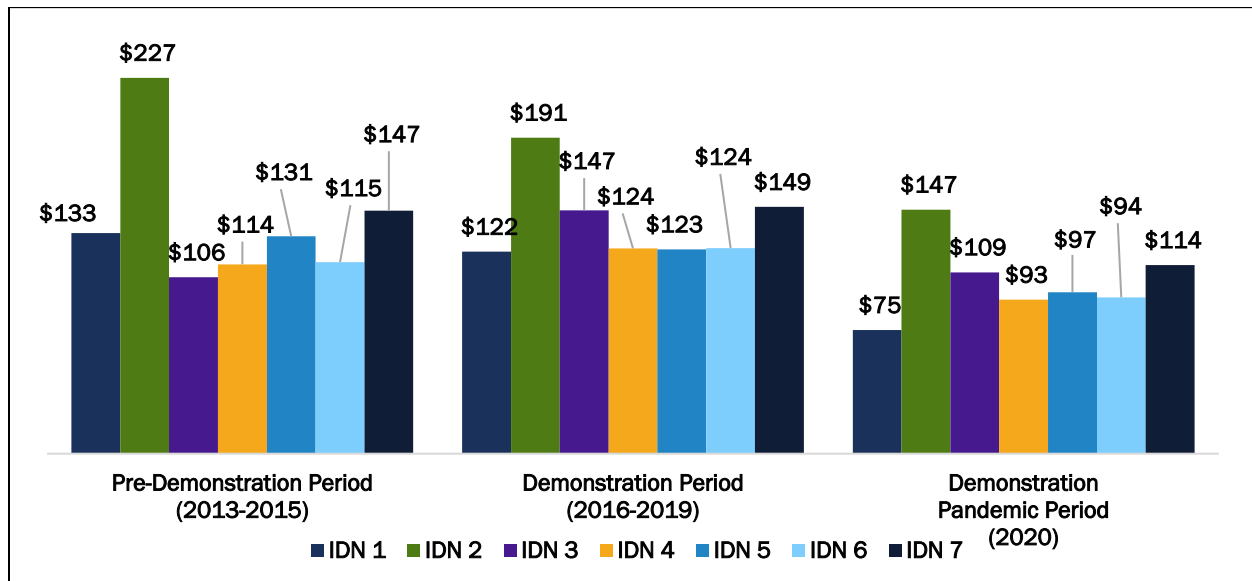
Significant difference by period were found in behavioral health related visit costs over the study periods (Table 6.1-129). Compared to IDN 2, all other IDNs had significantly lower

PMPM behavioral health related visit costs in the pre-Demonstration and Demonstration periods.

Table 6.1-129. Total Cost of Behavioral Health Care for IDNs with Significant Differences Compared to IDN2 by Period – Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Total Cost of Behavioral Health Care	IDN 1	▼	IDN 1	▼	IDN 1	▼
	IDN 3	▼	IDN 3	▼	IDN 3	▼
	IDN 4	▼	IDN 4	▼	IDN 4	▼
	IDN 5	▼	IDN 5	▼	IDN 5	▼
	IDN 6	▼	IDN 6	▼	IDN 6	▼
	IDN 7	▼	IDN 7	▼	IDN 7	▼

Table 6.1-130 below presents the results of analysis examining cost changes for the behavioral health population, controlling for Beneficiary characteristics of interest across IDNs for behavioral health services with significant differences compared to IDN 2. Total PMPM costs for behavioral health services in IDN 2 significantly decreased by $10 in the Demonstration period and by $45 in the Demonstration Pandemic period. Findings also showed that, compared to IDN 2:

- IDN 3, IDN 4, IDN 6, and IDN 7 experienced increased costs for behavioral health services in the Demonstration period and the difference from the change in IDN 2 was significant;
- The decrease in costs was greater in IDN 1 in the Demonstration Pandemic period;
- The decrease in PMPM costs for behavioral health services was significantly smaller in IDN 4, IDN 6, and IDN 7, although Beneficiaries in these IDNs also had a decrease in costs in the Demonstration Pandemic period; and
- There was a significant difference in the rate of change large enough to result in an increase in PMPM costs of $10 in IDN 3 in the Demonstration Pandemic period.

Figure 6.1—115. Results of Generalized Linear Model Estimating Change in Total Behavioral Health Care Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
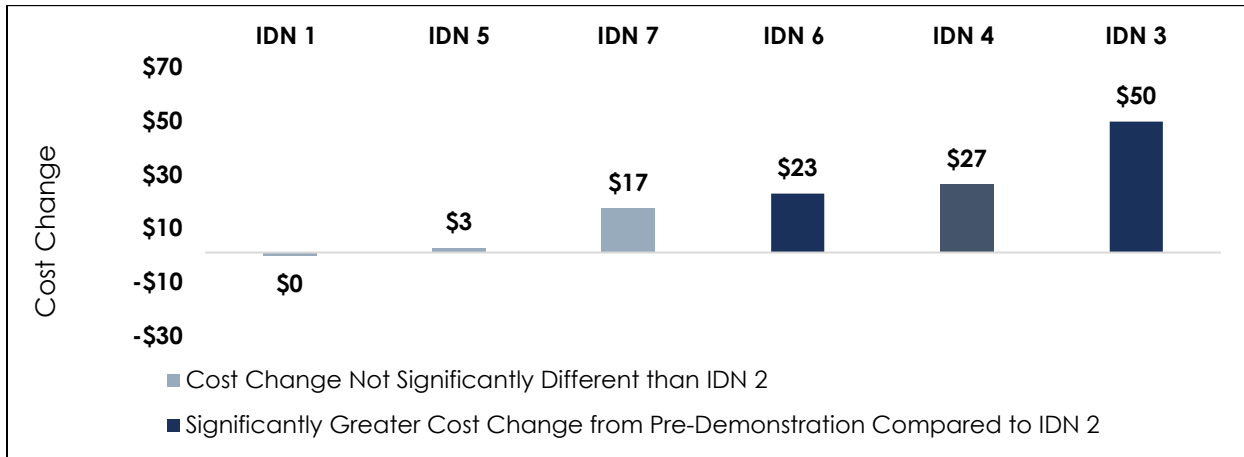

Figure 6.1—116 Results of Generalized Linear Model Estimating Change in Total Behavioral Health Care Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
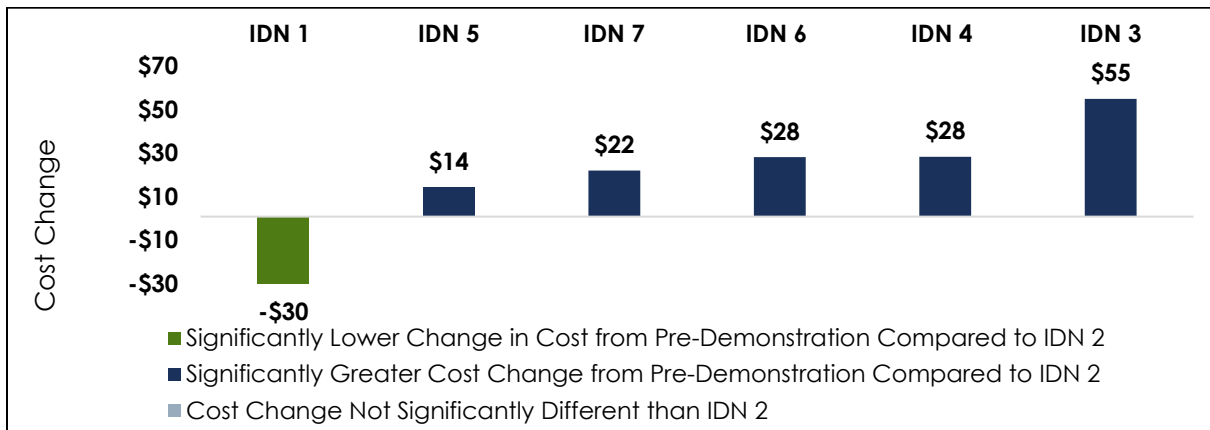

Table 6.1-130. Generalized Linear Models (GLM) Estimating Adjusted Total PMPM Costs for Behavioral health services for IDNs

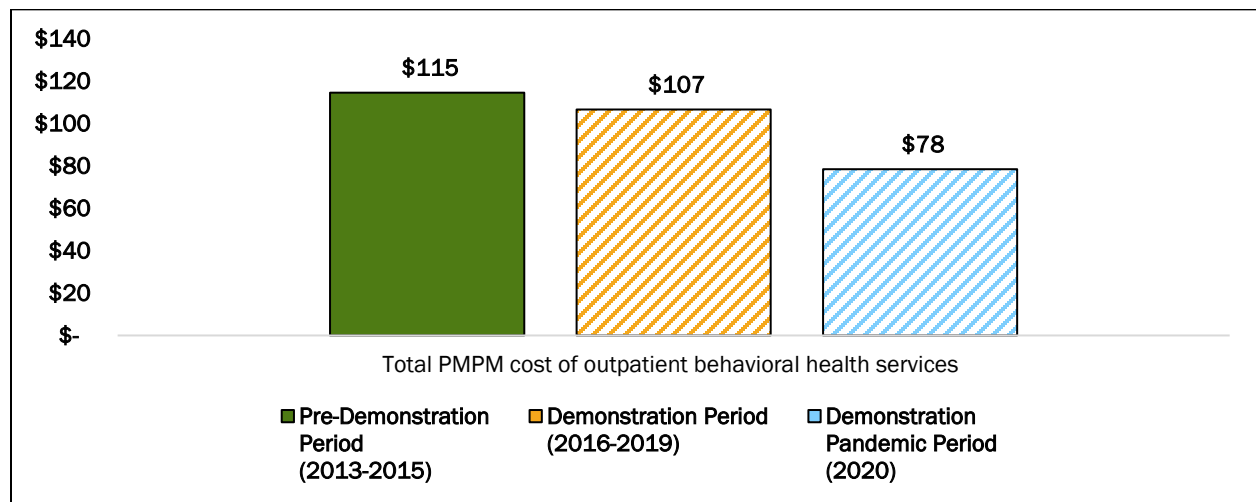| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Cost Change	P-Value	Cost Change	P-Value
IDN 2	-$9.76	**0.0230**	-$45.22	**0.0000**
Time Interaction				
IDN 1	-$0.29	0.9570	-$29.81	**0.0000**
IDN 3	$49.81	**0.0000**	$55.01	**0.0000**
IDN 4	$26.53	**0.0000**	$28.44	**0.0000**
IDN 5	$2.84	0.5930	$14.45	0.0980
IDN 6	$22.95	**0.0000**	$28.30	**0.0000**
IDN 7	$17.41	**0.0020**	$22.16	**0.0090**

*Bold indicates significant ($p<0.05$)

6.1.5.6 Total Cost of Outpatient Behavioral Health Care

Costs for behavioral health services in an outpatient setting were identified and analyzed to look for changes over the study period. Total PMPM costs for outpatient behavioral health care services declined over the course of the Demonstration (Figure 6.1—117). Compared to the pre-Demonstration Period:

◆ Outpatient behavioral health care costs declined significantly from $155 PMPM in the pre-Demonstration period to $107 PMPM in the post- Demonstration; and

◆ Outpatient behavioral health care cost decreased significantly from $115 PMPM in the pre-Demonstration to $78 PMPM in the post- Demonstration pandemic period.

Figure 6.1—117. Total Standardized Medicaid Costs PMPM of Outpatient Behavioral Health Care

*Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

After controlling for Beneficiary characteristics of interest, the likelihood of having an outpatient behavioral health service increased significantly between the pre-Demonstration and Demonstration period and decreased between the pre-Demonstration and Demonstration Pandemic period. Results are presented in Table 6.1-131 below. Compared to the pre-Demonstration period:

◆ The odds of having an outpatient behavioral health service increased by 5% in the Demonstration period.

◆ The odds were 17% lower in the Demonstration Pandemic period.

◆ Females, Duals, individuals in the expansion population, those with higher ACG risk scores and individuals residing in large rural were more likely to have at least one behavioral health outpatient visit.

◆ Individuals residing in in isolated rural residence where less likely to have an outpatient visit for a behavioral health service.

Table 6.1-131. Logistic Regression estimating the likelihood of Outpatient Behavioral Health Care

Number of observations = 1,315,226					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Intercept	0.26	0.0020	0.2530	0.2610	0.0000
Demonstration Period	1.05	0.0051	1.0370	1.0570	**0.0000**
Demonstration Pandemic Period	0.83	0.0054	0.8214	0.8424	**0.0000**
Age	1.00	0.0002	1.0030	1.0040	**0.0000**
Female	1.07	0.0079	1.0538	1.0849	**0.0000**
Dual Eligible	1.27	0.0218	1.2234	1.3088	**0.0000**
Expansion Population	1.22	0.0109	1.2017	1.2445	**0.0000**
ACG Risk Score	1.11	0.0015	1.1051	1.1111	**0.0000**
Large Rural	1.03	0.0102	1.0111	1.0510	**0.0020**
Small Rural	1.02	0.0118	0.9936	1.0398	0.1600
Isolated Rural	0.89	0.0116	0.8720	0.9175	**0.0000**

*Bold indicates significant (p<0.05)

Significant differences were found in PMPM costs for outpatient behavioral health visits over the study period when controlling for key covariate of interest (Table 6.1-132). Significant differences include:

- A small increase of $3 in PMPM costs for outpatient behavioral health visits in the Demonstration period;
- A decrease of $32 in PMPM costs for outpatient behavioral health visits in the Demonstration Pandemic period;
- Older individuals, Duals, ACG risk score, and large rural residence were related to higher costs; and
- Lower PMPM costs for outpatient behavioral health visits were associated with being female and residing in isolated rural areas.

Table 6.1-132. Generalized Linear Models Estimating Adjusted Costs PMPM for Outpatient Behavioral Health Care

Number of observations = 346,442					
Parameter	Cost Change	Standard Error	95% Confidence Limits		P-value
Intercept	$122.26	1.0181	118.00	126.68	0.0000
Demonstration Period	$3.11	1.3261	0.5094	5.7077	**0.0190**
Demonstration Pandemic Period	-$32.05	1.8525	-35.6828	-28.4211	**0.0000**
Age	$0.73	0.1044	0.5251	0.9342	**0.0000**
Female	-$28.92	2.2547	-33.3361	-24.4978	**0.0000**
Dual Eligible	$72.21	5.3355	61.7557	82.6706	**0.0000**
Expansion Population	-$43.11	2.5810	-48.1700	-38.0525	**0.0000**
ACG Risk Score	$5.05	0.2295	4.6009	5.5005	**0.0000**
Large Rural	$10.53	2.8887	4.8634	16.1868	**0.0000**
Small Rural	$3.17	3.3521	-3.4030	9.7368	0.3450
Isolated Rural	-$12.54	3.2225	-18.8545	-6.2224	**0.0000**

*Bold indicates significant (p<0.05)

There were significant differences in behavioral health outpatient costs for Beneficiaries with behavioral health conditions, controlling for key covariates of interest, in IDN rates across the Demonstration period compared to IDN 2 (Figure 6.1—118, Figure 6.1—119).

Compared to IDN 2, the behavioral health outpatient costs in IDN 1 were significantly less, while behavioral health outpatient costs were significantly more for IDN 3, IDN 4, IDN 6, and IDN 7 during the Demonstration period. During the Demonstration Pandemic period, behavioral health outpatient costs were significantly higher for IDN 3, IDN 4, and IDN 7 compared to IDN 2.

Figure 6.1—118. Results of Generalized Linear Model Estimating Change in Total Behavioral Health Outpatient Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
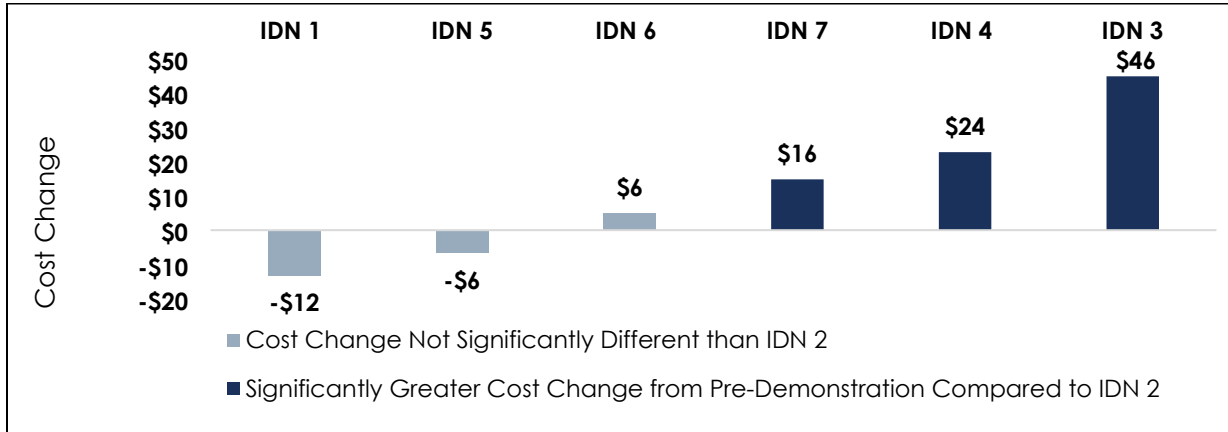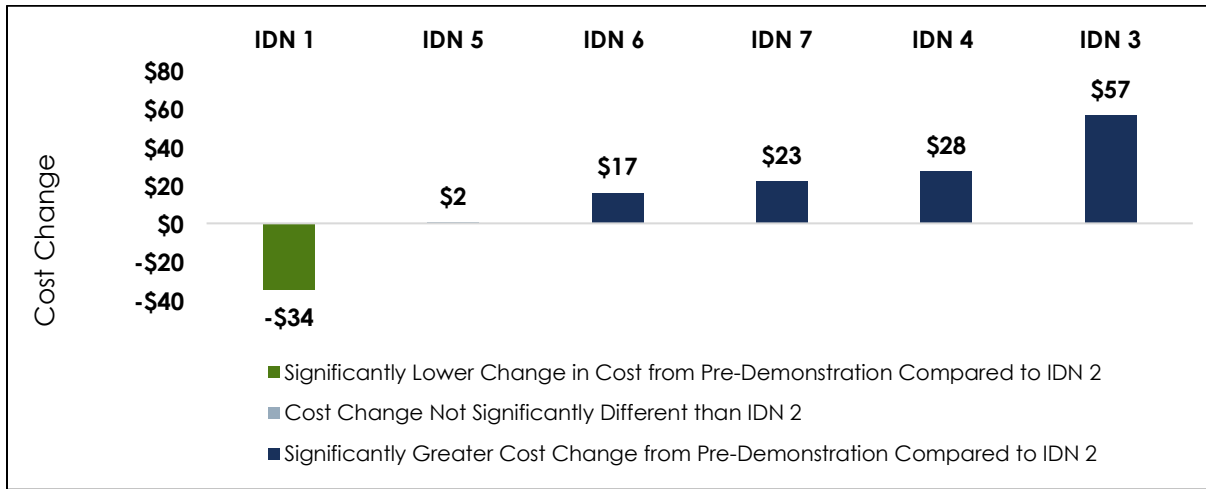

Figure 6.1—119. Results of Generalized Linear Model Estimating Change in Total Behavioral Health Outpatient Costs Relative to IDN 2 – Behavioral Health Population (Demonstration Pandemic Period)

6.1.5.7 Total Cost of Inpatient Behavioral Health Care

Costs for behavioral health inpatient admissions were analyzed to detect changes over time related to the Demonstration. Note that costs for New Hampshire Hospital (NHH), the state institution for mental disease (IMD) for adults 21-64, were not included in these costs. Costs for inpatient behavioral health care visits are shown in Figure 6.1—120 below. Compared to the pre-Demonstration Period:

- ⬥ In the Demonstration period, inpatient behavioral health costs increased significantly from $18 in the pre-Demonstration period to $26 in the post-period;
- ⬥ In the Demonstration Pandemic period, inpatient behavioral health costs were not significantly different than the pre-period.

Figure 6.1—120. Total Standardized Medicaid Costs PMPM of Inpatient Behavioral Health Care
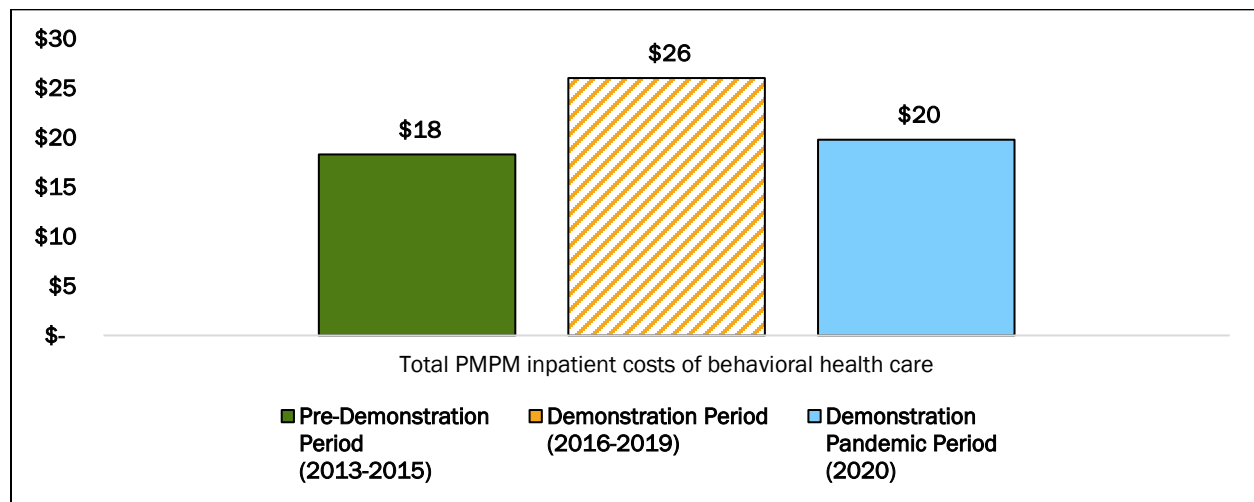
*Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

When controlling for Beneficiary characteristics of interest, results showed that the odds of having at least one behavioral health inpatient admission increased between the pre-Demonstration and Demonstration period, but decreased between the pre-Demonstration and Demonstration Pandemic periods among Beneficiaries with behavioral health conditions (Table 6.1-133). For the Behavioral Health population:

- ⬥ The likelihood of having at least one behavioral health admissions increased by 16% in the Demonstration period.
- ⬥ The likelihood of a behavioral health admission decreased by 13% between the pre- and Demonstration Pandemic periods.
- ⬥ The odds of having at least one behavioral health inpatient admission were greater among the Expansion population and Beneficiaries with higher ACG risk scores.
- ⬥ Beneficiaries who were female, dual eligible, and residing in small or isolated rural residence were less likely to experience an inpatient admission.

Table 6.1-133. Logistic Regression estimating the likelihood of visiting Any Inpatient Behavioral Health Care

Number of observations = 1,315,226					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Intercept	1.01	0.0002	0.0066	0.0072	0.0000
Demonstration Period	1.16	0.0229	1.1188	1.2086	**0.0000**
Demonstration Pandemic Period	0.87	0.0235	0.8282	0.9201	**0.0000**
Age	1.00	0.0006	1.0019	1.0043	**0.0000**
Female	0.95	0.0193	0.9150	0.9908	**0.0160**
Dual Eligible	0.79	0.0375	0.7179	0.8650	**0.0000**
Expansion Population	2.56	0.0669	2.4322	2.6944	**0.0000**
ACG Risk Score	1.13	0.0012	1.1253	1.1301	**0.0000**
Large Rural	0.98	0.0266	0.9328	1.0372	0.5410
Small Rural	0.79	0.0262	0.7429	0.8457	**0.0000**
Isolated Rural	0.63	0.0249	0.5798	0.6774	**0.0000**

*Significant changes are indicated in bold

Table 6.1-134 below shows the results of estimates for PMPM cost of behavioral health inpatient admissions for Beneficiaries with at least one behavioral health inpatient admission controlling for Beneficiary characteristics of interest. Among Beneficiaries with behavioral health disorders who had at one behavioral health inpatient admission:

- ✦ PMPM costs for behavioral health inpatient care declined, but not significantly, in the Demonstration period.
- ✦ A significant decrease of $118 occurred between the pre-Demonstration and Demonstration Pandemic periods.
- ✦ Younger individuals, females, and Duals had lower PMPM behavioral health care inpatient costs.
- ✦ Beneficiaries with higher ACG risk score had greater behavioral health inpatient costs.

*Table 6.1-134. Generalized Linear Models Estimating Adjusted Costs PMPM for Inpatient Behavioral Health Care*

Number of observations = 17,060					
Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	$876.45	1.0515	794.2680	967.1360	0.0000
Demonstration Period	-$25.36	25.5920	-75.5216	24.7970	0.3220
Demonstration Pandemic Period	-$118.58	32.3616	-182.0030	-55.1474	**0.0000**
Age	-$3.20	0.8239	-4.8116	-1.58197	**0.0000**
Female	-$83.53	19.5279	-121.8070	-45.2589	**0.0000**

Number of observations = 17,060					
Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Dual Eligible	-$507.02	38.9692	-583.3970	-430.641	**0.0000**
Expansion Population	-$5.88	20.3944	-45.8551	34.0895	0.7730
ACG Risk Score	$9.71	1.9447	5.9008	13.5237	**0.0000**
Large Rural	$5.53	26.0080	-45.4432	56.5064	0.8320
Small Rural	-$39.50	30.6605	-99.5896	20.5973	0.1970
Isolated Rural	-$14.61	33.6471	-80.5534	51.3407	0.6640

*Significant changes are indicated in bold

Figure 6.1—121 below displays the PMPM costs for behavioral health inpatient care for Beneficiaries with behavioral health disorders. In the pre-Demonstration period, inpatient behavioral health PMPM cost ranged from $15- $27 with the lowest cost occurring in IDN 7. In the Demonstration period, the inpatient behavioral health PMPM cost range was $19 - $32 with the lowest cost also in IDN 7. During the Demonstration Pandemic period, costs ranged from $14 - $26 with the lowest cost in IDN 1 and 7. IDN 2 had the highest inpatient behavioral health cost in the pre- and Demonstration Pandemic periods, while IDN 6 had the highest cost in the Demonstration period.

Figure 6.1—121. Behavioral Health Inpatient Cost of Care by IDN Behavioral Health Population (Unadjusted)
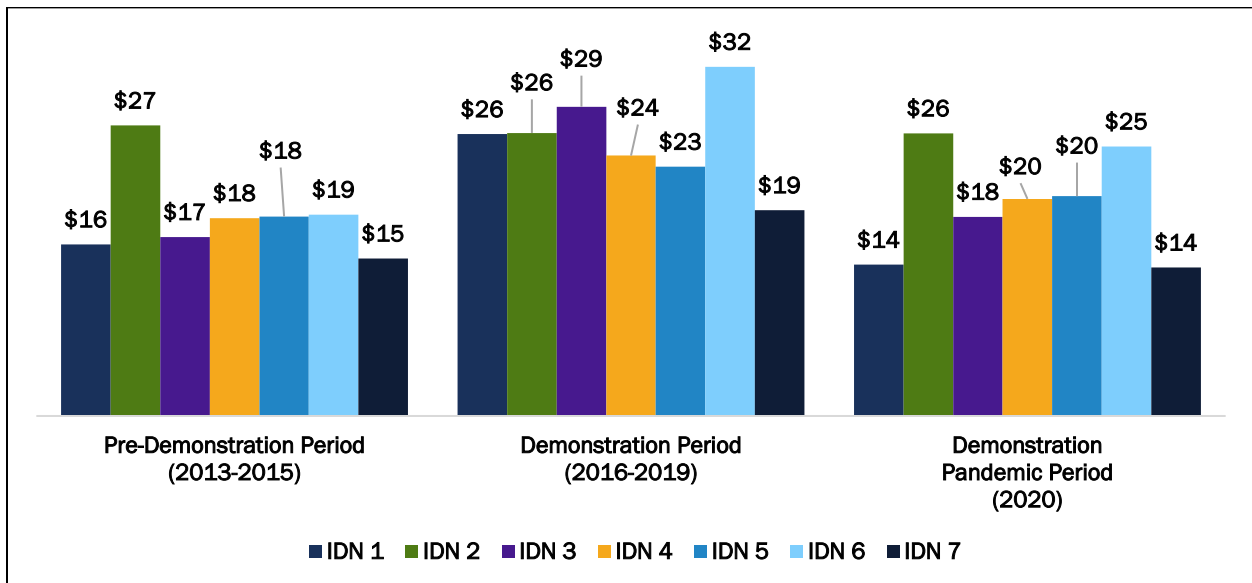
Results of comparing IDN 2 to other IDNs without controlling for Beneficiary characteristics of interest, found significant differences within each study period (Table 6.1-135). Compared to IDN 2:

◆ All of the other IDNs had lower behavioral health inpatient costs in the pre-Demonstration period.
◆ IDN 6 had the highest costs for behavioral health inpatient care and IDN 7 had the lowest costs in the Demonstration period.
◆ In the Demonstration pandemic period, IDN 1, IDN 3, IDN 4, and IDN 5 had lower costs.

Table 6.1-135. Total Cost of Inpatient Behavioral Health Care for IDNs with Significant Differences Compared to IDN2 by Period – Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Inpatient Behavioral Health Care Costs	IDN 1	▼	IDN 6	▲	IDN 1	▼
	IDN 3	▼	IDN 7	▼	IDN 3	▼
	IDN 4	▼			IDN 4	▼
	IDN 5	▼			IDN 7	▼
	IDN 6	▼				
	IDN 7	▼				

After controlling for Beneficiary characteristics of interest, results showed a significant difference between the pre-Demonstration and Demonstration periods for IDN 2. The odds of having a behavioral health inpatient admission for Beneficiaries at IDN 2 were unchanged between the pre-Demonstration and Demonstration period (Table 6.1-136). However, the odds of having a behavioral health related inpatient admission among Beneficiaries at IDN 2 decreased between the pre- and pandemic periods, but the difference did not meet the level of significance. Compared to the referent IDN 2:

◆ The rate of change in IDN 3, IDN 4, and IDN 6 was significantly larger between the pre-Demonstration and Demonstration periods with an increase in the likelihood of admissions for these three IDNs in the Demonstration period.
◆ The rate of change between the pre-Demonstration and Demonstration pandemic periods in IDN 4 and IDN 6 was significantly larger resulting in a greater likelihood of having a behavioral health admission for Beneficiaries in these IDNs in the Demonstration Pandemic period.
◆ The rate of change between the pre-Demonstration and Demonstration Pandemic periods in IDN 1 was significantly lower.

Figure 6.1—122. Logistic Regression Estimating the Likelihood of <u>Any Inpatient Behavioral Health</u> <u>Visit Across IDNs</u> - Behavioral Health Population Relative to IDN 2 (Demonstration Period)
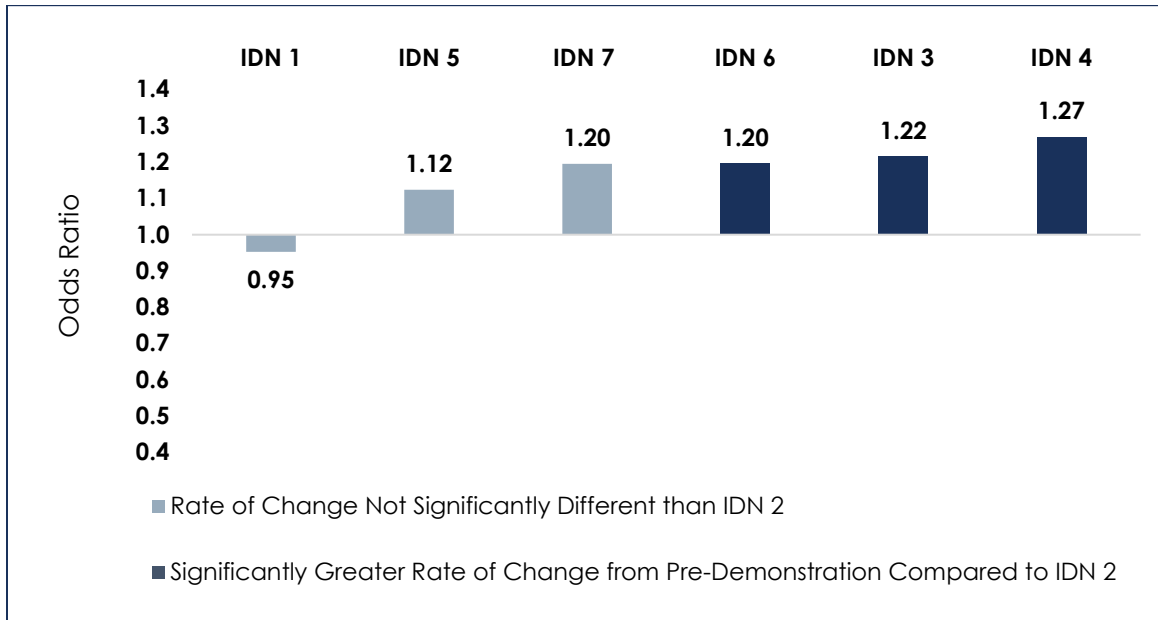

Figure 6.1—123. Logistic Regression Estimating the Likelihood of <u>Any Inpatient Behavioral Health</u> <u>Visit Across IDNs</u> - Behavioral Health Population Relative to IDN 2 (Demonstration Pandemic Period)
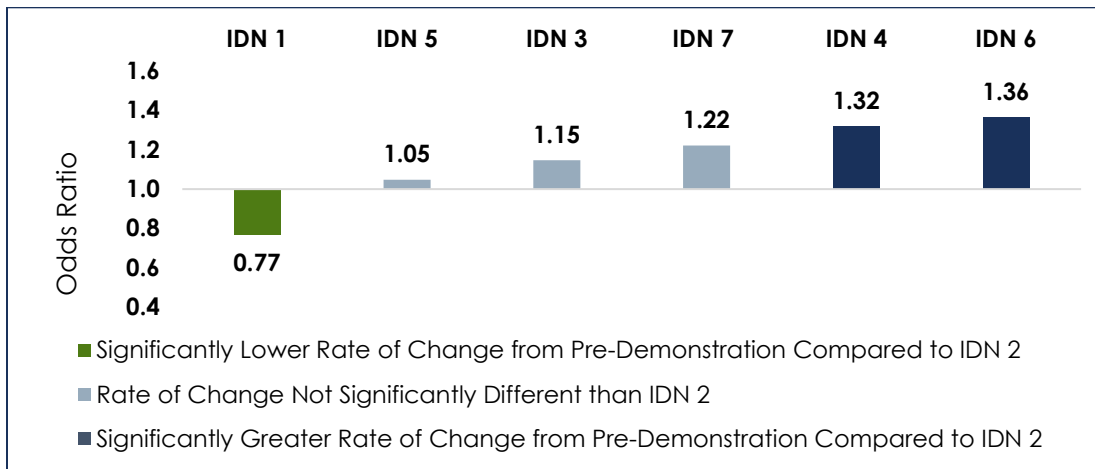
Table 6.1-136. Generalized Linear Models (GLM) Estimating Adjusted Inpatient Behavioral Health Costs PMPM for IDNs

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN 2	1.01	0.8690	0.86	0.0540
Time Interaction				
IDN 1	0.95	0.5270	0.77	0.0160
IDN 3	1.22	**0.0140**	1.15	0.2070
IDN 4	1.27	**0.0010**	1.32	**0.0040**
IDN 5	1.12	0.1750	1.05	0.7000
IDN 6	1.20	**0.0140**	1.36	**0.0020**
IDN 7	1.20	**0.0500**	1.22	0.1130

*Significant changes are indicated in bold

After excluding Beneficiaries with no behavioral health inpatient admissions and controlling for key covariates of interest, results showed significant differences over time in PMPM inpatient behavioral health care cost (Table 6.1-137). Among Beneficiaries with at least one behavioral health inpatient admission, costs significantly declined by $221 PMPM between the pre-Demonstration and Demonstration periods for Beneficiaries in IDN 2. The decrease in PMPM costs in the Demonstration Pandemic period; however, this decrease in PMPM inpatient behavioral health admissions was not significant. Compared to IDN 2:

- The changes in costs between the pre-Demonstration and Demonstration periods in IDN 1, IDN 3, and IDN 6 were significantly different; all 3 IDNs experienced an increase in behavioral health inpatient costs ranging from $48 PMPM to $92 PMPM.
- There were no significant differences in the rate of change in inpatient behavioral health care admission costs between the pre-Demonstration and Demonstration Pandemic periods although IDN 7 did see a decrease in PMPM costs.

Figure 6.1—124. Results of Generalized Linear Model Estimating Change Total Inpatient Behavioral Health Care Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
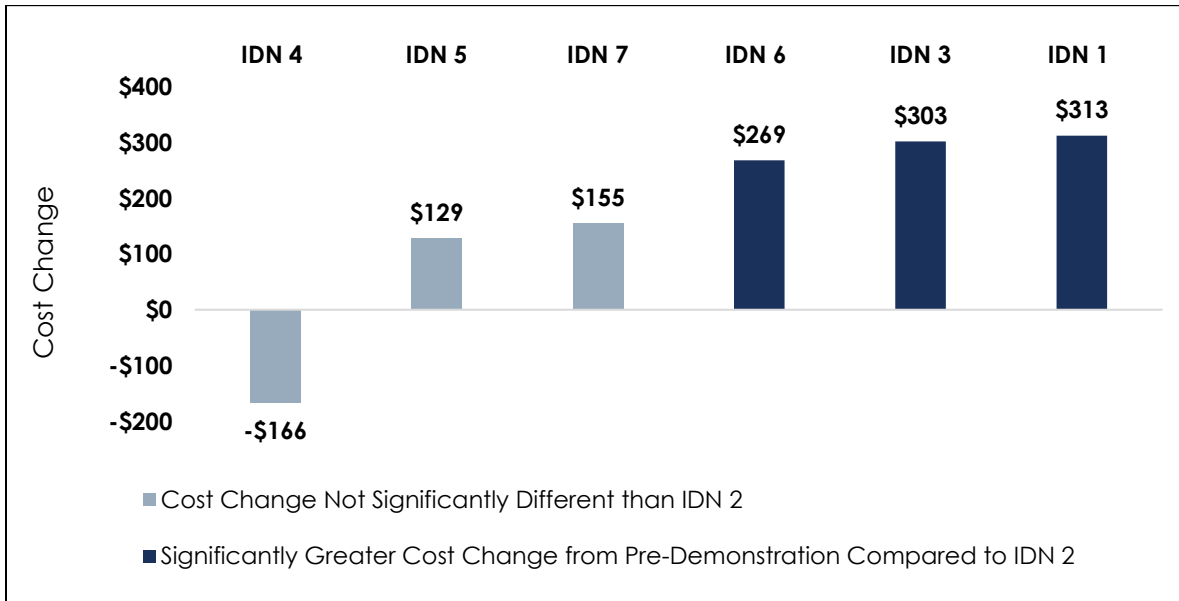

Figure 6.1—125 Results of Generalized Linear Model Estimating Change Total Inpatient Behavioral Health Care Costs Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
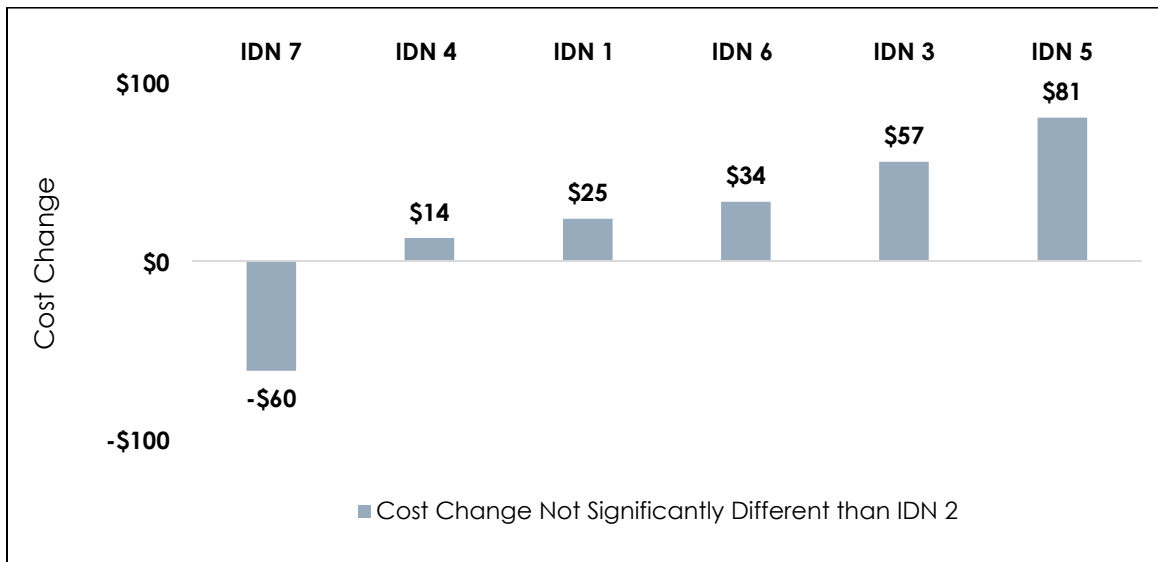
Table 6.1-137. Generalized Linear Models (GLM) Estimating Adjusted Inpatient Behavioral Health Costs PMPM for IDNs

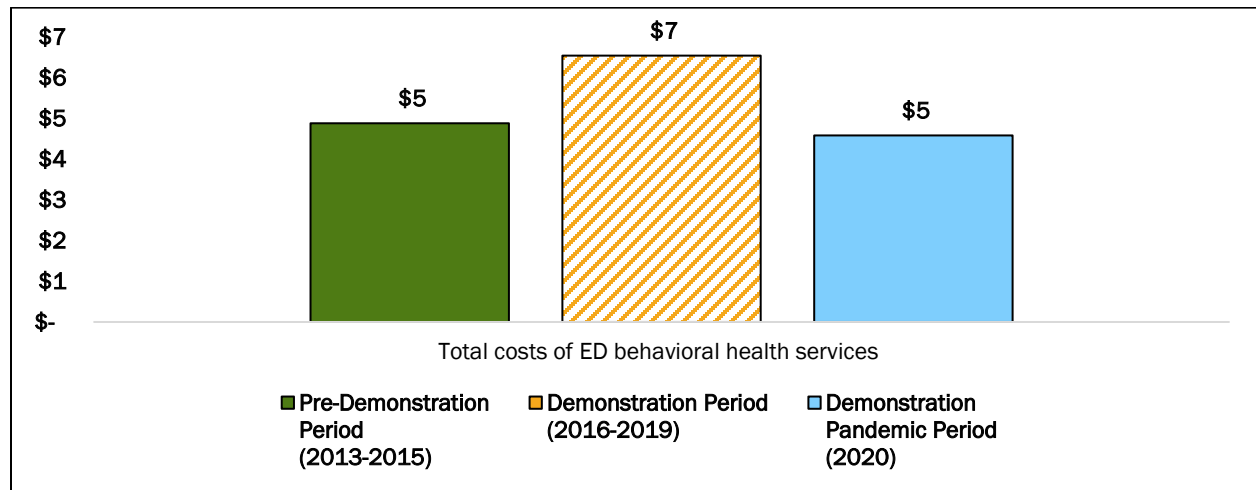| Parameter	Demonstration Period		Demonstration Pandemic Period	
	Cost Change	P-Value	Cost Change	P-Value
IDN2	-$220.76	**0.0170**	-$136.04	0.3330
Time Interaction				
IDN1	$312.98	**0.0210**	$24.65	0.8880
IDN3	$302.56	**0.0040**	$56.55	0.7060
IDN4	-$165.86	0.0870	$13.87	0.9240
IDN5	$129.14	0.2150	$81.23	0.6090
IDN6	$268.72	**0.0080**	$34.08	0.8160
IDN 7	$155.49	**0.1810**	-$60.42	0.7130

*Significant changes are indicated in bold

6.1.5.8 Total Cost of Emergency Department Behavioral Health Care

Behavioral health emergency department (ED) costs were analyzed to identify changes in PMPM costs after implementation of the DSRIP Demonstration. The sample included Medicaid beneficiaries with a behavioral health disorder. As shown in Figure 6.1—126 below, compared to the pre-Demonstration Period:

◆ Total PMPM cost for behavioral health services in ED settings increased significantly in the Demonstration period from $5 PMPM to $7 PMPM; and
◆ PMPM costs decreased during the Demonstration implementation pandemic period to the same level as costs prior to the implementation of the Demonstration.

Figure 6.1—126. Total Standardized Medicaid Cost PMPM for Behavioral Health related Emergency Department Visits

*Pattern within a column indicates significant change from Pre-Demonstration period
** All dollars were standardized using the 2016 Consumer Price Index (first year of Demonstration)

Table 6.1-138 presents the results of analysis examining the odds of having a behavioral health related ED visit in the Demonstration and Demonstration Pandemic periods compared to the pre-Demonstration period. Significant differences in costs over time included:

◆ The likelihood of having a behavioral health ED visit among Beneficiaries with a behavioral health condition did not change in the Demonstration period.
◆ The odds of having a behavioral health related ED visit declined by 28% between the pre-Demonstration and Demonstration pandemic period.
◆ Beneficiaries who had Dual eligibility status, individuals in the Expansion population and those with higher ACG risk score had a greater likelihood of having a behavioral health related ED visit.
◆ Odds of having a behavioral health related ED visit were lower for females and among individuals residing in non-urban areas.

Table 6.1-138. Logistic Regression estimating the likelihood of Behavioral Health Care Related Emergency Department Visits

Number of observations = 1,315,226					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Intercept	0.02	0.0003	0.0214	0.0227	0.0000
Demonstration Period	1.00	0.0127	0.9713	1.0212	0.7520
Demonstration Pandemic Period	0.72	0.0130	0.6945	0.7456	**0.0000**
Age	1.00	0.0005	0.9964	0.9982	**0.0000**
Female	0.91	0.0131	0.8827	0.9339	**0.0000**
Dual Eligible	1.11	0.0406	1.0333	1.1925	**0.0040**
Expansion Population	2.54	0.0479	2.4488	2.6367	**0.0000**
ACG Risk Score	1.15	0.0013	1.1442	1.1491	**0.0000**
Large Rural	0.88	0.0170	0.8483	0.9151	**0.0000**
Small Rural	0.77	0.0180	0.7402	0.8108	**0.0000**
Isolated Rural	0.59	0.0166	0.5602	0.6255	**0.0000**

*Significant changes are indicated in bold

After controlling for Beneficiary characteristics of interest, significant differences were found in behavioral health related ED visits over the study periods (Table 6.1-139). Compared to the pre-Demonstration period:

- No significant difference was detected in behavioral health care related PMPM ED costs between the pre-Demonstration and Demonstration periods.
- Costs significantly declined by $15 between the pre-Demonstration and Demonstration Pandemic periods.
- Beneficiaries in the Expansion group, older individuals, persons with higher ACG risk scores, and those residing in small or isolated rural areas had higher behavioral health care related ED costs.
- Females and Duals had lower behavioral health care related ED costs.

Table 6.1-139. Generalized Linear Models Estimating Adjusted PMPM Costs for Behavioral Health Related Emergency Department Visits

Number of observations = 40,231					
Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	$40.60	1.0349	37.9600	43.4200	0.0000
Demonstration Period	-$1.56	1.5019	-4.4997	1.3878	0.3000
Demonstration Pandemic Period	-$15.25	1.7317	-18.6434	-11.8553	**0.0000**
Age	$0.43	0.0617	0.3135	0.5555	**0.0000**
Female	-$2.89	1.4200	-5.6710	-0.1048	**0.0420**
Dual Eligible	-$52.82	2.5411	-57.7993	-47.8385	**0.0000**
Expansion Population	$28.34	1.4681	25.4670	31.2218	**0.0000**
ACG Risk Score	$2.54	0.1536	2.2427	2.8448	**0.0000**
Large Rural	$1.29	2.0406	-2.7070	5.2918	0.5270
Small Rural	$6.17	2.5381	1.1939	11.1432	**0.0150**
Isolated Rural	$7.79	2.8554	2.1913	13.3844	**0.0060**

*Significant changes are indicated in bold

6.1.5.9 Summary of Costs of Care

Hypotheses 1.4 states "cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after implementation of DSRIP regardless of IDN, geographic location, or market area". The behavioral health population has always had significantly higher costs than those without behavioral health disorders. Encouraging results showed a decrease in costs for all populations over the study period. However, in most cases, the rate of decrease was significantly less for the behavioral health population. As a result, analysis of costs do not support the hypotheses for most statewide cost comparisons. There are two exceptions, discussed below.

One exception is the cost for emergency department care. Although the percentage of beneficiaries with at least one visit to the ED remained the same in the Demonstration period and PMPM costs increased, the increase was significantly less than the comparison group (non-behavioral health sample).

In the analysis of Frequent ED use, Beneficiaries with a behavioral health diagnosis were significantly more likely to be a repeat users of the ED. Reduction of repeat ED use resulted in reduction of costs. The improved communication and use of technology for coordination of care developed in DSRIP to better monitor when someone uses the ED and the subsequent improved performance on follow-up by a mental health professional after the ED visit support a positive outcome for the DSRIP Demonstration.

The other exception is cost of outpatient care. Although both the behavioral health and non-behavioral health populations had a lower likelihood of any outpatient visit in the post and pandemic periods, the decline was smaller for the behavioral health population. However, the PMPM costs for the non-behavioral health population with at least one outpatient visit increased in the Demonstration period, while costs for the behavioral health population declined. Costs declined for both populations in the pandemic period, with the behavioral health population experiencing a significantly larger decline.

While use of outpatient services declined for both populations in both the Demonstration and Pandemic periods, the rate of decline was significantly less for the behavioral health population. Where this pattern was exhibited for those with other chronic conditions, costs of services provided to the behavioral health population were additional to those that are required to treat the physical chronic condition. Pharmacological treatments for behavioral health were apt to exacerbate these chronic conditions, thus contributing to more difficulty controlling the condition with added costs of services a result.

Table 6.1-140. Costs of Care Statewide Results

Measure Name	Measure Supports Hypothesis	IDNs Support Hypothesis
Total Cost of All Care	No	None
Total Cost of All Inpatient Care	No	None
Total Cost of All Outpatient Care	Mixed	IDN 1, IDN 2, IDN 5
Total Cost of Emergency Department (ED) Care	Yes	IDN 2, IDN 3, IDN 5, IDN 7
Total Cost of Behavioral Health Care	No	IDN 1, IDN 2
Total Cost of Inpatient Behavioral Health Care	No	IDN 2
Total Cost of Outpatient Behavioral Health Care	No	IDN 1
Total Cost of Emergency Department (ED) Behavioral Health Care	No	IDN 1, IDN 2, IDN 4

Further examination of cost measures indicates that all but one of the IDNs met the goal of reducing at least one cost measure. Following is a summary of individual IDNs impacts on costs.

Table 6.1-141. Cost Results by IDN

IDN	Impact on Costs
1	• Lower odds for outpatient visits and lower PMPM costs in the Demonstration period • Lower PMPM total costs for behavioral health care • Lower PMPM costs in the post and pandemic periods • Lower odds for any ED behavioral health visit but PMPM costs for those with any visit did not change significantly
2	• Lower odds for outpatient visits and lower PMPM costs in the Demonstration period • Lower PMPM total costs for behavioral health care • Lower inpatient behavioral health care costs in Demonstration period; odds of any admission did not change. • Lower odds of a behavioral health ED visit in the Demonstration and pandemic period and lower costs in the pandemic period.
3	• Lower odds of an ED visit and lower PMPM costs for those with any visit in both Demonstration periods.
4	• Small decrease in the odds of a behavioral health ED visit
5	• Lower odds of an outpatient visit and lower PMPM costs for those who had a visit. • Lower odds of an ED visit and lower PMPM costs for those who had a visit.
6	• Did not show improvement on any cost measures
7	• Lower odds of an ED visit

6.1.6 Population Health
Population Health Key Findings

- Data from provider surveys and interviews indicated that providers believed that the Demonstration made their organizations more responsive to population health needs through improved capacity related to integration of care, care transitions, and comprehensive screening. Administrators also shared this perception as indicated by the qualitative data collected from their interviews.
- Improvements in population health were also assessed through BRFSS data, which examined self-reflections on physical and mental health, frequency of exercise, body weight (based on body mass index), tobacco use, alcohol use, and prevalence of injuries. It is important to note that most BRFSS -based analysis focused on the NH population as a whole, and not just those with Medicaid insurance (due to insufficient sample sizes).
    - BRFSS respondents were significantly more likely to respond they had 14 to 30 days of "not good" mental health during the last 30 days in 2018 compared to 2014. However, there was a non-significant decrease in the percent of respondents with Medicaid insurance who respondent with the 14-30 days of "not good" mental health from 2014 to 2018.
    - From 2014 to 2018, there was an increase in respondents with a behavioral health flag (i.e., 14-30 days "not good" mental health in past 30 days) indicating they had no physical activity in the past 30 days (not significant); an increase in obesity (not significant); decrease in tobacco smokers and e-cigarette users (not significant); decrease in binge drinking and no change in heavy alcohol consumption (not significant).
    - There was no change in the overall prevalence of respondents with injuries from a fall in 2018 compared to 2014.
    - BRFSS data indicated there were fewer mammograms and prostate cancer screenings in 2018 compared to 2014.

6.1.6.1 Strategies to Improve Population Health

IDN Administrators highlighted the critical importance of integrated care and care transitions as factors in reaching the Demonstration's goal of improved population health. DSRIP-driven collaboration and communication across providers and organizations was instrumental in making inroads to the goal of improving population health.

IDN providers and Administrators also noted the importance of enhanced screening on social determinants of

> *"Whether they are presenting in a primary care office or with a community-based organization, I think that there's just a lot more support and clear pathways of how to get a person access to what they need that was developed through the IDN and really will have kind of instrumental continued role in better care for patients."*
>
> *"What we have done to tighten the connections of care transition is really, really significant for the population that we're touching."*
>
> -IDN Administrators (2021)

health (SDOH), implemented as part of the Demonstration as part of the CCSA, as an important factor in being able to better manage the overall health and well-being of the population they served. One IDN Administrator spoke of their wraparound model put into place via DSRIP to address SDOH.

IDN Administrators shared their ability to leverage IDN resources including staff, partner organizations and monetary funds to quickly identify opportunities to impact the population health of the community. There was broad agreement that as a community of provider organizations, it would not be possible to be as flexible or dynamic in responding to population health and community needs without the DSRIP funding; one Administrator explained: *"that's the kind of thing that has the most impact and has made the most difference in how we are operating differently now than we may have five years ago."*

> *"Culturally, at the practice level, practitioners now see and understand that the overlap of duties/ care that is provided is necessary for the good of the patient."*
> -Provider Survey Respondent (2019)
>
> *"I think the greatest success is that our patients are being better served."*
> —Provider (2021)
>
> *"I do think that the inclusion of thinking about social determinants of health would not be as far along as it is today across all of our practices if it hadn't been for the IDN."*
>
> —Administrator (2021)

Across IDNs, there was agreement that organizations are in a much better position to pivot very quickly, seek funding faster, and create community strategies to address population health needs at the local level in a much more efficient way than was previously possible before the DSRIP Demonstration's collaboration and integration activities were implemented.

Different key stakeholders in IDN 6 shared how their ability to leverage DSRIP funding as well as COVID relief funds allowed them to purchase warming huts to build upon their CTI project and community care team model to address the needs of highly vulnerable individuals in their community during a public health crisis. This is just one case example of a population health approach implemented during the DSRIP Demonstration that leveraged multiple federal funding streams to enhance mechanisms for directly interfacing with vulnerable individuals with behavioral health disorders in an innovative and sustainable way.

> *"When you deal with the really vulnerable populations, the homeless populations or others those that have a substance use issue or -- just any number of issues, but the homeless being one of the keys -- we did an innovation where we created a warming center in winters and were able to reach out to people at their most vulnerable. So, it was a no-barrier shelter where they could come in and if they had an abscess, if they had frostbite, if they had some other type of issue, when you deal with them in that area where they're most vulnerable -- we had our [community] care team, who we hired through the IDN for the most part -- some were within the organizations themselves but we had a group of five to six individuals that were acting as care managers. They would go scan the boundaries out in the community, but they would build relationships with these people and [get them] into primary care - or over to the hospital."*
>
> *"A success that I saw that ... was the most impactful was around what started as a critical time intervention group that did CTI work, which then became the community care coordination team. So it was critical time intervention model is what they started with, and that was tied in with the community care teams -- so that whole wraparound services for individuals, which also ended up overlapping into a lot with some temporary emergency warming centers that the IDN was involved with. Being able to do some of that CTI work with participants that were not housed stably who were in need of a mercy warming center several years ago, that model kind of took off, and I think that side of it went really well."*
>
> *"... those warming shelters, you know, that was started with two small agencies that had nothing to do with the IDN other than being loosely connected, and the IDN jumped into that. And, you know, because of COVID, we ended up getting, some rescue plan money and COVID money, CARES Act money that went into funding it where they bought a building, which I'm not sure what the future of that is, but, I mean, it looks like there's going to be emergency warming shelters on an annual basis at some level as a result of that. And that didn't exist five years ago [prior to DSRIP]."*
>
> - Key Stakeholders, IDN 6 (2021)

6.1.6.2 Improvements in Population Health

6.1.6.2.1 Broad Population Health Indicators

Compared to BRFSS respondents overall, respondents with Medicaid were more likely to report having worse general, physical, and mental health statuses. The percent of respondents reporting 14 or more days that mental health was "not good" during the previous month significantly declined between 2014 and 2018 for all respondents. However, New Hampshire had fewer respondents report fair or poor general health (13-14%) compared to national results in both years (17%).[79] While not significant, respondents with Medicaid had better self-reported general, physical, and mental health status in 2018 compared to 2014. Depression was also less prevalent in 2018 among this population.

Respondents who reported having 14 or more days of "not good" mental health during the past month (i.e., those with a behavioral health flag), were significantly more likely to report having better physical health in 2018 compared to 2014. Additionally, there were decreases in the percent of respondents reporting fair or poor general health or having even been told they had a depressive disorder.

Table 6.1-140. Broad Population Health Indicators

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years
All Respondents							
General Health - Responding "Fair or Poor"	144,693	14%	146,669	13%	-0.25	▼	No
Physical Health - 14 to 30 days "not good" per month	101,187	30%	121,867	32%	2.41	▲	No
Mental Health - 14 to 30 days "not good" per month**	109,146	31%	149,185	38%	6.66	▲	Yes
Poor Health - 14 to 30 days poor physical or mental health	76,174	36%	91,754	37%	0.60	▲	No
Ever told you have a depressive disorder	186,134	21%	198,954	21%	-0.11	▼	No
Medicaid Respondents							
General Health - Responding "Fair or Poor"	15,104	35%	18,962	27%	-8.60	▼	No
Physical Health - 14 to 30 days "not good" per month	12,962	59%	16,053	45%	-13.91	▼	No
Mental Health - 14 to 30 days "not good" per month**	13,804	60%	21,164	56%	-4.05	▼	No

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years
Poor Health - 14 to 30 days poor physical or mental health	12,843	65%	18,767	59%	-6.12	▼	No
Ever told you have a depressive disorder	24,499	56%	31,811	45%	-11.28	▼	No
Respondents with Behavioral Health Flag							
General Health - Responding "Fair or Poor"	45,958	42%	53,297	36%	-6.29%	▼	No
Physical Health - 14 to 30 days "not good" per month	40,969	62%	46,614	52%	-10.09%	▼	Yes
Poor Health - 14 to 30 days poor physical or mental health	37,353	63%	56,952	64%	1.47%	▲	No
Ever told you have a depressive disorder	72,252	66%	95,313	64%	-2.31%	▼	No

Source: NH BRFSS, 2014 and 2018
*percentages are rounded to the nearest whole number
** Respondents were flagged as having a behavioral health disorder if they had 14-30 days of poor mental health in the past month

6.1.6.2.2 Specific Health Indicators

6.1.6.2.2.1 Exercise
Between 2014 and 2018, there was a significant increase in the percent of respondents who reported not having any physical activity or exercise in the past 30 days. In 2014, 19% of respondents had no physical activity or exercise and this increased to 22% in 2018. The national rates for 2014 and 2018 were higher at 23% and 24%, respectively.[79]

For both years of data, respondents with a behavioral health flag were significantly more likely to report no physical activity or exercise compared to those without a behavioral health flag (p<0.0001). Among NH respondents with a behavioral health flag, the percentage of respondents who reported not having any physical activity or exercise increased from 31% to 34%. However, this was not statistically significant.

Table 6.1-141: Population Health Measures - Exercise

	2014		2018		Difference between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Exercise: All Respondents							
No physical activity or exercise in the past 30 days	203,941	19%	235,326	22%	2.25	▲	Yes
Exercise: All Respondents with BH Flag (14+ days of mental health not good)							
No physical activity or exercise in the past 30 days	33,979	31%	49,919	34%	2.31	▲	No
Exercise: All Respondents without BH Flag							
No physical activity or exercise in the past 30 days	169,963	18%	185,407	20%	1.73	▲	No

*percentages are rounded to the nearest whole number

6.1.6.2.2.2 Weight

For population health data related to weight, underweight and overweight respondents were grouped together due to the small sample size of respondents falling into the underweight category. Between 2014 and 2018, the percent of respondents with "normal" weight (based on respondents' calculated Body Mass Index) decreased overall for all respondents and respondents with a behavioral health flag, but these changes were not statistically significant. Of all respondents, NH had a higher percentage of respondents with normal weight for both years when compared to the national BRFSS results (2014: 35% vs. 33%, 2018: 34% vs. 32%).[79]

Table 6.1-142: Population Health Measures- Weight

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Weight: All Respondents							
Normal weight	346,330	35%	336,384	34%	-1.35	▼	No
Underweight or Overweight	372,228	38%	367,731	37%	-0.83	▼	No
Obese	271,408	27%	296,026	30%	2.18	▲	No
Weight: All Respondents with BH Flag (14+ days of mental health not good)							
Normal weight	41,386	42%	43,450	32%	-9.45	▼	No

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Underweight or Overweight	24,965	25%	43,041	32%	6.70	▲	No
Obese	33,424	34%	49,172	36%	2.75	▲	No
Weight: All Respondents without BH Flag							
Normal weight	304,944	34%	292,934	34%	-0.37	▼	No
Underweight or Overweight	347,263	39%	324,690	38%	-1.45	▼	No
Obese	237,984	27%	246,854	29%	1.82	▲	No

*percentages are rounded to the nearest whole number

6.1.6.2.2.3 Tobacco Use

Comparable to national trends, respondents in 2018 were less likely to be current smokers compared to respondents in 2014 (16% vs. 18%).[79] This decline was not statistically significant. Respondents with a behavioral health flag were significantly more likely to be a current smoker in both years (p<0.0001).

For the final report, there was limited data available to examine trends around e-cigarette use. Therefore, data from 2017 and 2018 were evaluated. Overall, respondents in 2018 were less likely to be current e-cigarette smokers compared to respondents in 2014 (21% vs. 24%). Similarly, respondents without a behavioral health flag were less likely to smoke e-cigarettes in 2018. However, among those with a behavioral health flag, there were more respondents who smoked e-cigarettes in 2018 than in 2017. These results were comparable to national results. Nationally in 2017, 22% of people smoked e-cigarettes every and/or some days compared to 23% in 2018.

Table 6.1-143: Population Health Measures- Tobacco

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Tobacco: All Respondents							
Current Smoker	176,499	18%	165,544	16%	-1.90	▼	No
Tobacco: All Respondents with BH Flag (14+ days of mental health not good)							
Current Smoker	44,025	42%	133,810	36%	-5.89	▼	No
Tobacco: All Respondents without BH Flag							

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Current Smoker	132,474	15%	369,141	14%	-1.13	▼	Yes

*percentages are rounded to the nearest whole number

Table 6.1-144: Population Health Measures – Tobacco (e-cigarette use)

	2017		2018		Difference between 2017 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Tobacco: All Respondents							
Current E-Cigarette Smoker			48,003	21%	-2.12	▼	No
Tobacco: All Respondents with BH Flag (14+ days of mental health not good)							
Current E-Cigarette Smoker	8,606	21%	15,385	25%	3.81	▲	No
Tobacco: All Respondents without BH Flag							
Current E-Cigarette Smoker	37,913	24%	32,618	20%	-4.09	▼	No

*percentages are rounded to the nearest whole number

6.1.6.2.2.4 Alcohol Use

Prevalence of alcohol use is based on respondents' recall of the last 30 days—heavy alcohol consumption is considered to be more than 14 drinks for men or more than 7 drinks for women per week; and, binge drinking is considered to be more than 5 drinks for men or more than 4 drinks for women on one occasion. There were no significant changes in heavy alcohol consumption or binge drinking between 2014 and 2018. The only notable, but not statistically significant difference, was the decline in binge drinking for the behavioral health population from 25% to 20%. Among all respondents and respondents with no behavioral health flag, binge drinking was relatively consistent with national results and heavy alcohol consumption was higher than national results. Respondents with a behavioral health flag consistently had higher rates than national BRFSS results.[79]

Among those with a behavioral health flag, rates of heavy alcohol consumption did not change and binge drinking decreased between the two years. In 2014, those with a behavioral health flag were significantly more likely to binge drink (p<0.05) than respondents without a behavioral health flag. In 2018, respondents with a behavioral health flag were significantly more likely to consume alcohol heavily than those without a behavioral health flag (p<0.05).

Table 6.1-145: Population Health Behaviors and Indicators – Alcohol Use

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	NH (National) Percent*	Weighted Frequency	NH (National) Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Alcohol: All Respondents							
Heavy Alcohol Consumption	69,382	7% (5%)	74,612	7% (6%)	0.22	▲	No
Binge Drinking	166,054	17% (15%)	166,926	16% (15%)	-0.67	▼	No
Alcohol: All Respondents with BH Flag (14+ days of mental health not good)							
Heavy Alcohol Consumption	10,232	10%	14,236	10%	0.18	▲	No
Binge Drinking	25,400	25%	27,146	20%	-5.17	▼	No
Alcohol: All Respondents without BH Flag							
Heavy Alcohol Consumption	59,149	7%	60,377	7%	0.10	▲	No
Binge Drinking	140,654	16%	139,780	16%	-0.28	▼	No

*percentages are rounded to the nearest whole number

6.1.6.2.2.5 Injuries

As shown in Table 6.1-148 , the number of falls resulting in an injury which limited regular activities for at least a day or needed a doctor visit was consistent between 2014 and 2018 (37%). This is similar but slightly better than the national BRFSS results of 40%.

Table 6.1-146. Population Health Behaviors and Indicators – Injuries

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Injuries							
Respondents with an injury from a fall	60,361	37%	63,771	37%	0.12	▲	No

*percentages are rounded to the nearest whole number

6.1.6.2.3 Preventive Screening

6.1.6.2.3.1 Breast Cancer

The U.S. Preventive Services Task Force (USPSTF)[80] and American College of Physicians (ACP)[81] recommend women aged 50-74 have biennial mammograms for breast cancer screening. This measure calculates the percentage of women 50-74 years of age that had a biennial mammogram screening for breast cancer.

Nationally, 72% to 73% of women aged 40 or more years and 78% of women aged 50-74 years received a mammogram in the past 2 years.[79] Respondents in NH were more likely to have received a mammogram than national results. Specifically, 76% to 79% of women respondents aged 40+ and 83% of women respondents aged 50-70 years received a mammogram in the past 2 years. In 2018, there were fewer women aged 40+ years who received a mammogram in the past 2 years compared to 2014. Claims analysis, described in Measure 1.2.13 (Breast Cancer Screening) showed that far fewer New Hampshire Medicaid Beneficiaries with a behavioral health disorder received screenings during the study period (38% in the pre-Demonstration period and 46% in the Demonstration period).

Table 6.1-147. Breast Cancer Screenings – BRFSS Data

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
Mammograms (Past 2 Years)							
Respondents Aged 40+	273,320	79%	264,667	76%	-3.67	▼	No
Respondents Aged 50-74	177,467	83%	183,244	83%	-0.27	▼	No

*percentages are rounded to the nearest whole number

6.1.6.2.3.2 Prostate Cancer

The U.S. Preventive Services Task Force (USPSTF)[82] recommends men aged 55-69 have prostate specific antigen (PSA) for prostate cancer screening. This measure calculates the percentage of men 40+ years of age that had a PSA screening for prostate cancer.

As shown in Table 6.1-150 , there were significantly fewer men who received a PSA test in 2018 (31%) than in 2014 (39%). Similar to trends in New Hampshire screening rates, nationally there were fewer men screened for prostate cancer in 2018 (33%) than in 2014 (43%).[79]

Table 6.1-148. Prostate Cancer Screenings - BRFSS Data

	2014		2018		Difference Between 2014 and 2018		
	Weighted Frequency	Percent*	Weighted Frequency	Percent*	Change in Percentage Points	Trend	Significant Difference Between Years (p<0.05)
PSA (Past 2 Years)							
Respondents Aged 40+	115,962	39%	91,631	31%	-8.51	▼	Yes

*percentages are rounded to the nearest whole number

6.1.7   Summary

The first hypothesis for Research Question 1 is "Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area." Analysis of the data uncovered mixed results; however, the majority of measures were supportive or partially supportive of the Waiver's goal (Table 6.1-151). Clear progress was made in the following performance metrics:

- Follow-up care for children prescribed ADHD medication in the continuation and management phase.
- Emergency department visits.
- Potentially preventable emergency department visits.
- Initiation and engagement of alcohol and other drug dependence treatment for adults.

In some cases, improvements were not observed until the Demonstration pandemic period. This is true of the following performance metrics:

- Antidepressant medication management.
- Follow-up after hospitalization for mental illness.
- Adherence to antipsychotic medications for people with diabetes and schizophrenia. The measure was trending in the right direction in the Demonstration period, but the change was not significantly different from the pre-Demonstration period.

Additional outcomes to note:

- In the case of use of opioids at high dosage, improvement was noted in the Demonstration period for the unmatched behavioral health sample, but not in the pandemic period.
- Although the likelihood of adolescent well care visits declined in the post periods, the decline for the behavioral health population was significantly smaller than the non-behavioral health population.

The areas of access to and quality of care presented a mixed picture of results with a decline in frequent ED visits and potentially avoidable ED visits. While, any ED use remained unchanged over the period, reduction in the other two ED-related performance metrics provided evidence that inappropriate use of the ED was positively impacted by the intervention strategies implemented as part of the DSRIP Demonstration. This finding is further substantiated by improvements in 7 and 30 day follow-up rates with a behavioral health provider after a mental health related ED visit. Follow-up care after a behavioral health related ED visit ensured continuity of care for Beneficiaries in the community. In addition, follow-up visits played an essential role in reducing frequent ED visits and preventable hospital admissions and facilitated improved health outcomes for individuals with behavioral health conditions. Moreover, improvement in antidepressant management, follow-up after mental health hospitalizations, and various outcomes for adolescents

(measures 1.1.9, 1.1.11, 1.1.16) provided further evidence of the Demonstrations impact on the management of behavioral health services. Use of electronic health records, prior authorization for monitoring of children's antipsychotic and ADHD medications are evidence of the supportive infrastructure provided by the support of the demonstration for improved care management.

Table 6.1-149. Outcomes of Hypothesis 1.1

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
1.1.1	Experiences of Health Care with DSRIP	Partially Supported	Qualitative data collected from Beneficiaries indicate overall satisfaction with their quality of care both during and after the Demonstration, with a perception of marked increase in access via telehealth during 2020, and no decrease in reported access to care and quality of care during the pandemic.
1.1.2	Antidepressant Medication Management	Partially Supported	There were significant increases for antidepressant medication management in the pandemic periods for both the acute and continuous phases. Despite only seeing significant changes in the pandemic period, this measure was considered partially supported (instead of not supported) as NH was able to see significant positive changes in medication management during the DSRIP Demonstration when access to health care was a challenge due to the pandemic.
1.1.3	Follow-Up After Hospitalization for Mental Illness	Partially Supported	There was a significant decrease in follow-ups within 30 days in the post-period, however there was a significant increase in follow-ups within 7 and 30 days after hospitalizations for mental illness in the pandemic period. Despite seeing significant increases in the pandemic period, this measure was considered partially supported (instead of not supported) as NH was able to see significant positive changes in follow-ups after hospitalizations for mental illness during the DSRIP Demonstration when access to health care was a challenge due to the pandemic.
1.1.4	Initiation and Engagement of Alcohol and Other Drug Dependence	Partially Supported	Initiation and engagement of alcohol and other drug dependence treatment for adults within 14 days significantly improved in the pandemic period and

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
	Treatment		within 30 days in both the post and pandemic periods. There were no significant changes for the adolescent population (ages 13-17).
1.1.5	Adherence to Antipsychotic Medications for Individuals with Schizophrenia	Partially Supported	Individuals with schizophrenia significantly adhered to antipsychotic medications in the pandemic period. Despite only seeing significant changes in the pandemic period, this measure was considered partially supported (instead of not supported) as NH was able to see significant positive changes in medication adherence during the DSRIP Demonstration when access to health care was a challenge due to the pandemic.
1.1.6	Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications	No	There were no significant improvements of diabetes screening for people with schizophrenia or bipolar disorder who were using antipsychotic medications. Unfortunately, there was a significant decrease in diabetes screening during the pandemic period.
1.1.7	Diabetes Monitoring for People with Diabetes and Schizophrenia	No	There were no significant improvements of diabetes monitoring for people with diabetes and schizophrenia. Unfortunately, there was a significant decrease in diabetes monitoring during the post and pandemic periods.
1.1.8	Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia	No	There were no significant changes of cardiovascular monitoring for people with cardiovascular disease and schizophrenia.
1.1.9	Follow-up Care for Children Prescribed ADHD Medication	Partially Supported	Although there is an increase in follow-up over time, the initiation phase of follow-up care for children prescribed ADHD medication did not significantly change - but the continuation & management phase of follow-up care for children prescribed ADHD medication significantly improved in the post period.
1.1.10	Metabolic Monitoring for Children and Adolescents on	No	There were no significant changes of metabolic monitoring for children and adolescents on antipsychotics.

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
	Antipsychotics		
1.1.11	Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics	No	There were no significant improvements in the utilization of first-line psychosocial care for children and adolescents on antipsychotics. Unfortunately, there was a significant decrease during the pandemic period.
1.1.12	USPSTF: Cervical Cancer Screening	No	While cervical cancer screening rates did improve, the change over time was not statistically significant.
1.1.13	Breast Cancer Screening	No	There were no significant improvements in breast cancer screening rates. For the unmatched behavioral health group, there were significantly fewer screenings during the pandemic period.
1.1.14	USPSTF: Colorectal Cancer Screening	No	While colorectal cancer screening rates did improve, the change over time was not statistically significant.
1.1.16	Adolescent Well Care Visit	Yes	The behavioral health population experienced a greater improvement in rates of adolescent well care visits than the non-behavioral health population during the post and pandemic periods.
1.1.18	Emergency Department (ED) Visits	Yes	Emergency department visits significantly decreased for the Beneficiaries with the most risk (unmatched behavioral health group) in both the post and pandemic periods.
1.1.19	Potentially Preventable Emergency Department (ED) Visits	Yes	Potentially preventable emergency department visits significantly decreased for the Beneficiaries with the most risk (unmatched behavioral health group) in both post and pandemic periods.
1.1.20	Use of Opioids at High Dosage	Partially Supported	Use of opioids at high dosage significantly decreased for the Beneficiaries with the most risk (unmatched behavioral health group) in the post period.

Many of the IDNs saw improvements during the Demonstration period that point to the impact of the Demonstration's impact at both the state and the region level. Despite the

rate of ED use remaining unchanged, all the IDNs experienced a lower likelihood of frequent ED visits and most had reduced preventable ED visits. On the other hand, none of the IDNs showed improvement in use of first-line psychosocial care for children and adolescents on antipsychotics or on the likelihood of an adolescent well-child visit (Table 6.1-152). shows significant results by IDN and additional findings by IDN are outlined below the table.

Table 6.1-150 Hypothesis 1.1 Analysis by IDN

Measure Description		IDNs in which Measure Supports Hypothesis ● Significant Improvement						
		IDN 1	IDN 2	IDN 3	IDN 4	IDN 5	IDN 6	IDN 7
Quality of Care	1.1.2 Antidepressant Medication Management							
	1.1.3 Follow-Up After Hospitalization for Mental Illness		●	●				
	1.1.4 Initiation and Engagement of Alcohol and Other Drug Dependence Treatment			●				●
	1.1.6 Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications	●						
	1.1.9 Follow-up Care for Children Prescribed ADHD Medication		●	●	●		●	
	1.1.10 Metabolic Monitoring for Children and Adolescents on Antipsychotics				●	●	●	
	1.1.11 Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics							
Access	1.1.16 Adolescent Well Care Visit	●						
Service Utilization	1.1.18 Emergency Department (ED) Visits (Service Utilization)	●	●	●	●	●	●	●
	Potentially Preventable Emergency Department (ED) Visits	●	●	●	●		●	●

Table 6.1-153 below provides a more detailed summary of IDN specific outcomes related to access to care, service utilization and quality of care.

Table 6.1-151 IDN Specific Improvements in Access to Care, Service Utilization and Quality of Care

IDN	IDN Specific Improvements
1	• Improvement in antidepressant medication management in the Demonstration Pandemic period (not statistically significant) • Increased diabetes screening for people with schizophrenia or bipolar disorder who are using antipsychotic medications • Lower odds of frequent ED use • Lower odds of potentially preventable ED visits
2	• Increased follow–up after hospitalization in the Demonstration Pandemic period • Increase in initiation and engagement of alcohol and other drug dependence treatment in the post-Demonstration Pandemic period for adults in 30 days (not statistically significant) • Higher likelihood of follow-up for children prescribed ADHD medication in the continuation and management phase • Lower odds of frequent ED use • Lower odds of potentially preventable ED visits
3	• Improvement in antidepressant medication management in the Demonstration Pandemic (not statistically significant) • Increased follow–up after hospitalization in the Demonstration pandemic period • Increased initiation and engagement of alcohol and other drug dependence treatment in the Demonstration and Demonstration Pandemic periods for adults in 14 and 30 days • Higher likelihood of follow-up for children prescribed ADHD medication in the continuation and management phase • Lower odds of frequent ED use • Lower odds of potentially preventable ED visits
4	• Increased follow–up after hospitalization in the Demonstration Pandemic period • Higher likelihood of follow-up for children prescribed ADHD medication in the continuation and management phase • Improvement in metabolic monitoring of children and adolescents on antipsychotics • Lower odds of frequent ED use • Lower odds of potentially preventable ED visits
5	• Improvement in antidepressant medication management in Demonstration the Demonstration Pandemic (not statistically significant) • Improvement in metabolic monitoring of children and adolescents on antipsychotics. • Lower odds of frequent ED use
6	• Higher likelihood of follow-up for children prescribed ADHD medication in the continuation and management phase. • Improvement in metabolic monitoring of children and adolescents on antipsychotics • Lower odds of frequent ED use • Lower odds of potentially preventable ED visits
7	• Improvement in antidepressant medication management in the Demonstration Pandemic period (not statistically significant) • Lower odds of frequent ED use • Lower odds of potentially preventable ED visits

Hypothesis 1.2 says that "individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area." Five measures were analyzed to determine whether the Demonstration supported the hypothesis. Analysis of these performance metrics showed that access to care improved after the implementation of the Demonstration; outcomes are shown in Table 6.1-154 . A few outcomes of note:

- Utilization of substance use treatment services increased significantly in both the Demonstration and Demonstration Pandemic periods.
- Although the likelihood of adolescent well care visits declined in the post periods, the decline for the behavioral health population was significantly smaller than that of the non-behavioral health population.
- The odds of having an annual primary care visit declined among Beneficiaries with a behavioral health disorder, but the decrease was significantly smaller than the non-behavioral health population.

Over the study period, Beneficiaries with behavioral health disorders had greater access to primary care and ambulatory/preventive care than Beneficiaries without behavioral health disorders; however, increased access to primary and ambulatory/preventative care has not had an impact on reducing the use of ED services among this population as rates did not decline during the Demonstration. However, the Demonstration did have a positive impact on potentially preventable ED visits, which occurred at a time when access to primary care, ambulatory, and preventive services were declining. Beneficiaries with mental illness have a very high rate of access to these services preventative care services (over 90%) such that improvement in these measures may be less possible.

While NH Medicaid is above the National Medicaid Benchmark for this measure, adolescent well care (AWC) is historically an area for improvement in all Medicaid children. While the rate of decline for adolescents with behavioral health disorders was lower than adolescents without behavioral health disorders, the significant decline over the study period is concerning.

The decline in ambulatory and preventive care is troubling when measures of chronic condition disease management (measures 1.1.6, 1.1.7, 1.18), key disease focus areas, showed a decline as well. Further troubling is the decline in preventive screening (measures 1.1.12, 1.1.13, 1.1.14) over the period, suggesting increasing problems with access to primary/preventive care. Confounders of these statistics are the move to managed care (2014) and the Expansion program (2015), its inclusion in the New Hampshire Health Protection Program (NHHPP) Premium Assistance Program (PAP) (2016-2018), which transitioned back to Medicaid managed care under the Granite Advantage Health Care Program (2019). Expansion members in both populations had significantly lower rates of access.

Table 6.1-152. Outcomes of Hypothesis 1.2

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
1.2.1	Member Experiences of Accessing Care (Beneficiary Interviews)	Partially Supported	Qualitative data collected from Beneficiaries indicate overall satisfaction with their quality of care both during and after the Demonstration, with a perception of marked increase in access via telehealth during 2020 (pandemic period), and no decrease in reported access to care and quality of care during the pandemic.
1.2.3	Annual Primary Care Visit	Partially Supported	The overall population saw a significant decrease in annual primary care visits, however the behavioral health group's decrease was lower than the non-behavioral health group's decrease during the post and pandemic periods.
1.2.4	Behavioral Health Care Visits	No	There were no significant improvements in behavioral health care visits, and there was a significant decrease in the pandemic period.
1.2.5	Substance Use Treatment Services	Yes	Substance use treatment services significantly improved in both the post and pandemic periods.
1.2.6	Adolescent Well Care Visit	Partially Supported	The overall adolescent population saw a significant decrease in well care visits, however the behavioral health group's decrease was lower than the non-behavioral health group's decrease during the post and pandemic periods.

There were no notable improvements in hypothesis 1.2 (access to care domain) for any of the IDNs.

Table 6.1-153. Outcomes of Hypothesis 1.3

Measure ID	Measure Description	Measure Supports Hypothesis	Analysis Notes
1.3.1	Strategies to Improve Population Health (Administrator and Provider Interviews)	Yes	Data from provider, administrator interviews indicated the perception that the Demonstration made IDNs and partner organizations more responsive to population health needs through improved capacity related to integration of care, care transitions, and comprehensive screening.
1.3.2	Improvements in	No	Most BRFSS indicators could not be calculated

Measure ID	Measure Description	Measure Supports Hypothesis	Analysis Notes
	Population Health (BRFSS)		for respondents with Medicaid. Among Medicaid respondents, there were no significant changes in general, physical, or mental health. Among all respondents with a behavioral health flag (i.e., 14-30 days of poor mental health in the past month), there were significantly more respondents with "not good" physical health in 2018 compared to 2014. Additionally, exercise, weight, and injury indicators did not show positive trends. Tobacco usage did decrease overall, however among respondents with a behavioral health flag there were no significant changes. Significant changes were not seen with the alcohol use indicators.

Hypothesis 1.3 states "population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market areas." The DSRIP Demonstration in NH aimed to improve access and quality of care for Medicaid Beneficiaries by enhancing local delivery systems and in turn implementing strategies that would address public health priorities. It was anticipated that population health indicators would improve as a result of the Demonstration.

Population health indicators for the BRFSS data were related to general health, exercise, weight, tobacco use, alcohol use, and injuries and preventive screening. There were a few notable differences observed in the BRFSS population between survey years 2014 and 2018:

- Increase in the overall New Hampshire population who reported "not good" mental health days in the last 30 days, but a decrease for this response by the Medicaid population.
- There were significantly more respondents who reported no physical activity/exercise or inactivity in the past 30 days.
- A promising trend in the state is a statistically significant decrease in the number of respondents who were current smokers for the non-behavioral health population. The trend for the behavioral health subpopulation is also decreasing, although the difference between 2014 and 2018 was not statistically significant.
- Significant decrease of 8.5% in men who received a PSA in the past 2 years between 2014 and 2018.

Data from provider surveys and interviews indicated that providers believed that the Demonstration made their organizations more responsive to population health needs through improved capacity related to integration of care, care transitions, and comprehensive screening; this perception was triangulated and substantiated with qualitative data gathered in the Administrator interviews.

Hypotheses 1.4 states "cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after implementation of DSRIP regardless of IDN, geographic location, or market area." The behavioral health population has always had significantly higher costs than those without behavioral health disorders. Encouraging results showed a decrease in costs for all populations over the study period. However, in most cases, the rate of decrease was significantly less for the behavioral health population. As a result, analysis of costs do not support the hypotheses for most statewide cost comparisons.

There are two exceptions where cost comparisons saw positive outcomes:

- One exception is the cost for emergency department care. Although the percentage of beneficiaries with at least one visit to the ED remained the same in the Demonstration period and PMPM costs increased, the increase was significantly less than the comparison group (non-behavioral health sample).
  - In analysis of Frequent ED use, Beneficiaries with a behavioral health diagnosis were significantly more likely to be a repeat user of the ED. Reduction of repeat ED use resulted in reduction of costs. The improved communication and use of technology for coordination of care developed in DSRIP to better monitor when someone uses the ED and the subsequent improved performance on follow-up by a mental health professional after the ED visit support a positive outcome for the DSRIP Demonstration.
- The other exception is cost of outpatient care. Although both the behavioral health and non-behavioral health populations had a lower likelihood of any outpatient visit in the post and pandemic periods, the decline was smaller for the behavioral health population. However, the PMPM costs for the non-behavioral health population with at least one outpatient visit increased in the Demonstration period, while costs for the behavioral health population declined. Costs declined for both populations in the pandemic period, with the behavioral health population experiencing a significantly larger decline.
  - While use of outpatient services declined for both populations in both the Demonstration and Pandemic periods, the rate of decline was significantly less for the behavioral health population. Where this same pattern was exhibited for those with other chronic conditions, costs of services provided to the behavioral health population were additional to those that were required to treat the physical chronic condition. Pharmacological treatments for behavioral health were apt to exacerbate these chronic conditions, thus contributing to more difficulty controlling the condition - with added costs of services a result.

Table 6.1-154. Outcomes of Hypothesis 1.4

Measure	Measure Name	Measure Supports Hypothesis	Analysis Notes
1.4.1	Total Cost of All Care	No	There was a decrease in the total PMPM cost between the pre-Demonstration and Demonstration as well as Demonstration Pandemic periods for Beneficiaries with and without a behavioral health disorder. However, the total cost of all care for the behavioral health population (per member per month) was significantly higher in the Demonstration and Demonstration Pandemic periods when compared to the non-behavioral health population. In addition, there was a significant increase in the total cost of all care for the Beneficiaries with the most risk (unmatched behavioral health group) in the post-period however, costs significantly decreased among this high risk population in the Demonstration pandemic period.
1.4.2	Total Cost of All Inpatient Care	No	The total cost of all inpatient care for the behavioral health population (per member per month) was not significantly lower in the Demonstration and Demonstration Pandemic periods compared to the non-behavioral health group. Although there was a significant increase in the total cost of all inpatient care for the Beneficiaries with the most risk (unmatched behavioral health group) in the post-period, costs significantly decreased in the Demonstration pandemic period.
1.4.3	Total Cost of All Outpatient Care	Partially Supported	The small, but statistically significant decrease in the Demonstration period for the behavioral health group as compared to the non-behavioral health group, which had an increase in outpatient cost, suggest some impact by DSRIP. However, the lack of a significant change in the behavioral health group, those Beneficiaries with the highest needs, resulted in designating this measure as partially met.
1.4.4	Total Cost of Emergency	Yes	Although there was a significant increase in the total cost of behavioral health care

Measure	Measure Name	Measure Supports Hypothesis	Analysis Notes
	Department (ED) Care		for the behavioral health population in the Demonstration period, that increase was significantly less for the behavioral health group vs the non-behavioral health group. For the Beneficiaries with the most risk (unmatched behavioral health group) costs significantly decreased in the Demonstration pandemic period.
1.4.5	Total Cost of Behavioral Health Care	No	There was a significant increase in the total cost of behavioral health care for the behavioral health population in the post-period, although costs significantly decreased in the Demonstration pandemic period.
1.4.6	Total Cost of Inpatient Behavioral Health Care	No	While the total cost of inpatient behavioral health care significantly decreased for the behavioral health population in the Demonstration pandemic period (2020), costs did not significantly decrease in the Demonstration period.
1.4.7	Total Cost of Outpatient Behavioral Health Care	No	The total cost of outpatient behavioral health care significantly increased for the behavioral health population in the Demonstration period, but costs did significantly decrease in the Demonstration pandemic period.
1.4.8	Total Cost of Emergency Department (ED) Behavioral Health Care	No	While the total cost of emergency department behavioral health care significantly decreased for the behavioral health population in the Demonstration pandemic period (2020), costs did not significantly decrease in the Demonstration period.

Further examination of cost measures indicates that all but one of the IDNs met the goal of reducing at least one cost measure. Table 6.1-157 is a summary of significant improvements by IDN.

Table 6.1-155. Hypothesis 1.4 Analysis by IDN

Measure Description		IDN 1	IDN 2	IDN 3	IDN 4	IDN 5	IDN 6	IDN 7
		IDNs in which Measure Supports Hypothesis ● Significant Improvement						
Costs	1.4.1 Total Cost of All Care							
	1.4.2 Total Cost of All Inpatient Care							
	1.4.3 Total Cost of All Outpatient Care	●	●			●		
	1.4.4 Total Cost of All ED Care		●	●		●		●
	1.4.5 Total Cost of Behavioral Health Care	●	●					
	1.4.6 Total Cost of Inpatient Behavioral Health Care		●					
	1.4.7 Total Cost of Outpatient Behavioral Health Care	●						
	1.4.8 Total Cost of All Outpatient Care	●	●		●			

Many IDNs saw improvements, not necessarily significant, during the Demonstration period. The following is a summary by IDN:

Table 6.1-156 Improvements in Service Utilization by IDN

IDN	Service Utilization Improvements
1	• Lower odds for outpatient visits and lower PMPM costs in the Demonstration period • Lower PMPM total costs for behavioral health care • Lower PMPM costs in all Demonstration periods • Lower odds for any ED behavioral health visit but PMPM costs for those with any visit did not change significantly
2	• Lower odds for outpatient visits and lower PMPM costs in the Demonstration period • Lower odds and PMPM costs in Demonstration and or ED • Lower PMPM total costs for behavioral health care • Lower inpatient behavioral health care costs in Demonstration period; odds of any admission did not change. • Lower odds of a behavioral health ED visit in the Demonstration and Demonstration pandemic period (2020) and lower costs in the Demonstration pandemic period.
3	• Lower odds of an ED visit and lower PMPM costs for those with any visit in both Demonstration periods.
4	• Small decrease in the odds of a behavioral health ED visit
5	• Lower odds of an outpatient visit and lower PMPM costs for those who had a visit. • Lower odds of an ED visit and lower PMPM costs for those who had a visit.
6	• Did not show improvement on any cost measures
7	• Lower odds of an ED visit

Table 6.1-157. IDNs Supporting Hypothesis 1.5, 1.6 and 1.8

.Measure Description		IDNs in which Measure Supports Hypothesis ● Significant Improvement * Significant Improvement during Demonstration Pandemic Period (2020)						
		IDN 1	IDN 2	IDN 3	IDN 4	IDN 5	IDN 6	IDN 7
Quality of Care	1.5.1 Hospital Readmission for Behavioral health	●	●			●		
	1.5.2 Hospital Readmission for Any Cause	●	●			●		
Service Utilization	1.6.1 Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders *Measure supported by significant improvements in ACS chronic admissions measure*	●	●	●		●	●	●
Service Utilization	1.8.1 LOS for inpatient psychiatric care		*					

One of the goals of the Demonstration is to reduce utilization of high-cost services such as hospital readmissions, ambulatory care sensitive readmissions, long stays at psychiatric hospitals, frequent ED visits, and potentially preventable ED visits. For the behavioral health population, service utilization trends showed some positive results.

Most of the ED measures, hospital readmissions and ambulatory care admissions experienced declines over time. The following significant trends were observed for the study population:

- ◆ 1% decrease in prevalence of Frequent Non-Mental Health or Chemical Dependence Outpatient Emergency Department Visits (unadjusted results);

- ◆ Decrease in Potentially Preventable ED Visits (per 1,000) by 5.5 for the behavioral health population and 3.7 for the non-behavioral health population; and

- ◆ Decrease in Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders (per 1,000) by 2.9 times for the Prevention Quality Overall Composite, by 2 times for Prevention Quality Acute Composite, and 1 time for Prevention Quality Chronic Composite.

Although statistically significant declines were observed for the behavioral health and non-behavioral health populations for all of the ED measures, the downward trend for the behavioral health population was significantly greater than the trend for the non-behavioral health group.

Progress made on the reduction in ED use coupled with the improved follow-up with a mental health practitioner observed in Section 6.2.2 provides further evidence of improved care coordination following these complicated events, facilitated by the Event Notification System and closed loop referrals systems implemented through the Demonstration.

The reduction in ambulatory sensitive (ASC) admissions for the very complex behavioral health sample, those who were not able to be propensity matched, is noteworthy, and suggest better access to primary/preventive care. The ambulatory sensitive admissions are related to physical medical conditions either acute (dehydration, bacterial pneumonia, or urinary tract infection (UTI)) or chronic conditions (diabetes short-term complications, diabetes long-term complications, chronic obstructive pulmonary disease (COPD) or asthma, hypertension, heart failure, uncontrolled diabetes, asthma in younger adults, and lower-extremity amputation among patients with diabetes). Beneficiaries with behavioral health diagnosis had higher rates of ASC admissions than those without behavioral health disorders thus providing more opportunity for improvement. The decline in ASC admissions was significantly greater for Beneficiaries with behavioral health disorders than those without.

Table 6.1-158 Outcomes of Hypotheses 1.5, 1.6, and 1.8

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
1.5.1	Hospital Readmission for Behavioral Health Disorder	No	There were no significant changes in hospital readmissions for behavioral health disorders.
1.5.2	Hospital Readmission for Any Cause	No	There were no significant changes in hospital readmissions for any cause.
1.6.1	Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders	Partially Supported	There were no significant changes in any Demonstration periods when comparing the behavioral health group to the non-behavioral health group's change over time. However, among the Beneficiaries with the most risk (unmatched behavioral health group), there were significant decreases in both Demonstration periods for the overall and acute composites. However, for the chronic composite, significant decreases were only seen during the Demonstration pandemic period.
1.8.1	Length of Stay for Inpatient Psychiatric Care	No	There were no significant improvements in the length of stay for inpatient psychiatric care measure, overall. Among the Beneficiaries with the most risk (unmatched behavioral health group), there were significant increases in the length of stay for inpatient psychiatric care during both Demonstration periods.

For readmissions, there were overall lower and insignificant changes across IDNs. IDN 2 was significantly and IDN 5 decreased more than IDN 2. For the ACS measure, the Demonstration goal of decreasing service utilization was met for the unmatched group (the highest risk Beneficiaries), but not for the matched sample.

Table 6.1-159 Outcomes for Hypotheses 1.6 and 1.8 by IDN

Measure Description		IDNs in which Measure Supports Hypothesis ● Significant Improvement * Significant Improvement during Demonstration Pandemic Period (2020)						
		IDN 1	IDN 2	IDN 3	IDN 4	IDN 5	IDN 6	IDN 7
Service Utilization	1.6.1 Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders *(chronic)*	●	●	●		●	●	●
Service Utilization	1.8.1 Length of Stay for Inpatient Psychiatric Care		*					

6.2 Research Question 2
Integration of Care

6.2.1 Overview & Discussion of Hypotheses

> To what extent has the DSRIP Demonstration improved integration and coordination between providers? To what extent has the DSRIP Demonstration fostered the bi-directional and integrated delivery of physical health services, behavioral health services, SUD services, transitional care, and alignment of care coordination to serve the whole person? Was there any variation between IDNs/geographic regions/market areas?

Research Question 2 focuses on one domain of the Demonstration's evaluation—integration and care coordination. The associated hypothesis postulates that regardless of IDN, geographic location or market area, when compared to before the Demonstration, integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP demonstration. Table 6.2-1 contains the hypothesis and outcome of Research Question 2.

Table 6.2-1. Research Question 2 Summary-at-a-Glance

Waiver Goal: Improve Health Care Integration and Coordination for Beneficiaries	
Research Question 2 Hypothesis	**Analysis Supports Hypothesis**
H2.1 Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP demonstration	Yes
Summary: 1 hypothesis supported	
Research Question 2: Results support waiver goal	

Summary at a Glance

Research Question two had one hypothesis—integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area. Five measures supported this hypothesis; seven partially supported this hypothesis; and four did not support this hypothesis. **As the majority of the measures either fully or partially supported the hypothesis, it was determined that the DSRIP Demonstration successfully improved integration and coordination between providers.**

Data collected through Administrator and Provider interviews indicated that the Demonstration had a positive impact on organizational and provider ability to enhance care integration and coordination. Feedback from the IDN Provider survey further supported this finding. Moreover, Medicaid claims showed improvements in rates of mental illness ED visit

follow-ups within 30 days, as well as alcohol/drug dependence ED visit follow-up within 30 days. Rates of follow-ups after hospitalization for mental health related visits did not improve during the Demonstration period; however they did improve during the Demonstration Pandemic period. Patient perspectives on care integration and coordination, obtained through Beneficiary interviews, were mixed. Despite some positive trends, the Beneficiary survey did not fully support the integration and coordination hypothesis, and claims data showed an increase in fragmented care over time.

6.2.2 Integration of Care

Integration of Care Key Findings

Receiving Integrated and Coordinated Care

- There was an increased likelihood of fragmented care among both the behavioral health and non-behavioral health populations between the pre-Demonstration and Demonstration periods;
- There were significant increases in fragmented care in the Demonstration periods among Beneficiaries with the highest risk (i.e., those in the unmatched behavioral health sample);
- The Receipt of Necessary Care Composite showed most Beneficiaries felt they were able to receive necessary care throughout the three survey waves, with an increase between Waves 1 and 2, but a slight decrease in Wave 3;
- The Timely Receipt of Necessary Care Composite showed most Beneficiaries felt positively about timely receipt of care throughout the three survey waves, with a slight increase in the composite's score from Wave 1 to Wave 2, but a decrease in Wave 3;
- The Care Coordination Composite showed most Beneficiaries felt positively about care coordination throughout the three survey waves, with a slight increase in the composite's score from Wave 1 to Wave 2, but a decrease in Wave 3; and
- The Behavioral Health Composite showed most Beneficiaries were asked questions about feeling sad, empty, or depressed; talked about things causing worry and stress; and talked about personal programs, family problems, alcohol use, drug use, or a mental or emotional illness.

Hospitalization and Emergency Department Follow-Ups

- Follow-up visits within 7 days after a mental health hospitalization were more likely to occur during the Demonstration pandemic period;
- Follow-up visits within 30 days after a mental health hospitalization were more likely to occur during Demonstration and Demonstration pandemic periods;
- Follow-up visits within 30 days after a mental illness related ED visit related were more likely to occur in the Demonstration period; and
- Follow-up visits for alcohol/drug dependence related ED visits were more likely in the Demonstration and pandemic periods.

Personal Experiences with Care Coordination and Integration

◆ IDN providers indicated that a number of strategies implemented as part of the Demonstration were successful at promoting care integration and transitions. There was increased belief in 2021 among providers that improved reimbursement, development of clinical workflows for shared care, and enhanced communication for HIT improved integrated care.

◆ Beneficiaries who discussed receiving behavioral healthcare reported that their primary care physician had the capacity to manage their behavioral health care needs or reported receiving integrated, team-based, or co-located care. They also indicated being asked social determinants of health screening questions included in the CCSA, a component of the B1 care integration project.

◆ Key informants overwhelmingly reported that DSRIP changed the way that care was delivered to NH Medicaid Beneficiaries with behavioral health disorders through system and culture transformation, including

- an increased awareness, understanding, and adoption of comprehensive patient-centered care; and
- the formation of inter-organizational relationships to support the delivery of integrated models of care.

6.2.2.1 Fragmented Care

Current thinking about how best to improve health outcomes for persons with chronic medical conditions[63] stresses the importance of the patient and provider being engaged in a continuous, collaborative relationship. The DSRIP measure of Fragmented Care is based on work by Liu et al.[83] which calculates a continuity of care (COC) measure as a method for engaging patient-provider relationships. COC considers the total number of visits to primary care practices (PCP), the number of different PCP practices, and the number of visits to each practice. The COC runs from 0 (continuous care-all visits to the same PCP) to 1 (each visit takes place at a different PCP site). Persons were ranked based on COC score for the pre-Demonstration period with those above the 75th percentile distribution considered to have fragmented care. In creating the fragmented care measure, members without a primary care visit are removed. Figure 6.2—1 presents the percentage of Beneficiaries without a primary care visit over the study period.

Figure 6.2—1. Percentage Of Beneficiaries Without a Primary Care Visit – Unadjusted
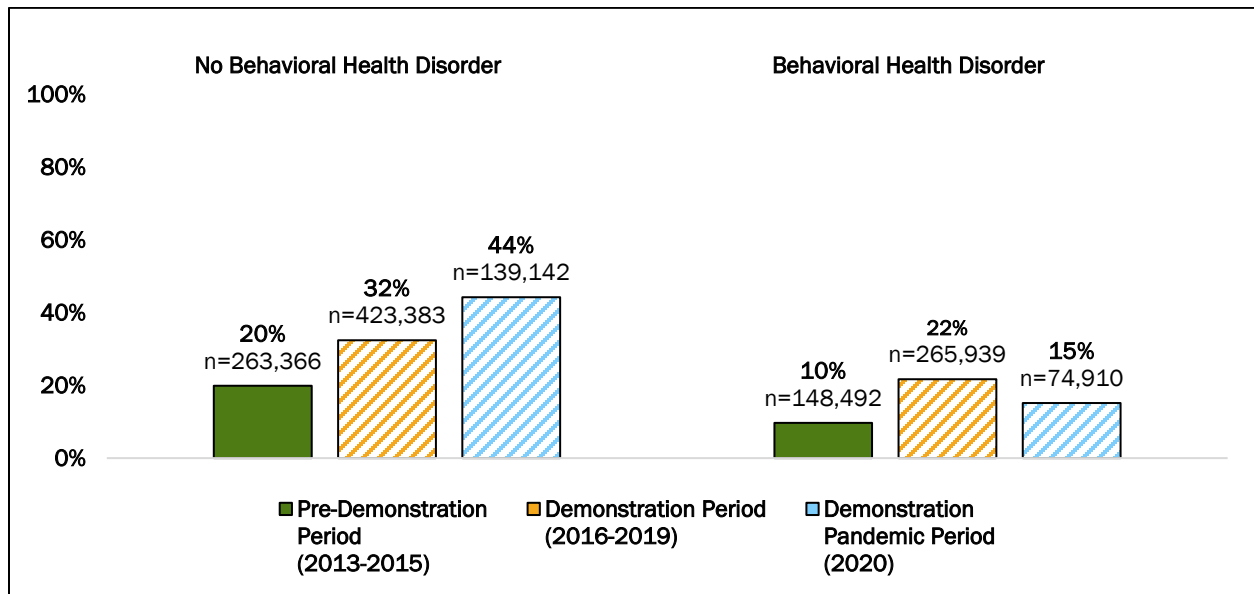
*Pattern within a column indicates significant change from Pre-Demonstration period

Beneficiaries without behavioral health disorders were more likely to have no primary care visits than beneficiaries with a behavioral health disorder during the study period. Both groups experienced significant changes over the study period. More Beneficiaries went without primary care visits during the Demonstration period. During the Demonstration Pandemic Period, more Beneficiaries without a behavioral health disorder went without primary care visits compared to Beneficiaries with a behavioral health disorder. Thus, a subset of Beneficiaries (75%) had the fragmented care indicator calculated.

Fragmented care for Beneficiaries with and without a behavioral health disorder increased significantly between the pre-Demonstration and the Demonstration periods (Figure 6.2—2). Not unexpectedly, rates of fragmented care during the Demonstration Pandemic period

where even higher than in previous years for both populations. Compared to the pre-Demonstration period:

- Beneficiaries without a behavioral health disorder had significantly more fragmented care in the Demonstration period (26% vs 21%) and in the Demonstration Pandemic period (31% vs 21%) compared to the pre-Demonstration period.
- Beneficiaries with a behavioral health disorder also had more significantly fragmented care in the Demonstration period (34% vs 31%) and in the Demonstration Pandemic period (38% vs 31%) than in the pre-Demonstration period.
- Compared to the non-behavioral health group, in every study period, Beneficiaries with a behavioral health disorder had significantly higher rates of fragmented care than Beneficiaries without behavioral health disorder.

Figure 6.2—2. Percentage of Beneficiaries with Fragmented Care- Unadjusted Bivariate Analysis
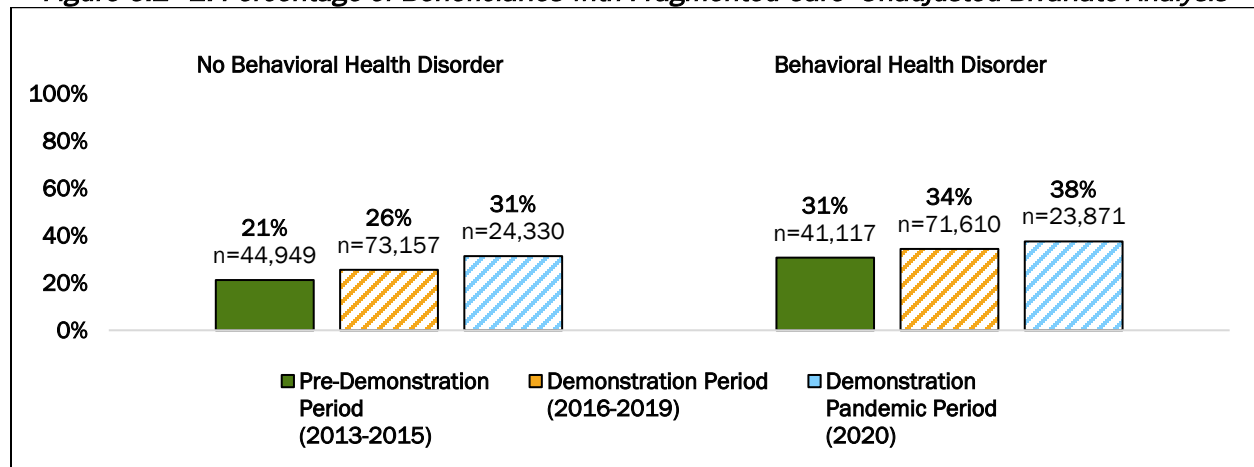
* Pattern within a column indicates significant change from Pre-Demonstration period

Fragmented care significantly increased between the pre-Demonstration and the Demonstration periods for both those with and without behavioral health disorders. This is also true when comparing the Demonstration Pandemic period to the pre-Demonstration period; however, in both cases, the increase was significantly less for those with behavioral health disorders.

Compared to a group of individuals with similar characteristics, but without behavioral health conditions, Beneficiaries with behavioral health disorders were:

- **10% more likely** to have experienced fragmented care in the pre-Demonstration;
- **have a similar likelihood** of having experienced fragmented care post implementation of the Demonstration; and
- **14% less likely** to have fragmented care during the pandemic period (2020).

When comparing the matched behavioral health and non- behavioral health populations, there was an increased likelihood of fragmented care among both the behavioral health and non-behavioral health populations between the pre-Demonstration and Demonstration

periods (Table 6.2-2). The same is true when comparing the pre-Demonstration to the Demonstration Pandemic period. However, the increase was significantly lower for the behavioral health population (9% lower pre- to post-22% lower pre- to post-pandemic).

Table 6.2-2. Generalized Linear Models Estimating Fragmented Care - Propensity Matched Sample

Propensity Matched Sample (N= 613,144)					
Parameter	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
Pre-Demonstration Period (BH to Non-BH)	1.1035	0.0111	1.0820	1.1253	**<.0001**
Demonstration Period (BH to Non-BH)	1.0095	0.0083	0.9933	1.0259	0.2533
Demonstration Pandemic Period (BH to Non-BH)	0.8608	0.0120	0.8377	0.8845	**<.0001**
Change Pre-Demonstration/ Demonstration Period BH sample	1.1784	0.0100	1.1589	1.1982	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period BH sample	1.3545	0.0154	1.3247	1.3849	**<.0001**
Change Pre-Demonstration/ Demonstration Period Non-BH sample	1.2881	0.0119	1.2650	1.3116	**<.0001**
Change Pre-Demonstration/ Demonstration Pandemic Period Non-BH sample	1.7363	0.0220	1.6937	1.7800	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Period)	0.9148	0.0114	0.8927	0.9375	**<.0001**
BH vs. Non-BH Time Interaction (Demonstration Pandemic Period)	0.7801	0.0132	0.7546	0.8065	**<.0001**

*Bold indicates significant (p<0.05)

Analyses examining fragmented care among only Beneficiaries with behavioral health conditions showed significant changes in rates between the pre-Demonstration and Demonstration periods when controlling for Beneficiary characteristics of interest (Table 6.2-3). Among Beneficiaries with behavioral health disorders:

- The increases in fragmented care between the pre-Demonstration and the Demonstration periods were significant; 11% in the Demonstration period compared to 26% in the Demonstration Pandemic period;
- Fragmented care was lower for the dually eligible and expansion populations;
- Fragmented care was associated with younger Beneficiaries and individuals with higher ACG scores;
- Lower fragmented care was associated with residing in rural geographic location; and
- Females were more likely to have fragmented care.

Table 6.2-3. Generalized Linear Models Estimating Fragmented Care
Unmatched Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.1846	0.0303	-0.2440	-0.1252	<.0001
Demonstration Period	0.1105	0.0180	0.0752	0.1457	**<.0001**
Demonstration Pandemic Period	0.2319	0.0241	0.1847	0.2791	**<.0001**
Age	-0.0038	0.0006	-0.0049	-0.0027	**<.0001**
Female	0.0884	0.0174	0.0543	0.1225	**<.0001**
Dual Eligible	-0.0813	0.0221	-0.1247	-0.0380	**0.0002**
Expansion Population	-0.0748	0.0184	-0.1110	-0.0387	**<.0001**
ACG Risk Score	0.0416	0.0014	0.0389	0.0443	**<.0001**
Large Rural	-0.1119	0.0225	-0.1560	-0.0677	**<.0001**
Small Rural	-0.3267	0.0261	-0.3779	-0.2755	**<.0001**
Isolated Rural	-0.4078	0.0320	-0.4706	-0.3450	**<.0001**
	Estimate (Odds Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.1168	0.0201	1.0781	1.1568	<.0001
BH Demonstration Pandemic vs Pre-Demonstration Period	1.2610	0.0304	1.2028	1.3219	<.0001

*Bold indicates significant (p<0.05)

As shown in Figure 6.2—3, the prevalence of fragmented care increased between study periods for Beneficiaries with behavioral health disorders in all IDNs, except for IDN 3. In the pre-Demonstration period fragmented care ranged from 27% to 31%. This range increased from 28% to 43% in the Demonstration period and widened from 30% to 47% in the pandemic period. IDN 3 saw the least amount of variance over the study period.

Figure 6.2—3. Percentage Of Fragmented Care by IDN – Behavioral Health Population (Unadjusted)
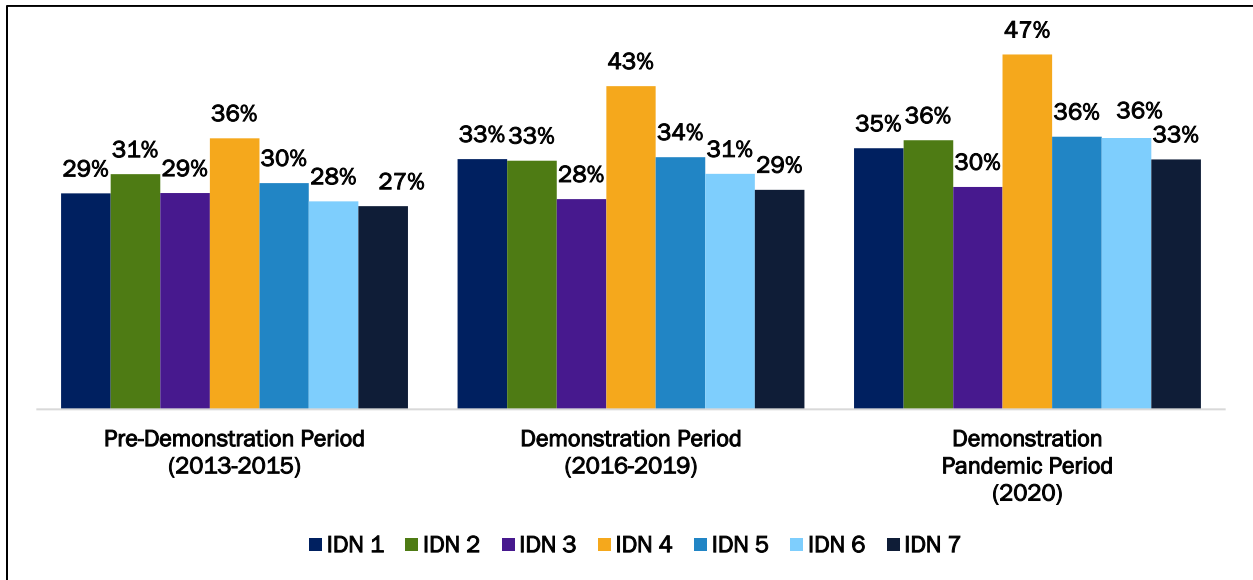
Results of regression models examining rates of care fragmentation across IDNs, not controlling for other covariates, are shown in Table 6.2-4 for IDNs with significant differences compared to IDN 2. Compared to IDN 2 significant differences include:

- A higher percentage of Beneficiaries with behavioral health disorders in IDN 4 experienced fragmented care during both the pre-Demonstration and Demonstration periods;
- A lower percentage of Beneficiaries with behavioral health disorders in IDN 3, IDN 6, and IDN 7 experienced fragmented care in the Demonstration periods; and
- A higher percentage of Beneficiaries with behavioral health disorders in IDN 4 experienced fragmented care during the Demonstration pandemic period; and
- Fewer beneficiaries in IDN 3 and IDN 7 with behavioral health disorders experienced fragmented care.

Table 6.2-4. Fragmented Care for IDNs with Significant Differences Compared to IDN 2 Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Fragmented Care (Behavioral Health)	IDN 1	▼	IDN 3	▼	IDN 3	▼
	IDN 3	▼	IDN 4	▲	IDN 4	▲
	IDN 4	▲	IDN 6	▼	IDN 7	▼
	IDN 5	▼	IDN 7	▼		
	IDN 6	▼				
	IDN 7	▼				

After controlling for Beneficiary characteristics[23] analysis revealed significant differences over time in rates of fragmented care experienced by Beneficiaries across IDNs (Table 6.2-5). Beneficiaries in IDN 2 were 6% more likely in the Demonstration period and 14% more likely in the Demonstration Pandemic period to have experienced fragmented care than in the pre-Demonstration period. Compared to IDN 2 (Figure 6.2—4, Figure 6.2—5):

- Fragmented care in IDN 1, IDN 4, and IDN 6 increased at a greater rate between pre-Demonstration period and the Demonstration period;
- IDN 4 and IDN 6 also had a significantly greater rate of change in the Demonstration Pandemic period than in the pre-Demonstration period.
- The rate of change for fragmented care was not significantly different in IDN 5 and IDN 7 in either period;
- The rate of change for fragmented care was not significantly different in IDN 1 in the Demonstration Pandemic period; and
- IDN 3 was the only IDN to experience a decline in fragmented care over the study period as compared to IDN 2

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[23] Regression model controlled for the following covariates: age, gender, dual eligibility, whether Beneficiaries were enrolled in the expansion program, patient acuity (ACG risk score), and geographic location of the Beneficiary

Figure 6.2—4. Results of Generalized Linear Model Estimating Rate of Change of Fragmented Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
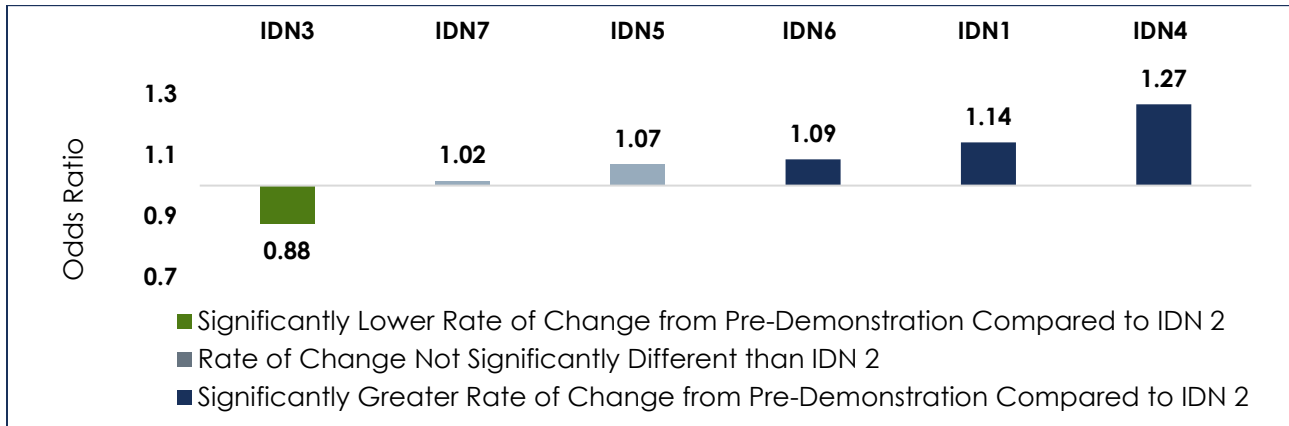
Figure 6.2—5. Results Of Generalized Linear Model Estimating Rate of Change of Fragmented Care Relative To IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
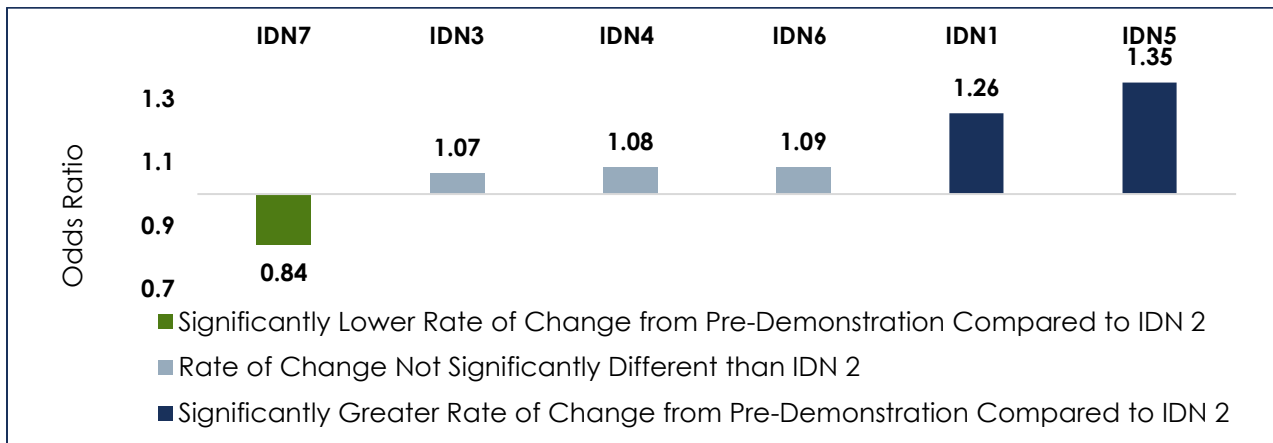

Table 6.2-5. Generalized Linear Models Estimating Rate of Change of Fragmented Care Relative to IDN 2– Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Odds Ratio	P-Value	Odds Ratio	P-Value
IDN2	1.057	<.0001	1.144	<.0001
Time Interaction				
IDN1	1.1416	**<.0001**	1.0662	0.1350
IDN3	0.8761	**<.0001**	0.8398	**<.0001**
IDN4	1.2662	**<.0001**	1.3525	**<.0001**
IDN5	1.0692	0.0564	1.0855	0.0815
IDN6	1.0859	**0.0068**	1.2562	**<.0001**
IDN7	1.0155	0.6587	1.0843	0.0834

*Bold indicates significant (p<0.05)

6.2.2.2 Receipt of Necessary Care Measure

For the Receipt of Necessary Care composite, the composite score is derived from two items from the CAHPS Survey, which indicate whether Beneficiaries with a behavioral health disorder saw a specialist as soon as they needed to and found it easy to get the care, tests, or treatment they needed in the past 6 months. The mean score, with a scale from 1-4, was 3.28 in Wave 1, 3.38 in Wave 2, and 3.34 in Wave 3. Findings indicate that the majority of Beneficiaries felt they were able to receive necessary care throughout the three survey waves, with an increase between Waves 1 and 2, but a slight decrease in Wave 3, most likely due to the pandemic. There were no significant changes in this composite between IDNs. IDNs 1, 5, and 6 saw increases in their composite from Wave 1 to Wave 3.

As shown in Table 6.2-6, there were no significant changes between waves for the individual composite items. New Hampshire had slightly lower rates when compared to national benchmarks on the CAHPS Necessary Care items.[24]

Table 6.2-6. Receipt of Necessary Care Composite Items (Percent Responding Always/Usually)

Composite Items		Wave 1	Wave 2	Wave 3	Significant Changes over Waves
		New Hampshire (National)			
How often was it easy to get the care, tests, or treatment you needed	%	83% (86%)	83% (86%)	82% (86%)	none
	N	N=3,227	N=3,443	N=3,142	
How often did you get an appointment to see a specialist as soon as you needed	%	78% (81%)	79% (79%)	78% (82%)	none
	N	N=1,948	N=2,024	N=1,855	

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[24] National results are based on the CAHPS Health Plan Survey Database 2019, 2020, and 2021 Medicaid and CHIP Chartbooks. Downloaded from: https://datatools.ahrq.gov/cahps

6.2.2.3 Timely Receipt of Necessary Care

For the Timely Receipt of Necessary Care composite, the composite score is derived from two items from the CAHPS Survey, which indicates whether Beneficiaries with a behavioral health disorder received care right away when needed and received an appointment for a check-up or routine care as soon as needed in the last 6 months. The mean score, with a scale from 1-4, was 3.37 in Wave 1; 3.38 in Wave 2; and, 3.34 in Wave 3. Results indicate that most Beneficiaries felt positively about their ability to access care in a timely manner throughout the Demonstration period, with a slight increase in the composite's score from Wave 1 to Wave 2, but a decrease in Wave 3, most likely due to the pandemic. IDNs 1 and 5 saw increases in their composite score between Waves 1 and 2. Compared to the Mean Composite Score:

- IDN 3 had a significantly higher score than the mean in Wave 2; and
- IDN 7 had a significantly lower score than the mean in Wave 2.

As shown in Table 6.2-7, for the first item in the Timely Receipt of Necessary Care composite, *got urgent care for illness, injury, or condition as soon as needed* there were no significant changes in the percent of Beneficiaries responding "always/usually" between the three waves. For the second item in the composite, *got routine appointment at doctor's office or clinic as soon as needed,* Wave 3 was significantly lower than Waves 1 and 2, most likely due to the pandemic. New Hampshire's results were similar to National results; however, the State had better results for *routine appointment at doctor's office or clinic as soon as needed* in Waves 1 and 2.[25]

Table 6.2-7. Timely Receipt of Necessary Care Composite Items
(Percent Responding Always/Usually)

Composite Item	Wave 1	Wave 2	Wave 3	Significant Changes over Waves
	New Hampshire (National)			
Got urgent care for illness, injury or condition as soon as needed	83% (86%)	84% (86%)	83% (83%)	none
	N=2,116	N=2,060	N=1,699	
Got routine appointment at doctor's office or clinic as soon as needed	83% (80%)	82% (80%)	79% (81%)	Wave 3 worse than Waves 1 and 2
	N=3,137	N=3,254	N=3,024	

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[25] National results are based on the CAHPS Health Plan Survey Database 2019, 2020, and 2021 Medicaid and CHIP Chartbooks. Downloaded from: https://datatools.ahrq.gov/cahps

6.2.2.4 Care Coordination

For the Care Coordination composite, six items from the CAHPHS Beneficiary Survey regarding the care provided by the Beneficiary's personal doctor and the doctor's staff in the last 6 months were examined. The mean score, with a scale from 1-4, was 3.45 in Wave 1; 3.49 in Wave 2; and, 3.44 in Wave 3. Results show that most Beneficiaries felt positively about care coordination throughout the three survey waves, with a slight increase in the composite's score from Wave 1 to Wave 2, but a decrease in Wave 3, most likely due to the pandemic. IDNs 1, 5, and 7 saw increases in their composite score from Wave 1 to Wave 3. Compared to the Mean Composite Score:

- ⬥ IDN 2 had a significantly higher score in Wave 1;
- ⬥ IDN 5 had a significantly lower score in Waves 1 and 2; and
- ⬥ IDN 3 had a significantly higher score in Wave 2

As shown in Table 6.2-8, Beneficiaries were more likely to agree they always or usually had coordinated care in Wave 2 compared to Wave 1; however, there were less likely to respond this way in Wave 3 compared to Wave 2 as noted earlier this is most likely due to the influence of Covid-19.

Table 6.2-8. Care Coordination Composite Items (Percent Responding Always/Usually)

Composite Item	Wave 1	Wave 2	Wave 3	Significant Changes over Waves
How often did personal doctor have medical records or other information about your care	92%	93%	91%	Wave 3 worse than Wave 2
	N=3,002	N=3,194	N=2,892	
How often did personal doctor's office follow up to give blood test, x-ray, or other test results	83%	86%	81%	Wave 2 better than Waves 1 and 3
	N=2,464	N=2,600	N=2,292	
Got blood test, x-ray, or other test results as soon as needed	88%	90%	90%	none
	N=2,320	N=2,470	N=2,123	
How often did personal doctor seem informed and up-to-date about the care from specialists	80%	81%	80%	none
	N=1,974	N=2,059	N=1,881	
How often did someone from personal doctor's office talk about all the prescription medicines being taken	83%	84%	82%	Wave 2 better than Wave 3
	N=2,786	N=2,933	N=2,623	
Got the help needed from your personal doctor's office to manage care among different providers and services	82%	82%	79%	none
	N=724	N=729	N=623	

6.2.2.5 Behavioral Health Care

CAHPS Behavioral Health composite scores, comprised of three items regarding behavioral health care received in the past 12 months, were examined to assess Beneficiaries' perceptions of provider–patient interactions regarding behavioral health. The mean score, with a scale of 0-1, was 0.70 in Wave 1; 0.71 in Wave 2; and, 0.68 in Wave 3. This composite shows that most Beneficiaries were asked questions about feeling sad, empty, or depressed; talked about things causing worry and stress; and talked about personal programs, family problems, alcohol use, drug use, or a mental or emotional illness. This composite shows that most Beneficiaries were asked questions regarding behavioral health status throughout the three survey waves, with a slight increase in the composite's score from Wave 1 to Wave 2, but a decrease in Wave 3, most likely due to the pandemic. IDNs 5 and 6 saw increases in their composite score from Wave 1 to Wave 3. Compared to the Mean Composite Score:

- ✦ IDN 3 had a significantly higher score in Waves 1 and 2; and
- ✦ IDN 5 had a significantly lower score in Waves 1 and 2.

As show in Table 6.2-9, for each item in the behavioral health composite, Beneficiaries were significantly less likely to have been asked questions regarding behavioral health. There are no national results to compare to for this measure.

Table 6.2-9. Behavioral Health Composite Items (Response = Yes)

Behavioral Health Composite	Wave 1	Wave 2	Wave 3	Significant Changes over Waves
Doctor's office asked if there was a period of time when respondent felt sad, empty or depressed	79%	80%	78%	Wave 2 better than Wave 3
	N=2,980	N=3,170	N=2,883	
Doctor's office talked with respondent about things causing worry or stress	70%	71%	68%	Wave 2 better than Wave 3
	N=2,979	N=3,163	N=2,876	
Doctor's office talked about a personal problem, family problem, alcohol use, drug use, or a mental or emotional illness with respondent	64%	63%	60%	Waves 1 and 2 better than Wave 3
	N=2,974	N=3,175	N=2,872	

6.2.2.6 Mental Health Hospitalization Follow-up (7 days)

Follow-up after a mental health hospitalization is a measure of continuity of care for Beneficiaries (aged 6 and over) with mental health disorders or intentional self-harm. Regular follow-up with a mental health provider assures transitions back to the community and monitors reaction to medications. It was hypothesized that the DSRIP Demonstration would enhance care coordination and transitions; thus, leading to improved follow-up care rates for those who experienced a mental health hospitalization.

In all three periods, approximately half of all hospital discharges for a behavioral health disorder had a follow-up visit with a mental health practitioner within 7 days of discharge (Figure 6.2—6). Compared to the pre-Demonstration period:

- ✦ The rate of follow-up in the Demonstration was significantly lower; and
- ✦ There was no difference in the Demonstration Pandemic period.

Figure 6.2—6. Percentage of Follow-up Visits for Mental Health Hospitalization within Seven Days Unadjusted Bivariate Analysis
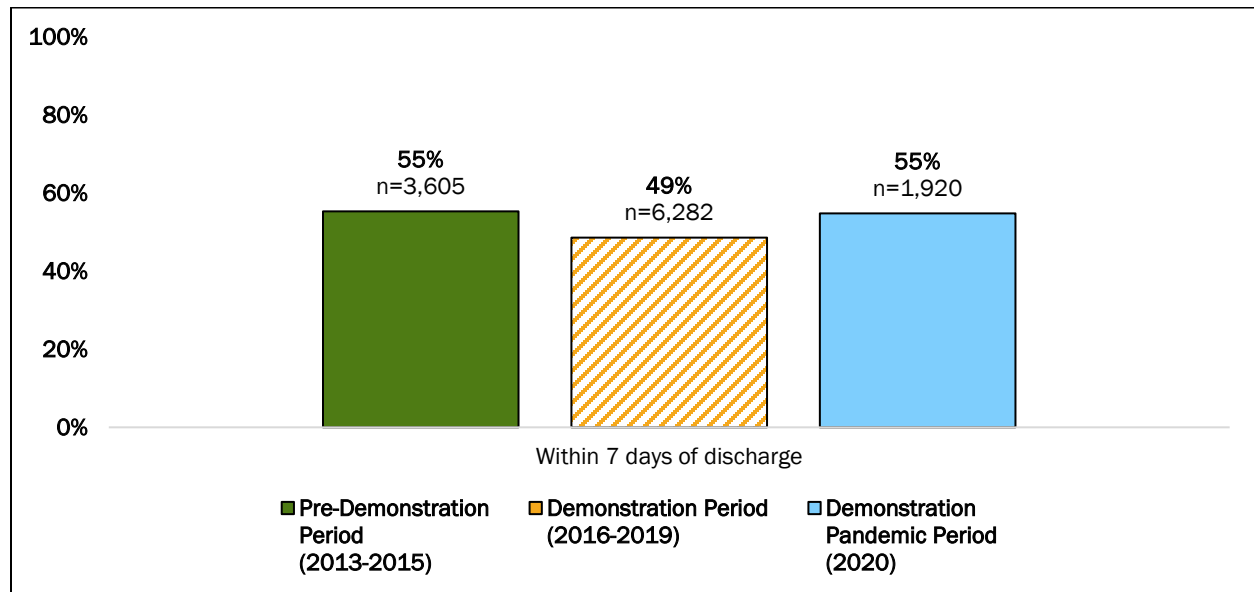
* Pattern within a column indicates significant change from Pre-Demonstration period

Among the behavioral health population, analysis found no significant change in the Demonstration period when controlling for Beneficiary characteristics of interest such as age and gender (Table 6.2-10). However, a significantly higher (11%) likelihood of a 7-day follow-up visit following hospitalization was found in the Demonstration Pandemic period. For the Behavioral Health population with a mental health related hospitalization:

- ✦ Dually eligible Beneficiaries were more likely to have follow-up visits while Beneficiaries in the expansion population were less likely;
- ✦ Female Beneficiaries and those residing in small or large rural areas were more likely to have follow-up visits; and
- ✦ Older Beneficiaries were less likely to have follow-up visits.

Table 6.2-10. Generalized Linear Models Estimating Discharges for a Mental Health Hospitalization with a Follow-Up Visit within Seven Days – Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.6682	0.0269	-0.7210	-0.6154	<.0001
Demonstration Period	-0.0177	0.0192	-0.0552	0.0199	0.3566
Demonstration Pandemic Period	0.1004	0.0258	0.0498	0.1509	**0.0001**
Age	-0.0022	0.0007	-0.0036	-0.0008	**0.0018**
Female	0.0576	0.0189	0.0205	0.0947	**0.0024**
Dual Eligible	0.2818	0.0248	0.2332	0.3305	**<.0001**
Expansion Population	-0.3132	0.0260	-0.3641	-0.2624	**<.0001**
ACG Risk Score	-0.0007	0.0014	-0.0034	0.0020	0.6266
Large Rural	0.1084	0.0234	0.0626	0.1543	**<.0001**
Small Rural	0.1414	0.0277	0.0871	0.1957	**<.0001**
Isolated Rural	0.0567	0.0404	-0.0225	0.1358	0.1606
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	0.9825	0.0188	0.9463	1.0201	0.3566
BH Demonstration Pandemic vs Pre-Demonstration Period	1.1056	0.0285	1.0510	1.1629	**0.0001**

*Bold indicates significant (p<0.05)

As shown in Figure 6.2—7, the prevalence of discharges for a mental health hospitalization having a follow-up visit within seven days varied over study periods by IDN. Follow-up rates ranged from 20% to 60% in the pre-Demonstration period, 24% to 59% in the Demonstration period and 41% to 62% in the Demonstration Pandemic period. IDN 3 had consistently lower rates of 7-day follow-up visits after a mental health hospitalization.

Figure 6.2—7: Percentage of Follow-up Visits for Mental Health Hospitalization within Seven Days by IDN
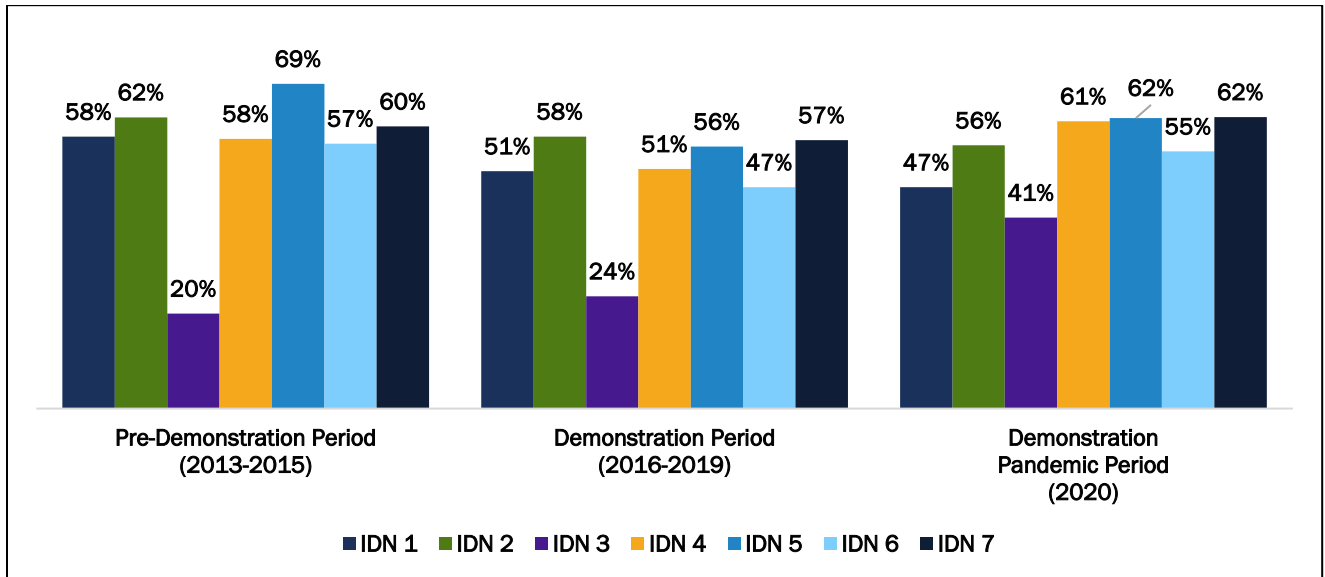
Without controlling for additional factors such as age and gender, results (Table 6.2-11) show significant differences for some IDNs compared to IDN 2 in the rate of follow-up visits:

- In all periods, the rate of follow-up visits is significantly lower in IDN 3: and
- IDN 1, IDN 4, and IDN 6 had lower rates of follow-up visits in the Demonstration period.

Table 6.2-11. Percentage of Follow-up Visits for Mental Health Hospitalization within Seven Days for IDNs with Significant Differences Compared to IDN 2– Behavioral Health Population

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Mental Health Hospitalization Follow-up within 7-days (Behavioral Health)	IDN 3	▼	IDN 1	▼	IDN 3	▼
			IDN 3	▼		
			IDN 4	▼		
			IDN 6	▼		

After controlling for Beneficiary characteristics of interest, results showed significant differences over time in 7-day follow-up rates after a mental health hospitalization by IDN (Table 6.2-12,

Figure 6.2—8, Figure 6.2—9). Beneficiaries in IDN 2 were 8% more likely to have in a follow-up visit within 7 days in the Demonstration period compared to the pre-Demonstration

period. There was no significant change in follow-up between the pre-Demonstration and Demonstration Pandemic periods. Compared to IDN 2:

✦ The rate of change in follow-up visits within 7 days of discharge between the pre- and Demonstration for Beneficiaries with behavioral health disorders in IDN 3 was significantly larger;

✦ The rate of change was lower for Beneficiaries with behavioral health disorders in IDN 5 and IDN 6; and

✦ The rate of change between the pre-Demonstration and Demonstration Pandemic periods was greater for Beneficiaries with behavioral health disorders in IDN 3 and IDN 4.

Figure 6.2—8. Results Of Generalized Linear Model Estimating Rate of Change Of 7-Day Follow-Ups After Hospitalization Relative To IDN 2 - Behavioral Health Population (Demonstration Period)
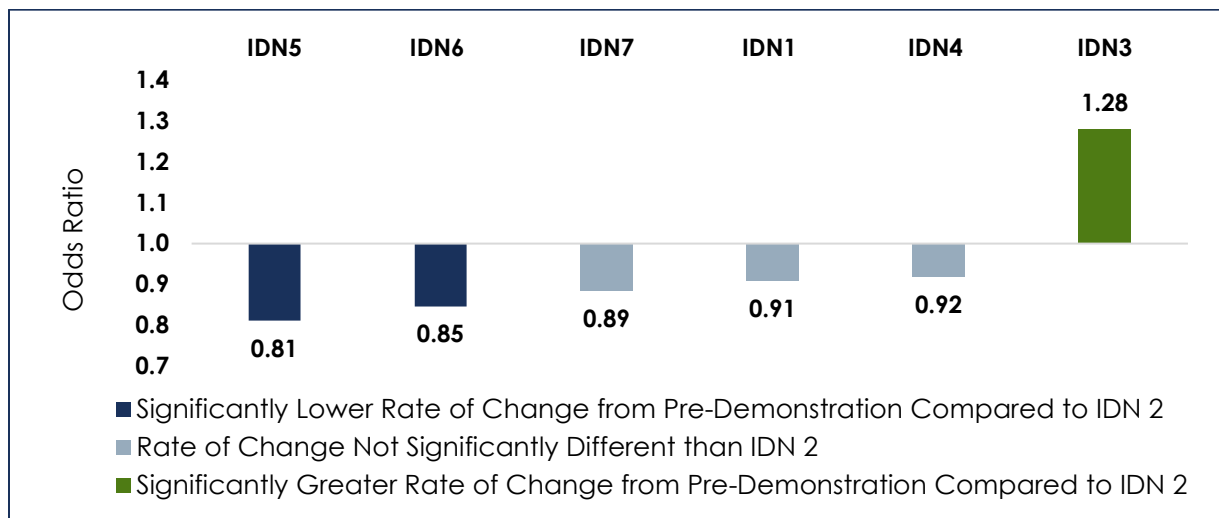
Figure 6.2—9. Results Of Generalized Linear Model Estimating Rate of Change of 7-Day Follow-Ups After Hospitalization Relative to IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
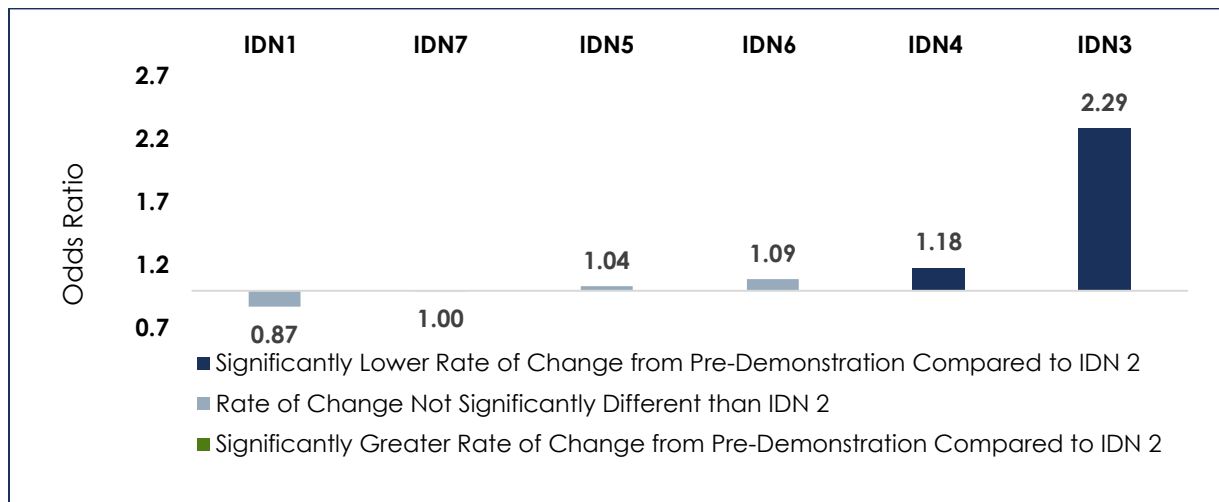
Table 6.2-12. Generalized Linear Models Estimating Follow-Up Visits for Discharges for a Mental Health Hospitalization within Seven Days – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	1.085	0.0420	1.009	0.8913
Time Interaction				
IDN 1	0.9081	0.1086	0.8739	0.1619
IDN 3	1.2804	**0.0428**	2.2860	**<.0001**
IDN 4	0.9179	0.1237	1.1819	**0.0383**
IDN 5	0.8120	**0.0008**	1.0363	0.7039
IDN 6	0.8465	**0.0036**	1.0927	0.2793
IDN 7	0.8850	0.0791	0.9997	0.9981

*Bold indicates significant (p<0.05)

6.2.2.7 Mental Health Hospitalization Follow-up (30 days)

In all three periods, a follow-up visit occurred for at least 64% of hospitalizations for a mental health disorder within 30 days of the discharge. There was a significant decrease in this rate from 74% in the pre-Demonstration period to 64% in the Demonstration period. There was no significant difference between the pre-Demonstration and the Demonstration Pandemic period (Figure 6.2—10).

Figure 6.2—10. Percentage of Follow-up Visits for Mental Health Hospitalization within Thirty Days Unadjusted Bivariate Analysis
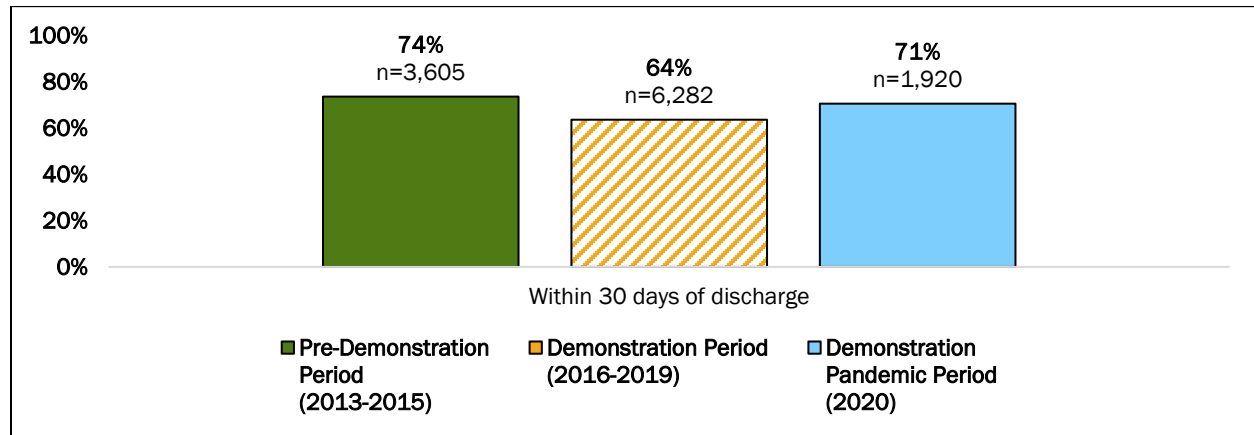
* Patten within a column indicates significant change from Pre-Demonstration period

Analysis found a significant difference in the likelihood of a 30-day follow-up visit following hospitalization in the Demonstration and Demonstration Pandemic periods when controlling for Beneficiary characteristics of interest such as age and gender (Table 6.2-13). The decline in the visit rate between the pre-Demonstration and Demonstration of 5% was significant. Additionally, the increase in visit rate between the pre-Demonstration and Demonstration Pandemic period of 5% was significant. Results from the model also showed:

- A higher likelihood of follow-up visits was associated with having dual eligibility status but the likelihood was lower among the expansion population;
- A higher rate of follow-up visits was associated with being female, having higher ACG score, and residing in rural geographic location; and
- A lower rate of follow-up visits was associated with being older.

Table 6.2-13. Generalized Linear Models Estimating Percentage of Follow-up Visits for Mental Health Hospitalization within Thirty Days –Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.3607	0.0189	-0.3977	-0.3237	<.0001
Demonstration Period	-0.0508	0.0129	-0.0760	-0.0256	**<.0001**
Demonstration Pandemic Period	0.0507	0.0176	0.0162	0.0852	**0.0040**
Age	-0.0022	0.0005	-0.0032	-0.0013	**<.0001**
Female	0.0565	0.0135	0.0300	0.0831	**<.0001**
Dual Eligible	0.2142	0.0169	0.1811	0.2474	**<.0001**
Expansion Population	-0.2604	0.0187	-0.2970	-0.2237	**<.0001**
ACG Risk Score	0.0013	0.0009	-0.0005	0.0031	0.1705
Large Rural	0.0842	0.0163	0.0522	0.1162	**<.0001**
Small Rural	0.1279	0.0186	0.0914	0.1643	**<.0001**
Isolated Rural	0.0752	0.0272	0.0218	0.1286	**0.0058**
	Estimate (Incident Rate Ratio)	**Standard Error**	**95% Confidence Limits**		**P-value**
BH Demonstration vs Pre-Demonstration Period	0.9505	0.0122	0.9268	0.9748	**<.0001**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.0520	0.0185	1.0163	1.0889	**0.0040**

*Bold indicates significant (p<0.05)

6.2.2.8 Mental Illness ED Visit Follow-up (30 days)

Treatment for mental health disorders can rarely be accomplished in a single ED visit and requires follow-up with behavioral health providers in the community. These follow-up visits are important for establishing continuity of care, medication management and implementing or monitoring care plans after the initial ED visit. Eight out of every ten beneficiaries seen in the ED for a mental health related visit, had a follow-up visit for a mental health disorder in the outpatient setting within 30 days (Figure 6.1—11). There were no significant change between the pre-Demonstration and Demonstration periods in the in the prevalence of emergency room follow-up visits.

Figure 6.2—11. Percentage Of Mental Illness Emergency Department Visits with A Follow-Up Visit Within Thirty Days Over Time – Unadjusted Bivariate Analysis
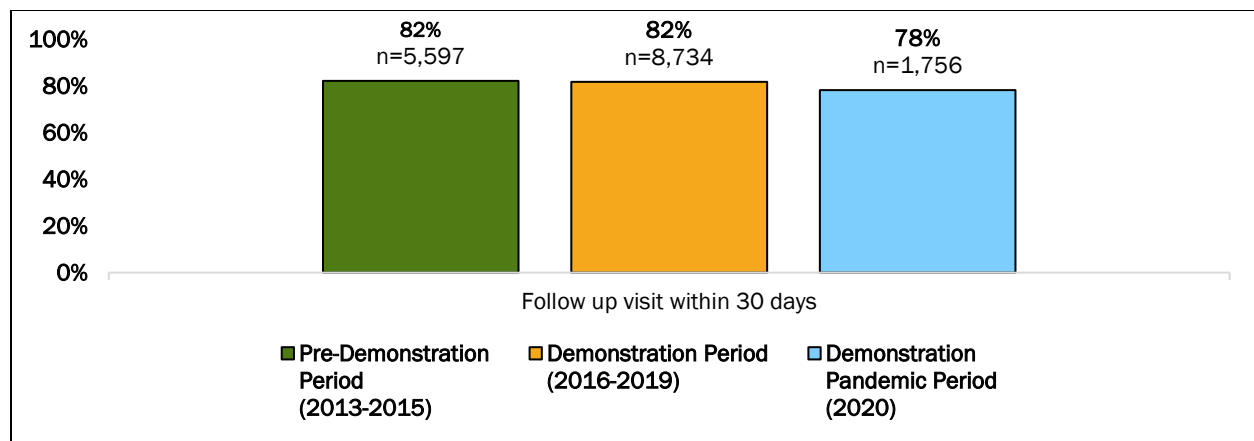
* Pattern within a column indicates significant change from Pre-Demonstration period

However, after controlling for Beneficiary characteristics of interest such as age and gender, results showed a significant increase in the likelihood of having a 30-day follow-up visit after a mental health related ED visit in the Demonstration study period (Table 6.2-14). Conversely, there was a decline in the prevalence of 30-day follow-up visits following a mental health related ED visit in the Demonstration period but this decrease was not statistically significant. Results of the model also found that:

 Rates of follow-up visits after a mental illness related ED visit were higher for dually eligible Beneficiaries but lower for the expansion population;
 Rates of follow -up visits after a mental illness related ED were associated with being female and higher ACG score; and
 Rates of follow visits after a mental illness related ED were lower for older Beneficiaries and those living in small and isolated rural geographic location.

Table 6.2-14. Generalized Linear Models Estimating Mental Illness Emergency Department Visits with A Follow-Up Visit Within Thirty Days – Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-0.1364	0.0099	-0.1558	-0.1169	<.0001
Demonstration Period	0.0219	0.0074	0.0074	0.0364	**0.0031**
Demonstration Pandemic Period	-0.0246	0.0133	-0.0506	0.0014	0.0635
Age	-0.0022	0.0003	-0.0029	-0.0016	**<.0001**
Female	0.0314	0.0076	0.0165	0.0463	**<.0001**
Dual Eligible	0.0532	0.0111	0.0313	0.075	**<.0001**
Expansion Population	-0.127	0.0106	-0.1477	-0.1062	**<.0001**
ACG Risk Score	0.0013	0.0007	0.0000	0.0026	**0.0423**
Large Rural	-0.0039	0.0104	-0.0242	0.0164	0.7086
Small Rural	-0.0305	0.0129	-0.0558	-0.0052	**0.0183**
Isolated Rural	-0.0856	0.0191	-0.123	-0.0482	**<.0001**
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.0222	0.0076	1.0074	1.0371	**0.0031**
BH Demonstration Pandemic vs Pre-Demonstration Period	0.9757	0.0129	0.9507	1.0014	0.0635

*Bold indicates significant (p<0.05)

Figure 6.2—12 presents rates of follow-up visits with a mental health provider within 30 days after emergency department visits for a mental illness by IDN, without controlling for Beneficiary characteristics of interest. With the exception of IDN 3, rates of follow-up visits within 30 days generally declined over time.

Figure 6.2—12. Percentage of Mental Illness Emergency Department Visits with A Follow-Up Visit Within Thirty Days by IDN – Unadjusted Analysis
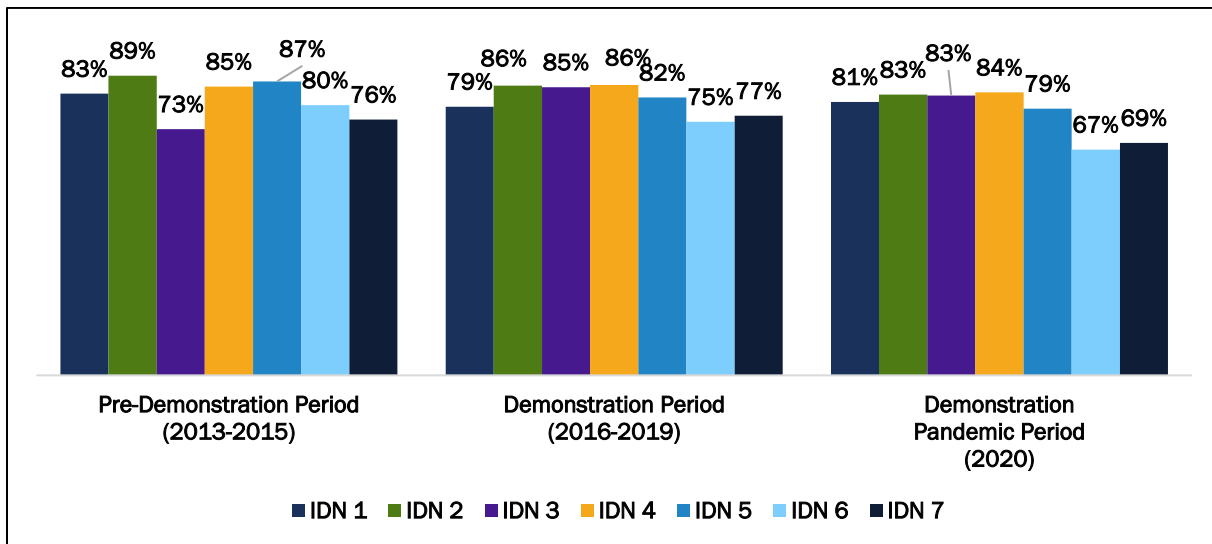
Results (Table 6.2-15) show significant differences for some IDNs compared to IDN 2:

- In the pre-Demonstration, Beneficiaries in IDN 3 and IDN 7 were significantly less likely to have an follow-up visit within 30 days of a mental illness related ED visit;
- In the Demonstration, Beneficiaries in IDN 6 and IDN 7 were less likely to have a follow-up visit within 30 days of a mental illness related ED visit; and
- In the Demonstration Pandemic period, IDN 6 was the only IDN with Beneficiaries who had significantly lower odds of having a follow-up within 30 days of a mental illness related ED visit.

Table 6.2-15. Percentage Of Follow-Up Visits Within Thirty Days Of a Mental Illness Related ED Visit For IDNs With Significant Differences Compared To IDN2– Behavioral Health Population (Unadjusted)

Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDN	Increase/ Decrease	IDN	Increase/ Decrease	IDN	Increase/ Decrease
Mental Illness Emergency Department Follow-up within 30-days	IDN 3	▼	IDN 6	▼	IDN 6	▼
	IDN 7	▼	IDN 7	▼		

After controlling for Beneficiary characteristics of interest results showed significant differences over time in rates of follow-up visits within 30 days of a mental illness related ED visit by IDN (Figure 6.2—13, Figure 6.2—14. Table 6.2-16). The likelihood of Beneficiaries in IDN 2 having a follow-up visit within 30 days of a mental illness related ED visit did not change significantly between the pre-Demonstration and Demonstration periods or between the pre-Demonstration and the Demonstration Pandemic periods. Compared to IDN 2:

- Beneficiaries in IDN 3 had a higher rate of follow-up visits during the Demonstration and the Demonstration Pandemic periods than during the pre-Demonstration; and
- IDN 6 had significantly lower rates of follow-up visits in the Demonstration Pandemic period.

Figure 6.2—13. Results Of Generalized Linear Model Estimating Rate Of Change Of Thirty Days Follow-Ups After Mental Illness Related ED Visit Relative To IDN 2
Behavioral Health Population (Demonstration Period)
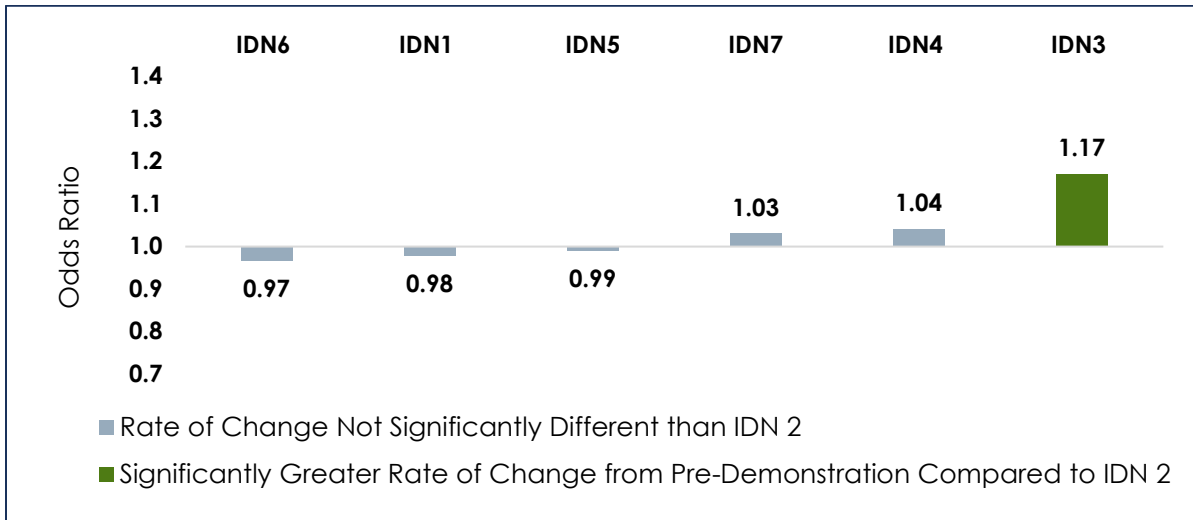
Figure 6.2—14. Results Of Generalized Linear Model Estimating Rate Of Change Of Thirty Days Follow-Ups After a Mental Related ED Illness Visit Relative To IDN 2 - Behavioral Health Population (Demonstration Pandemic Period)
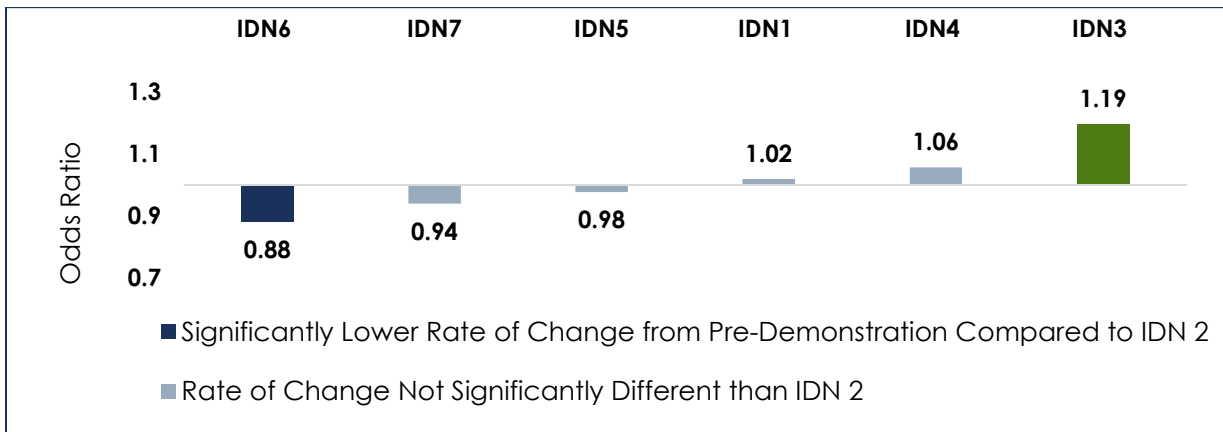
Table 6.2-16. Generalized Linear Models Estimating Mental Illness Emergency Department Visits with a Follow-Up Visit within Thirty Days – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.9978	0.9048	0.9639	0.2982
Time Interaction				
IDN 1	0.9776	0.4183	1.0191	0.6946
IDN 3	1.1716	<.0001	1.1944	**0.0003**
IDN 4	1.0415	0.0640	1.0571	0.1783
IDN 5	0.9904	0.7472	0.9773	0.6871
IDN 6	0.9669	0.1959	0.8812	**0.0156**
IDN 7	1.0313	0.4475	0.9398	0.4020

*Bold indicates significant (p<0.05)

6.2.2.9 Alcohol/Drug Dependence ED Visit Follow-up (30 days)

Intervention and treatment of alcohol and other drug dependence (AOD) following an emergency department (ED) visit has been shown to be successful in reducing future use of substances.[84] In September of 2014, NH Medicaid began to cover AOD treatment services for the NH Expansion population (PAP). Prior to this time, contractors delivered services that were paid through Substance Abuse and Mental Health Administration (SAMHSA) block grant funds. In July 2016, AOD services were additionally expanded for the traditional Medicaid population.

Figure 6.2—15 shows significantly more beneficiaries had a follow-up visit for AOD services within 30 days in the Demonstration (31%) and Demonstration Pandemic (40%) periods compared to the pre-Demonstration period (24%). There are no national HEDIS® benchmarks for this measure.

Figure 6.2—15. Percentage of Alcohol or Drug Dependence (AOD) Emergency Department (ED) Visit with a Follow-Up Visit for AOD within Thirty Days Over Time – Unadjusted Bivariate Analysis
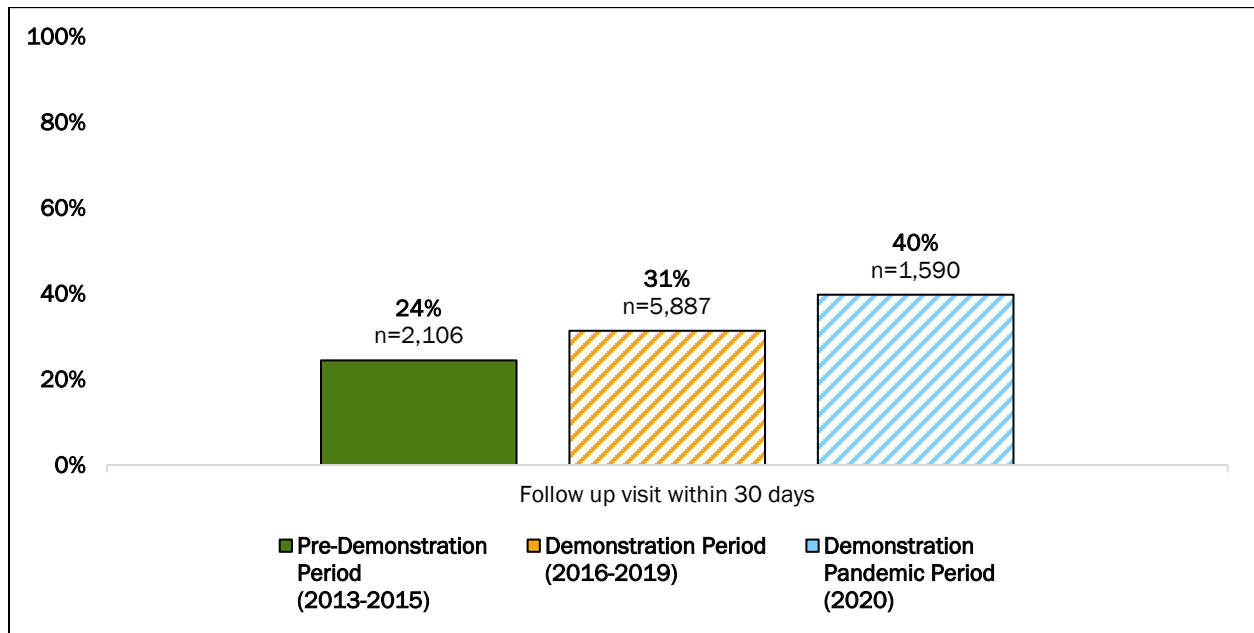
*Pattern within a column indicates significant change from Pre-Demonstration period

The odds of follow-up after an AOD ED visit, after controlling for Beneficiary characteristics, significantly increased by 16% in the Demonstration and by 43% in the Demonstration Pandemic period (Table 6.2-17). For the behavioral health population:

- Follow-up visit rates were higher for females and the expansion population; and
- Individuals who had higher ACG risk scores were more likely to have follow-up visits following an AOD ED visit.

Table 6.2-17. Generalized Linear Models Estimating Alcohol or Drug Dependence (AOD) Emergency Department (ED) Visit with a Follow-Up Visit for AOD within Thirty Days –Behavioral Health Population

Parameter	Estimate	Standard Error	95% Confidence Limits		P-value
Intercept	-1.5313	0.0634	-1.6555	-1.407	<.0001
Demonstration Period	0.1482	0.0428	0.0643	0.2322	**0.0005**
Demonstration Pandemic Period	0.3593	0.0497	0.2619	0.4566	**<.0001**
Age	-0.0023	0.0012	-0.0048	0.0001	0.0651
Female	0.0927	0.0307	0.0326	0.1529	**0.0025**
Dual Eligible	-0.0752	0.0586	-0.19	0.0395	0.1989
Expansion Population	0.2814	0.0407	0.2016	0.3611	**<.0001**
ACG Risk Score	0.0109	0.0018	0.0074	0.0143	**<.0001**
Large Rural	0.0405	0.0431	-0.044	0.1249	0.3481
Small Rural	0.0119	0.0565	-0.0989	0.1227	0.8334
Isolated Rural	0.1043	0.064	-0.0211	0.2297	0.1030
	Estimate (Incident Rate Ratio)	Standard Error	95% Confidence Limits		P-value
BH Demonstration vs Pre-Demonstration Period	1.1598	0.0497	1.0664	1.2614	**0.0005**
BH Demonstration Pandemic vs Pre-Demonstration Period	1.4323	0.0711	1.2994	1.5789	**<.0001**

*Bold indicates significant (p<0.05)

Follow-up visits among Beneficiaries with an AOD ED visit increased in all IDNs over the study period. Figure 6.2—16 presents the rates of follow-up visits within 30 days for AOD related ED visits.

Figure 6.2—16. Percentage of Alcohol or Drug Dependence (AOD) Emergency Department (ED) Visit with a Follow-Up Visit within Thirty Days by IDN – Unadjusted
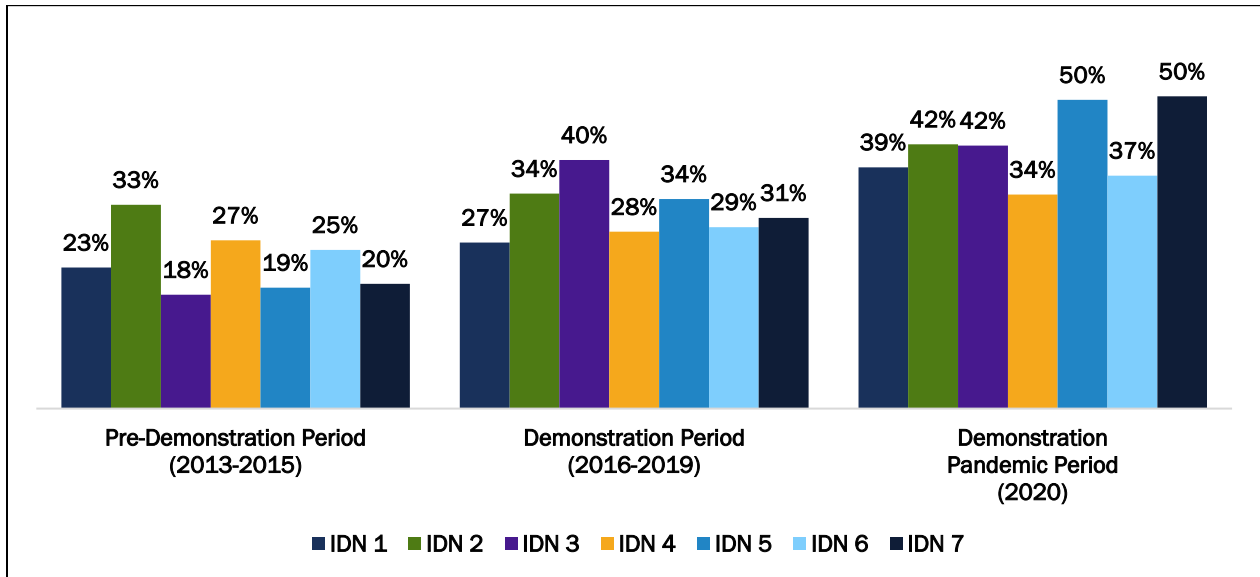
When compared to IDN 2, there were significant differences in follow-up rates across IDNs (Table 6.2-18):

- ⬥ In the pre-Demonstration period, IDN 1, IDN 3, IDN 5, and IDN 7 had significantly lower rates of follow- up visits within 30 days of an AOD ED visit;
- ⬥ In the Demonstration period, IDN 1, IDN 4, and IDN 6 had significantly lower rates of follow- up visits within 30 days of an AOD ED visit;
- ⬥ In the Demonstration period, IDN 3 had significantly higher rates of follow- up visits within 30 days of an AOD ED visit; and
- ⬥ There were no significant differences in the Demonstration Pandemic period.

Table 6.2-18. General Linear Models Estimating Rates Of Alcohol Or Drug Dependence (AOD) Emergency Department (Ed) Visit With A Follow-Up Visit Within Thirty Days By IDN – Behavioral Health Population

| Measure	Pre-Demonstration Period (2013-2015)		Demonstration Period (2016-2019)		Demonstration Pandemic Period (2020)	
	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower	IDNs Significantly Different than IDN 2	Higher / Lower
Alcohol or Drug Dependence (AOD) Emergency Department (ED) Visit with a Follow-Up Visit within 30-Days	IDN 1	▼	IDN 1	▼	N/A	
	IDN 3	▼	IDN 3	▲		
	IDN 5	▼	IDN 4	▼		
	IDN 7	▼	IDN 6	▼		

After controlling for Beneficiary characteristics, results showed significant differences over time in rates of AOD ED follow-up across IDNs in NH (Table 6.2-19). Follow-up visits in IDN 2 did not change significantly between pre-Demonstration and Demonstration periods or the Demonstration Pandemic period; however, there were significant changes in follow-up rates at other IDNs. Compared to IDN 2 (Figure 6.2—17, Figure 6.2—18):

- ✦ The rate of change in follow-up rates between the pre-Demonstration and Demonstration periods was greater for Beneficiaries in IDN 3 and IDN 5; and
- ✦ Beneficiaries in IDN 3, IDN 5 and IDN 7 had a greater increase in the likelihood of receiving a follow-up visit after an AOD ED encounter between the pre-Demonstration and the Demonstration Pandemic.

Figure 6.2—17. Results of Generalized Linear Model Estimating Rate of Change of AOD ED Visit with a Follow-Up Visit within Thirty Days Relative to IDN 2 - Behavioral Health Population (Demonstration Period)
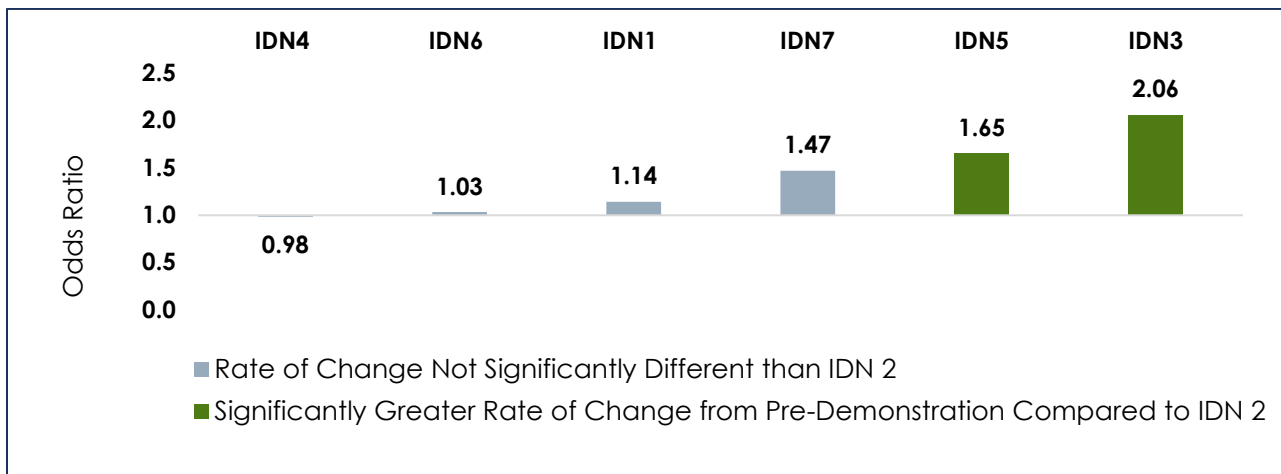
Figure 6.2—18. Results of Generalized Linear Model Estimating Rate of Change of AOD ED Visit with a Follow-Up Visit within Thirty Days Relative to IDN 2
Behavioral Health Population (Demonstration Pandemic Period)
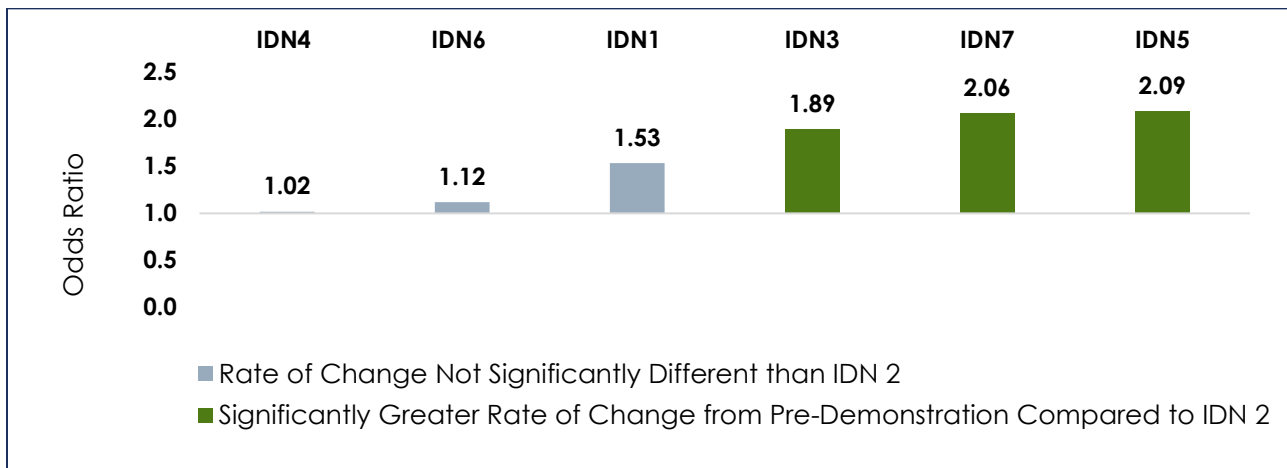
Table 6.2-19. Generalized Linear Models Estimating Rates of Alcohol or Drug Dependence (AOD) Emergency Department (ED) Visit with a Follow-Up Visit within Thirty Days by IDN – Behavioral Health Population

Parameter	Demonstration Period		Demonstration Pandemic Period	
	Incident Rate Ratio	P-Value	Incident Rate Ratio	P-Value
IDN 2	0.9682	0.7487	1.1082	0.4362
Time Interaction				
IDN 1	1.1410	0.4926	1.5349	0.0507
IDN 3	2.0612	**<.0001**	1.8898	**0.0005**
IDN 4	0.9845	0.8997	1.0173	0.9137
IDN 5	1.6502	**0.005**	2.0865	**0.0004**
IDN 6	1.0332	0.8111	1.1182	0.5080
IDN 7	1.4692	0.0925	2.0622	**0.0035**

*Bold indicates significant (p<0.05)

6.2.2.10 Provider Perceptions on Improvement in Integration of Care

In addition to using administrative data to assess care integration, information from surveys and interviews were also analyzed to examine improvements in care integration. IDN providers indicated that a number of strategies implemented as part of the Demonstration were successful at promoting care integration and transitions. One key tenet of the Demonstration was the implementation and use of multidisciplinary care teams (MDCTs), as part of the B1 Core Competency Project required by all IDNs, as well as the optional community-driven C1, Core Transitions Project. A MDCT is typically comprised of primary care providers, behavioral health providers, care managers and/or community health workers, and consulting psychiatrist(s). In addition, several IDNs (1, 2, 5, 6,7) followed the Community Care Team model, so depending on patient needs, social service providers are often added to the multidisciplinary care team meetings. A notable theme within the qualitative data is the fact that all administrators, a majority of providers along with all some HIT stakeholders, were encouraged by the integration progress made by MDCTs, and shared the hope that this can be a sustained change of the Demonstration.

The overall rating of care integration for patients with behavioral health conditions as reported by provider survey respondents decreased by 5.3% from 2019 to 2021 (Figure 6.2—19). This indicates a slight decrease in the perception of care integration from providers; however, their overall ratings of successful care integration strategies increased by 5.8% over the course of the Demonstration from 3.6 in 2019 to 3.81 in 2021 (Table 6.2-20).

Overall, providers perceived the enhancements to the State's HIT infrastructure put in place under the Demonstration as having a positive impact on clinical workflows and care integration. The expanded infrastructure has helped promote information sharing across settings and between providers leading to perceived improvements in care coordination for Beneficiaries with behavioral health disorders. Additional analysis, findings and conclusions on the Demonstration's HIT infrastructure improvements, successes, challenges and how it interfaced with care integration, can be found in Section 6.4.
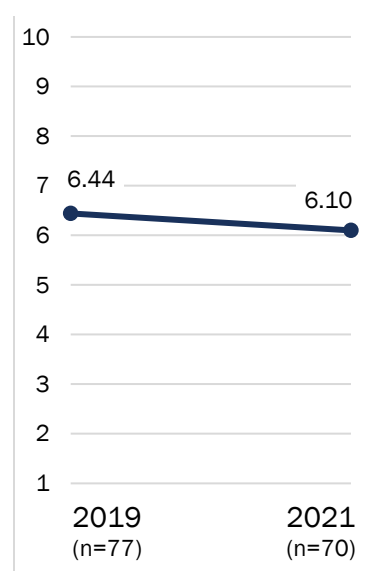

Figure 6.2—19: Provider Ratings of Care Integration

Table 6.2-20. 5 Greatest Changes in Percent of Providers who Believed Care Integration Strategy was Successful from 2019 to 2021

% Change	Item
+ 21.9%	Improving reimbursement policies
+ 18.4%	Transitioning to APMs
+ 12.7%	Developing clinical guidelines for shared care
+ 7.1%	Increased health information sharing between organizations
- 5.7%	Making organizational culture adjustments

On average, from 2019 to 2021, providers reported greater success with almost every care integration strategy implemented as part of the Demonstration, showing the largest increases with improving reimbursement policies, transitioning to APMs, and developing clinical guidelines for shared care. While qualitative interview data did not support this sentiment about transitioning to APMs, the differences in the mean on this between 2019 and 2021 could indicate that awareness increased about the goals of the Demonstration regarding payment reform. Making organizational culture adjustments is the only strategy with a decrease in its mean rating of success for improving care integration; this may be due to the fact that the follow-up survey was in the field during the COVID pandemic, a time where making organizational adjustments may have seemed less feasible given competing demands.

Figure 6.2—20. Provider Ratings of Success of Care Integration Strategy
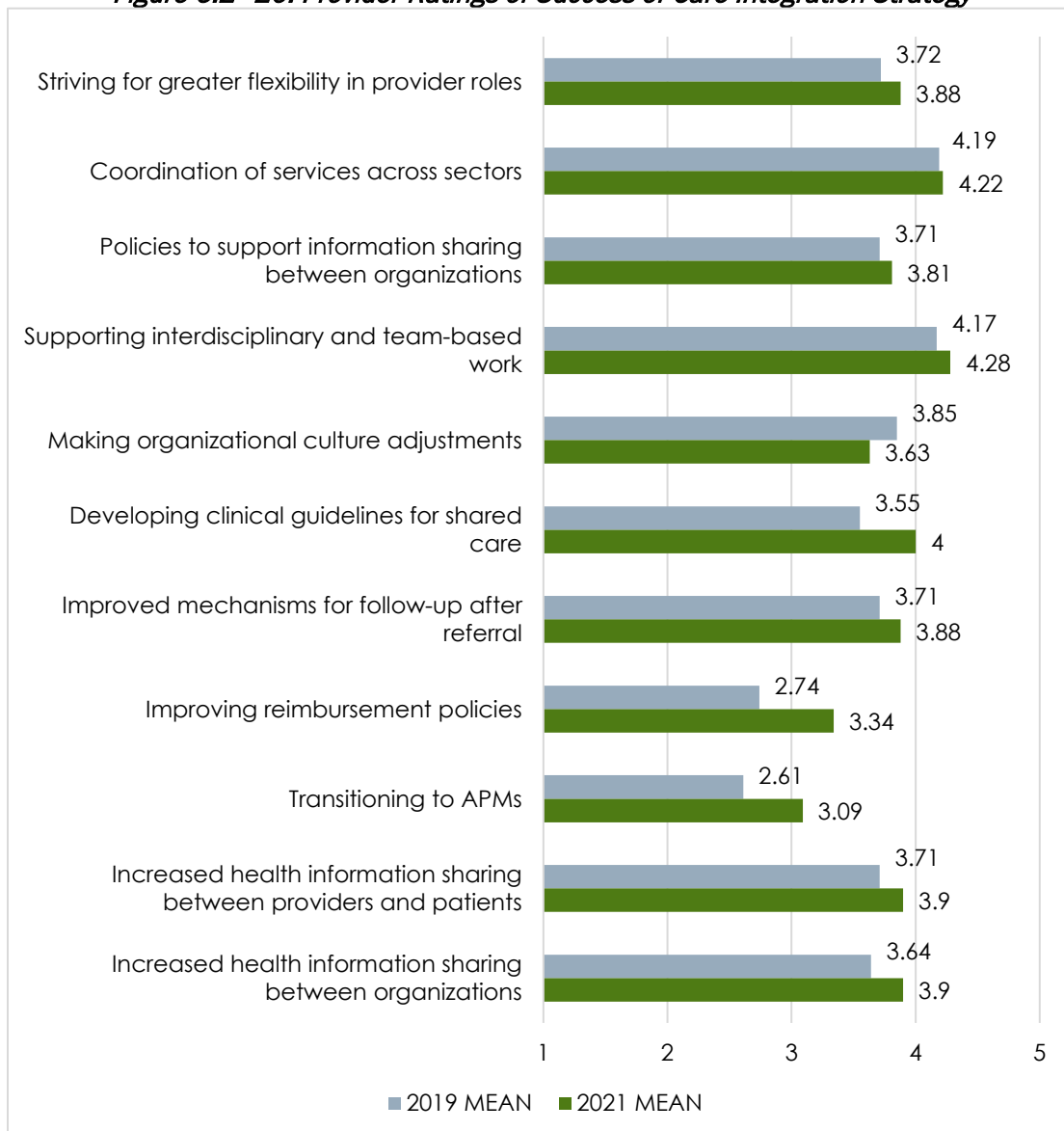
6.2.2.11 Beneficiary Perceptions on Integration of Care

In 2019 and 2021, interviewers asked Beneficiaries about their perceptions of the integration and coordination of their healthcare providers. While some of their responses reflected either an inability or unwillingness to have their PCP connect them to behavioral health providers (i.e, beneficiaries finding their own behavioral health providers), others discussed their primary care physician having the capacity to manage their behavioral health care needs, or receiving integrated, team-based, or co-located care.

Among Beneficiaries that were interviewed who received care from a behavioral health provider, about one-third reported being referred by their primary care physician or other medical provider. Probation officers or diversionary programs provided referrals in limited instances but the majority of beneficiaries self-referred. In both 2019 and 2021, several Beneficiaries also mentioned having to do the research or "digging" to find locally available behavioral health and/or substance use disorder providers who were accepting new clients. In both interview periods, some Beneficiaries discussed that, while satisfied with their provider's ability to make referrals, they believed they didn't need to ask their primary care provider for help with behavioral health referrals.

> *"I kind of just know of the places that there are around here, and just kind of did my own research to find those places."*
> –Beneficiary, 2019

> *"I don't know if my providers communicate – I sought out my own therapist."*
> –Beneficiary, 2021

Beneficiaries were asked about integration of care and communication between their medical providers and behavioral health providers. Of those that reported seeing a behavioral health provider, many believed that there was communication of some sort between their PCP and the behavioral health providers, but were not sure exactly how that was conducted. Some Beneficiaries were aware of communication between their PCP and behavioral health provider due to a HIPAA release form, and others were aware because the shared communication was relayed to them during visits with providers.

> *"They referred me to the behavioral health, which is upstairs from where my doctor is, and behavioral health called me and set up an appointment with me."*
> –Beneficiary, 2021

In some cases, Beneficiaries discussed their PCP as being the primary person who managed their medications for behavioral health diagnoses. Others felt that their primary care and behavioral health providers worked as a team. In these cases, they described that their PCP was open and empathetic when discussing their behavioral health needs. These factors may reflect increased capacity under primary care organizations to deliver integrated, multidisciplinary team-based care. Several beneficiaries further discussed their appreciation of services offered through warm hand offs or delivered physically in one location. This contributed to their perception that they were receiving care that was comprehensive, easy to access, and met their needs.

> *"I got a great team of doctors, everything. If I need something, I call them, and they set it up right away … If one doctor can't do it, then they get a hold of the other doctor, then they -- you know, I mean, like they're all on the same page. They all send records to each other and everything. "*
> –Beneficiary, 2021

Beneficiaries were asked whether their providers had asked them about components of the Comprehensive Core Standardized Assessment (CCSA), a tool implemented as part of the B1 statewide project to increase screenings for social determinants of health and connect patients with resources to improve their well-being. Beneficiaries in 2021 acknowledged an increase in being asked about the majority of the CCSA items compared to 2019. For 6 out of 8 categories in 2021, Beneficiaries were more likely to report that their provider had screened them on topics related to their medical, behavioral, and social needs in the last 12 months. This contributed to Beneficiary perception that their providers cared about them and other factors that impacted their physical and mental health. A more comprehensive discussion of the CCSA is in the next section, which triangulates provider and beneficiary perspectives (Section 6.2.2.12.1).

6.2.2.12 Practice and Provider Experiences of Care Integration and Coordination

Providers' ratings of integration were further substantiated by information gathered through interviews with providers and IDN administrators, as well as HIT stakeholders. These key informants overwhelmingly reported that DSRIP changed the way that care is delivered to NH Medicaid Beneficiaries with behavioral health disorders. Two primary themes emerged around the successes related to system transformation: (1) an increased awareness, understanding, and adoption of comprehensive patient-centered care; and (2) the formation of inter-organizational relationships as critical in the support of integrated models of care.

> *"I saw more primary care physicians managing behavioral health versus turfing it. … I think patients were getting their needs met sooner, you know, and in primary care practices."*
> -Provider, 2021

> *"We talk about silos but I think everybody has realized over the past five years, three and a half years, whatever it is, that these cases are increasingly complex and no one organization can deal with everything."*
> -Administrator, 2021

Both Providers and Administrators indicated that they perceived the whole-person approach to screening and integrated care as well as the associated cultural shifts that promoted greater collaboration across organizations to support enhance patient-centered approaches to care as a major success of the Demonstration.

Across the IDNs, Providers and Administrators highlighted the benefits of multidisciplinary care teams and the relationships that were built across healthcare organizations as being instrumental in facilitating better care coordination and continuity of care for Beneficiaries. To support integrated care, IDN Administrators also noted that the comprehensive governance structure, implemented as part of the initial roll-out of the Demonstration, helped build and solidify collaboration between and across medical, behavioral health, community and social service organizations to form committed, sustainable partnerships while at the same time forming a continuity of integrated services for Beneficiaries.

> *"DSRIP's biggest success is [serving] patients that were in that moment experiencing behavioral health needs and being able to support, bridge, and connect them to the right supports that would meet their needs."*
> —Provider, 2021

> *"The project really focused how much more we can accomplish when we are all connected together and how it's better for the people we are serving."*
> -Provider, 2021

> *"I do think that we are the tipping point for a change in the culture that organizations see themselves as part of a network and not just as a [single] organization…*
> –Administrator, 2021

IDN Administrators rated coordination across disciplines and team-based work as the most successful strategies for facilitating integration in both 2019 and 2021. Providers and Administrators agreed upon the key factors that assisted with promoting care integration during the Demonstration including:

- collaboration between organizations and providers;
- organizational culture and involvement that allows providers to invest time into care integration; sustainable payment reform;
- project funding for care management; the use of HIT for information sharing; and
- IDN leadership as the most successful strategies for expanding care integration under the DSRIP Demonstration.

> *"I think [one of the successes of the Demonstration] was being able to really look at whole person health and what it takes to truly be integrated."*
> –Provider, 2021

> *"Now our organization sees that it is a sustainable model, it's an important model, and it's not sort of a crazy idea. So, we have now multiple integrated behavioral health providers employed in our offices and our goal is to have one in each practice."*
> -Provider, 2021

6.2.2.12.1   CCSA & Care Integration

The Comprehensive Core Standardized Assessment (CCSA), implemented as part of the Demonstration's B1 Core Competency Project, is a standardized screening process designed to identify medical, behavioral and social needs.[85] As part of this statewide Demonstration project, all IDNs were tasked with creating systems to integrate the screening into organizational workflows to aid in the identification of Beneficiary needs, develop individualized care plans, and facilitate referrals to appropriate services. The evaluation chose to do a deeper analysis on the CCSA due to its state-wideness, integrality to improving integration of care and measurability across all groups from which qualitative data was collected. Indeed, qualitative data collected indicates one of the successes of the B1 project was the broad adoption of the screening tool by providers, though it had its challenges. Of the providers expected to complete the CCSA, the majority of providers reported completing the screening (92.2% in 2019; 80.6% in 2021). It is important to note that the decrease in completion rate between 2019 and 2021 may have been due to the pandemic shifting organizational resources making it more difficult for providers to have the time to complete the CCSA.

Some providers found the CCSA to be helpful in promoting care integration, particularly for

> *"[Formalizing the CCSA] put it in front of provides' faces much earlier in their medical careers that these social determinants are impacting people's physical health."*
> —-Provider, 2021

individuals who have complex care and social needs. The comprehensive nature of the screening allowed providers to get a full picture of a Beneficiary's physical and behavioral health care needs while at the same time assessing social determinants of health. Some providers stated that CCSA allowed them to work with other providers to develop and implement initial comprehensive care plans. In addition, providers noted that the ability to not only screen for physical and behavioral health care needs, but to also examine social needs allowed for a more holistic, patient-centered approach to care. Also mentioned was that the CCSA has helped to facilitate

conversations with providers from multiple organizations leading to a higher level of care integration across the various settings and providers.

Of the providers expected to complete the CCSA as part of the Demonstration, many reported having difficulty completing the CCSA (57.1% in 2019; 43.8% in 2021); while there was a 23% decrease between 2019 and 2021, this is still a substantial proportion of respondents reporting challenges completing the screening. The most frequently cited challenges were: time constraints, having too many data collection points, lack of a robust HIT infrastructure to support CCSA data collection, and not seeing the utility of the CCSA (Figure 6.2—21).

Figure 6.2—21: Percent of Providers that Reported Factor was a barrier to Completing the CCSA
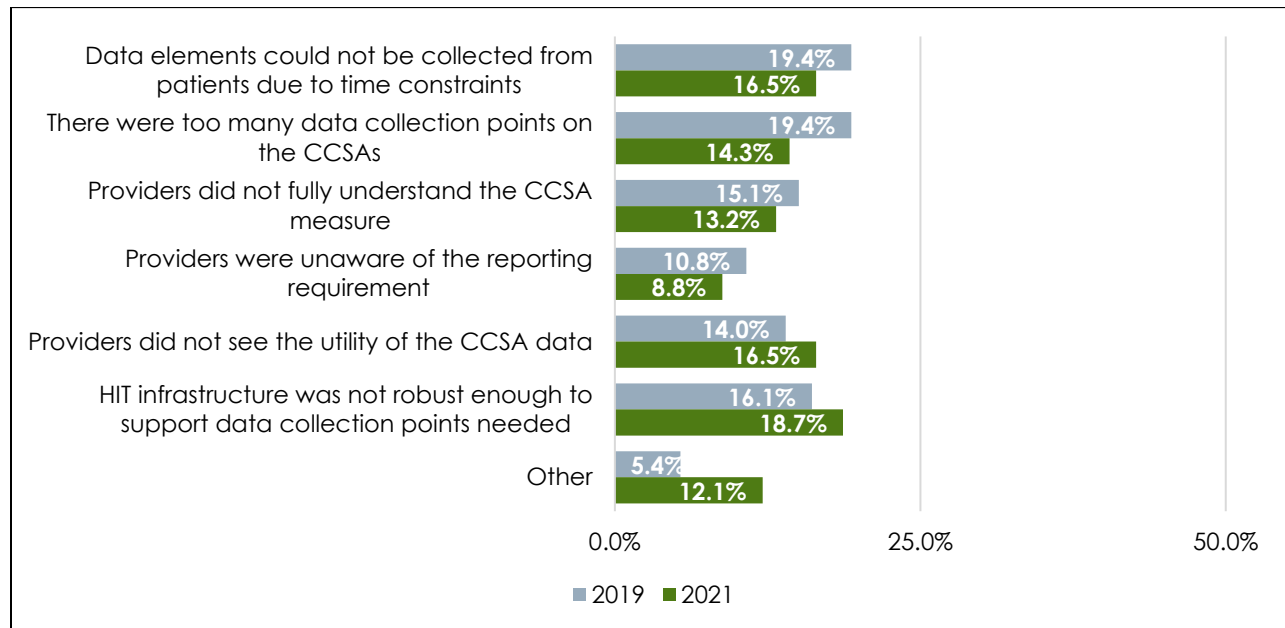
"One of our partners, because of the CCSA, they actually now have a resource manager so if a PCP finds that they need social determinants of health follow-up, they now refer them right in-house into a resource manager and then that person helps the client with all those kinds of things."

—HIT Stakeholder, 2021

"I think that there's just a lot more support and clear pathways of how to get a person access to what they need."

-Administrator, 2021

The 2019 findings showed that an additional challenge to implementing the CCSA, noted by both HIT stakeholders and providers, is that some providers were uncomfortable asking the questions in the assessment because, if there was a positive screen, they did not have adequate resources or thought they could not find an appropriate referral organization to address the individual's needs. However, interviews conducted in 2021 indicated that integration improvements within and between partner organizations were made during the implementation of the Demonstration and made more providers comfortable conducting the CCSA because of their ability to more readily identify resources and

referral organizations.

While the rate of providers who reported that they were able to consistently conduct the CCSA declined in 2021, this may be attributed to disruptions in workflows due to changes in healthcare delivery during the COVID-19 pandemic. Telehealth visits may have undermined screening workflows designed for in-person visits; for example, several providers reported having to change from a paper CCSA screening system to an electronic form. Providers also reported challenges with the logistics of collecting this information from Beneficiaries due to limitations in clerical staffing and shortened visit times, both as a result of the COVID-19 pandemic.

Despite numerous provider-reported challenges to completing the CCSA in the final year of the Demonstration, Beneficiaries in 2021 acknowledged an increase in being asked about the majority of the CCSA items compared to 2019. For 6 out of 8 categories in 2021, Beneficiaries were more likely to report that their provider had screened them on topics related to their medical, behavioral, and social needs in the last 12 months. Not only did this contribute to Beneficiary perception that their providers cared about their overall well-being, it indicates that while the formal CCSA process may have dropped off due to unforeseen challenges in 2020, the screening questions were still being asked when it came to provider-patient interactions. As a provider noted in 2021, *"If thinking about a success with the caveat of being sustainable, I would say that there are a certain amount of things integrated into workflows across multiple agencies now that weren't there before, like the comprehensive core standardized assessment that assesses social determinants of health."*

"I think there's' more knowledge of the CCSAA and social determinants – they have just become part of the conversation."
-Provider, 2021

"You know I asked her … I said how come you asked that and she's like because if you don't have a place to live or something, she's like, we can hook you up with the resources to help you."
-Beneficiary, 2021

Figure 6.2—22: Percent of Beneficiaries who reported being asked about CCSA item in past 12 months
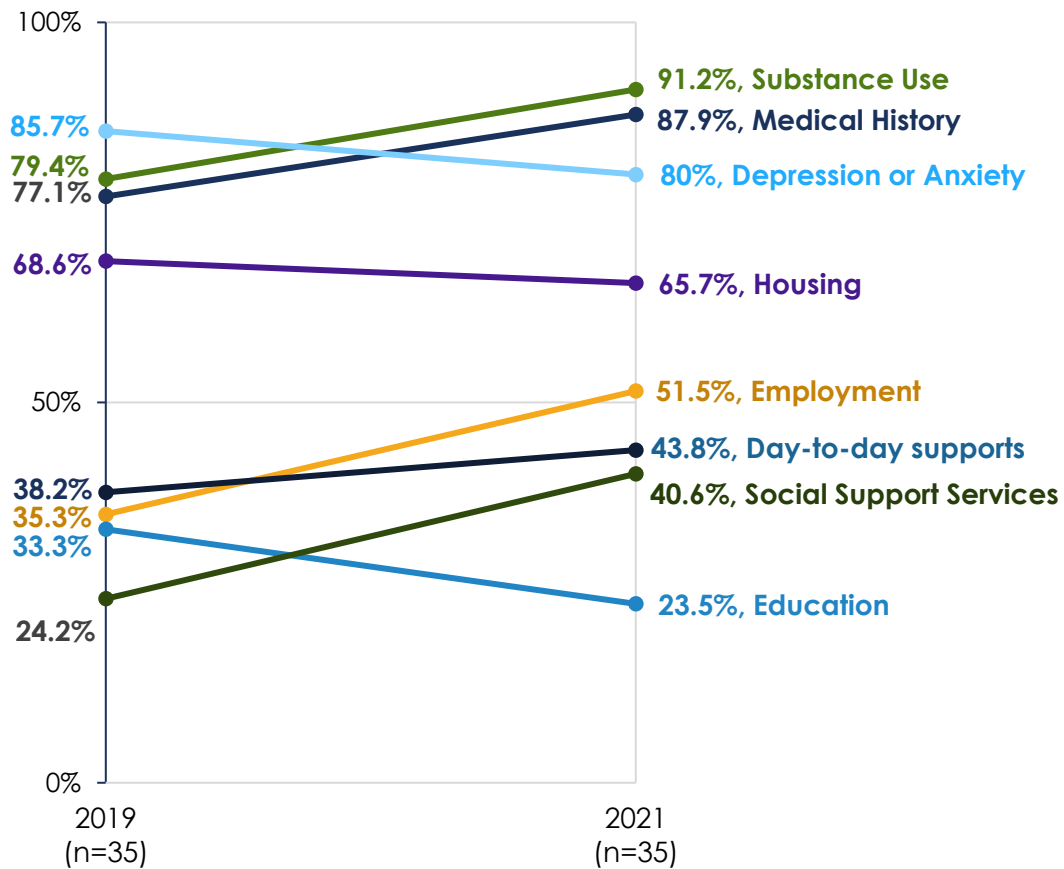
Overall, key stakeholders believed the integration initiatives of the Demonstration influenced the way in which providers delivered care to Beneficiaries. This included changes in organizational culture that facilitated time investment into integration, enhanced cross-organizational relationships, the use of team-based care and other established integration models, and improved overall awareness of social determinants of health and patient-centered care. More specific HIT-related impacts relative to integration of care, are discussed in the analyses and findings under RQ4, Section 6.4.

6.2.3 Summary

Care integration is vital to addressing the healthcare needs of individuals with behavioral health conditions. Fragmentation of the health care system can lead to disjointed care and can result in increased health care costs.[86] In addition, fragmented systems of care are inadequate for maintaining continuity of care and facilitating care transitions, thereby impairing patient quality of life and potentially contributing to the high health care costs.[87] Given the prevalence of behavioral health disorders in the Medicaid population, the high levels of Medicaid spending on behavioral health care, and the adverse impact that uncoordinated care can have on the physical health of people with behavioral health conditions, it is not surprising that one of the primary goals of the DSRIP Demonstration was to utilize the IDNs developed as part of the Demonstration to promote community-driven models for care integration.[86]

Hypothesis 2.1 states that "integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area." Promoting integration of physical and behavioral health care is a primary objective of NH's DSRIP Demonstration. Measures under the Integration of Care domain examined the extent to which the DSRIP Demonstration activities fostered increased collaboration and communication, as well coordination and transitions, across providers. There were twelve measures associated with the hypothesis for Research Question 2. Outcomes of the measures are shown in Table 6.2-21.

The following trends in regard to care integration and coordination were observed for the study population:

- Rates of fragmented care increased for all Beneficiaries. However the rate of increase was significantly lower for Beneficiaries with behavioral health disorders than those without.
- There was no significant change in the rate of mental health hospitalization follow-up visits after discharge for the Demonstration period; however, there was a significant increase in the rate of follow-up visits in the Demonstration Pandemic period.
- There was an increase in the percent of Beneficiaries without primary care visits.
- Significant changes in the 30-day rate of follow-up visits after mental health hospitalizations were observed in both the Demonstration (decline of 5%) and Demonstration Pandemic period (increase of 5%).
- There was an increase in the rate of mental illness emergency department (ED) admissions with a follow-up visit within 30 Days in the Demonstration period.
- Thirty day follow-up visits for alcohol and other drug dependence (AOD) Emergency Department Visits were observed in both post- and Demonstration Pandemic periods; however, an increase in the coverage of AOD services for Beneficiaries contributed to this change.
- The Beneficiary survey saw positive change from Wave 1 to Wave 2 for the receipt of necessary care, timely receipt of necessary care, care coordination, and behavioral health composites. However, as these composites saw decreases in Wave 3, these

decreases are likely related to changes in health care and perceptions of health care due to the pandemic.

The increase in fragmented care and decrease in all Beneficiaries accessing primary/ambulatory or preventive care may reflect a confluence of changes including the Expansion populations change from PAP to a managed care plan and the Medicaid Maintenance of Eligibility requirements resulting in more Beneficiaries staying enrolled during the pandemic. Additionally, the decrease in preventive screening quality measures observed in the Quality of Care domain, provides evidence of DSRIP not attaining the integration with primary care Demonstration goal. This trend is observed in the whole Medicaid population. It appears that there may be some protective effect for the behavioral health population as evidenced by the lower rate of fragmented care as well as primary/ambulatory care.

Better follow-up on intensive behavioral health treatments of ED and hospital use provides support to the Demonstration goal for access to and coordination of care within the behavioral treatment arena—particularly the use of the Event Notification system launched as part of the Demonstration, and while not as fully implemented and robust, the Closed Loop Referral system, which provides for safe and timely transitions of care. Provider interviews on the topic of care coordination, referrals, and communications with other providers would further suggest the Demonstration met this goal, while beneficiaries reported over both interview periods they were generally satisfied with their care and shared mixed perceptions on integration of their care.

Table 6.2-21. Outcomes of Hypothesis 2.1

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
2.1.1	Fragmented Care	Partially Supported	Rates of fragmented care significantly increased for all Beneficiaries. However, the rate of increase in fragmented care was significantly lower for Beneficiaries with behavioral health disorders than those without, in both post and pandemic periods.
2.1.5	Receipt of Necessary Care Composite Score	Partially Supported	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic). Statistical testing was not conducted for composite scores, only on individual items within the composite.
2.1.6	Timely Receipt of Necessary Care Composite Score	Partially Supported	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic). Statistical testing was not conducted for composite scores, only on individual items within the composite.
2.1.7	Care Coordination Composite Score	Partially Supported	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic). Statistical testing was not conducted for composite scores, only on individual items within the composite.
2.1.8	Behavioral Health Composite Score	Partially Supported	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic). Statistical testing was not

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
			conducted for composite scores, only on individual items within the composite.
2.1.9	Mental Health Hospitalization Follow-Up (7-days)	Partially Supported	Follow-up within 7-days after hospitalization for mental health improved in the pandemic period; no other significant changes.
2.1.10	Mental Health Hospitalization Follow-Up (30 days)	Partially Supported	Follow-up within 30-days after hospitalization for mental health significantly improved in the pandemic period, but there was a significant decrease in the post period.
2.1.11	Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)	Yes	Follow-up within 30-days after an emergency department visit for mental illness significantly improved in the post period, however did not significantly improve in the pandemic period.
2.1.12	Alcohol/Drug Dependence Emergency Department (ED) Visit Follow-Up 30 days)	Yes	Follow-up within 30-days after an emergency department visit for alcohol and/or drug dependence significantly improved in both post and pandemic periods.
2.1.13	Ratings of Improvement in Care Coordination and Integration	Yes	Provider survey respondents indicated positive perceptions of successful care integration strategies and decreased barriers around information sharing, with the level of perceived successes and decreased barriers increasing in Demonstration vs. pre. Increased coordination and communication reported from Beneficiaries specific to HIT/ telehealth during the Demonstration pandemic period 2020.
2.1.14	Patient Experiences of Care Integration and Coordination	Partially Supported	Qualitative data collected from Beneficiaries indicate mixed perceptions of integration and coordination of their care both during and after the Demonstration, often reporting

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
			that they had no indication there was a change in their service delivery and/or they were satisfied, and nothing needed to change. There were some indications of increased coordination and communication via HIT during the pandemic period 2020, and no decrease in reported access to care and quality of care in post-Demonstration interviews.
2.1.15	Practice and Provider Experiences of Care Integration and Coordination	Yes	Thematic analysis of interviews showed both Administrators' and Providers' perception of improved care coordination and integration for Beneficiaries with behavioral health disorder(s) throughout the Demonstration; this was further quantified by survey data indicating increased perceptions of care integration and coordination from these stakeholder groups from 2019 to 2021 surveys.

Table 6.2-22 shows significant results by IDN and additional findings by IDN are outlined below the table.

Table 6.2-22. IDNs Supporting Hypothesis 2.1

Measure Description		IDNs in which Measure Supports Hypothesis ● Significant Improvement						
		IDN 1	IDN 2	IDN 3	IDN 4	IDN 5	IDN 6	IDN 7
Care Integration	2.1.1 Fragmented Care			●				
	2.1.9 MH Hospitalization Follow-Up (7 days)		●	●				
	2.1.10 MH Hospitalization Follow-Up (30 days)							
	2.1.11 Mental Illness ED Visit Follow-Up (30 days)			●				
	2.1.12 Alcohol/Drug Dependence ED Visit Follow-Up (30 days)			●		●		●

Following is a summary of improvements or positive outcomes by IDN.

Table 6.2-23: Improvements in Integration of Care by IDN

IDN	Integration of Care Improvements
1	• Receipt of necessary care composite score • Timely receipt of necessary care composite score • Care coordination composite score
2	• Increased follow-up within 7 days of a mental health hospitalization in post period.
3	• Decline in fragmented care. • Increased follow up within 7 days of a mental health hospitalization in post and pandemic period. • Increase in follow-up for mental illness emergency department visits within 30 days • Increased follow-up for alcohol and drug dependence emergency department visits within 30 days.
4	• No notable improvements
5	• Receipt of necessary care composite score • Timely receipt of necessary care composite score • Care coordination composite score • Behavioral health composite score • Increased follow-up for alcohol and drug dependence emergency department visits within 30 days.
6	• Receipt of necessary care composite score • Behavioral health composite score
7	• Care coordination composite score • Increased follow-up for alcohol and drug dependence emergency department visits within 30 days.

6.3 Research Question 3

Infrastructure: Workforce Development

6.3.1 Overview & Discussion of Hypothesis

> To what extent has the DSRIP Demonstration improved the capacity of the state's behavioral health workforce to provide quality, evidence-based, integrated care?

A key strategy for enhancing care for Beneficiaries with behavioral health disorders during the Demonstration was increasing capacity of the provider workforce to deliver evidence-based behavioral health care. IDNs pursued robust workforce recruitment, retention, and education efforts to ensure provider capacity aligned with competencies that informed statewide and community-driven projects. Critically, the effort facilitated progress towards delivering integrated, high-quality, evidence-based care for NH Beneficiaries with behavioral health disorders.

Table 6.3-1: Research Question 3 Summary At-a-Glance

Waiver Goal: Improve Capacity of the State's Behavioral Health Workforce	
Research Question 3 Hypothesis	**Analysis Supports Hypothesis**
H3.1 Capacity to deliver evidence-based behavioral health treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities	Yes
Summary: *1 hypothesis supported*	
Research Question 3: Results support waiver goal	

Research Question 3 was supported by one hypothesis. *Based on the evaluation's assessment of the size and training of the IDN provider network to care for and treat members with a behavioral health disorder, the hypothesis and research question were substantiated, and the waiver goal was met.* Due to extensive training and staffing expansion activities, the Demonstration improved the capacity of the State's behavioral health workforce to deliver evidence-based care.

6.3.2 Infrastructure Development

6.3.2.1 Size and Training of Provider Network

IDNs implemented a range of strategies designed to enhance the capacity of their provider network to deliver evidence-based integrated care as documented in semi-annual IDN administrative reports throughout the project to NH DHHS and available publicly on the DHHS website. Findings from document review around workforce capacity were corroborated by key stakeholder interviews and surveys in 2019 and 2021.

> *"When we talk about increasing capacity it is sometimes about adding people with expertise to the mix but it also is about giving the existing workforce the tools to be more effective."*
>
> - Administrator (2019)

6.3.2.1.1 IDN Project Staffing

Key stakeholders overwhelmingly indicated that the greatest success related to increasing behavioral health workforce capacity as part of the Demonstration has been their ability to use project funds to hire additional staff to support the work undertaken within their IDNs (Table 6.3-2). Numerous providers noted they had received funding to support additional staff time or hire new staff such as clinical social workers, community care coordinators, and resource specialists. Increased staff capacity has helped IDNs be more responsive to the behavioral health care needs of Beneficiaries while at the same time increasing their capacity to address social determinants of health. New staff has been used to increase care capacity and create innovative mechanisms for addressing Beneficiary needs such as having a coordinator in the emergency department to help address Beneficiary needs that are non-emergent in nature; creating mechanisms to assist youth in transition; and implementing outreach activities to help educate people about care integration. Other staff, made possible through DSRIP funding, helped to improve warm hand offs, make connections to community supports, and enhance capacity for outreach activities.

At the end of 2020, all IDNs had met at least 70% of their projected staffing need, and all but one of the IDNs had increased the size of the workforce dedicated to IDN projects from the end of 2018 (Table 6.3-2)

Table 6.3-2: IDN Project Staffing

IDN	Projected need	2018	2020	% change	% of projected need
1	11.15	13.35	23.3	75%	209%
2	36.9	32.4	36.8	14%	100%
3	101.13	66.41	71.02	7%	70%
4	65.8	56.4	53.15	-6%	81%
5	37.6	35.6	36.35	2%	97%
6	49.4	28.48	40.155	41%	81%
7	107	256	466.5	82%	436%

The narrative around the sustainability of these positions in the IDN close-out reports informs to what extent the growth of the workforce under the IDN extended beyond the Demonstration. Positions that could be efficiently reimbursed for, such as Integrated Behavioral Health Clinicians (IBHC), were discussed as being sustainable. The staffing of community-driven projects was more variable. Some partner organizations absorbed the costs of support staff having seen the value of integration and Critical Time Intervention (CTI) models, but this was not consistent across all IDNs. Some crucial support roles across community-driven projects have been adapted to fit currently billable models of case management and Certified Recovery Support Worker (CRSW). CTI positions hired under the DOC were less likely to be sustained. There were additional challenges related to sustaining community-based clinicians in rural areas, as the rate of reimbursement did not support the long driving distances required to serve patients in this context.

Qualitative data from key stakeholders similarly supports that IDN funding was leveraged to hire staff and adapt their roles to be billable post-Demonstration. In some cases, IDN funds were used for hiring, training, and licensing individuals for them to assume positions that could be reimbursed for in a fee-for-service model in the post-Demonstration period. This pertained to the hiring and retention of key personnel supportive of care integration and care transitions for vulnerable sub-populations and co-occurring diagnoses. However, many providers noted that these key roles initiated with IDN funds were adapted slightly post-Demonstration by the organizations in which these individuals were embedded as they demonstrated value in patient care. Providers and administrators emphasized that a value-based payment model would have better support integrated initiatives. In the absence of payment models that sufficiently reimbursed for key support roles, such as case managers and care coordinators, healthcare organizations chose on a case-by-case basis whether to absorb the costs of sustaining the role as it existed during the Demonstration.

> *"What we did was we took that money, we paid her salary for a year, got her on board, and used that time to license her and get her -- get her so that she could -- so that we could hopefully sustain her position by billing for her services."*
>
> - Provider (2021)

6.3.2.1.2 Retention

Most of the IDNs financially supported staff retention payments and other retention strategies for partners that were carried out internally by partner organizations' administrative and human resources departments. At least two IDNs supported loan repayment efforts for partner staff. Several IDNs specifically targeted positions of high need in order to allocate retention bonuses, such as Integrated Behavioral Health Clinicians.

While not explicitly designed as a workforce retention strategy during the planning process, documentation of multiple IDNs specifically discussed cross-organizational meetings as crucial to relationship building, enhancing peer support networks, and providing a venue for skill-sharing among behavioral health professionals in the region. This created a regional culture that supported and valued behavioral health professionals and their work, which was seen as critical to retention of behavioral health staff.

One IDN discussed their overall retention efforts as being their most successful of any of the other capacity building strategies. However, another IDN characterized retention as a persistent barrier, citing a 15% turnover rate across their integration sites over the course of the project.

6.3.2.1.3 Training and Education

A crucial piece of the workforce development component cited throughout administrative documents and in qualitative data was the training and education of existing and future staff. All IDNs discussed participating in professional development opportunities as critical to increasing the knowledge base of their existing staff, and some invested in internships and scholarships to support future development of the regional workforce.

The makeup and volume of trainings is described in Table 6.3-3. 32%; all trainings involved behavioral health awareness and evidence-based skills to treat individuals with behavioral health disorders. Specific training topics included general knowledge such as mental health first aid and trauma-informed care, as well as specific evidence-based tools for clinicians such as motivational interviewing, cognitive behavioral therapy, and crisis intervention. There were approximately 128 trainings of this type over the course of the Demonstration.

Table 6.3-3: Cumulative Trainings by Type

Type of Training	Number of Trainings	Percent of Total Trainings
DSRIP Program Specific	13	3%
Youth, Adolescent, or Family Evidence-Based Practices	21	5%
General Behavioral Health Awareness and Evidence-Based Practices	128	32%
Substance Use Disorder Awareness and Evidence-Based Practices	60	15%
Workplace Skills	25	6%
Covid-Related Skills	8	2%
Clinical Sub-Populations	22	6%
Integration	24	6%
Population Health	8	2%
Cultural Competence, Stigma, and Bias	36	9%
CCSA	6	2%
Peers and Community Engagement	35	9%
Community Health Worker Training and Engagement	9	2%
Medical Interpreting Training	3	1%
Total	398	

The second most frequent topic of trainings was substance use disorder awareness and evidence-based skills to treat individuals with substance use disorders. The make-up of these types of trainings was very similar, ranging from training on ASAM and Addiction 101, to specific models for treatment and evidence-based practices for treating specific and poly-substance use disorders. IDNs held approximately 60 of these trainings during the 5-year period.

> IDNs sent partner staff to over 22 conferences during the Demonstration period

Other popular training presentation topics included

those that engaged paraprofessionals and the community; trainings about specific sub-populations in behavioral health setting; and, trainings on cultural competence, health equity, and anti-stigma trainings (Table 6.3-3). Trainings for providers on workplace skills such as effective supervision and mental health skills were also frequently held, and at the onset of the COVID-19 pandemic, some IDNs discussed facilitating training for behavioral and medical providers to use telehealth to deliver high-quality care to Beneficiaries (Table 6.3-3).

Table 6.3-4: Training Types by IDN

Training	IDN 1	IDN 2	IDN 3	IDN 4	IDN 5	IDN 6	IDN 7
DSRIP Program Specific	4%	1%	6%	0%	15%	0%	2%
Youth, Adolescent, or Family Evidence-Based Practices	7%	4%	5%	0%	0%	14%	2%
General Behavioral Health Awareness and Evidence-Based Practices	47%	26%	37%	20%	27%	34%	29%
Substance Use Disorder Awareness and Evidence-Based Practices	11%	22%	5%	0%	35%	8%	24%
Workplace Skills	2%	15%	5%	10%	0%	2%	0%
Covid-Related Skills	0%	4%	1%	0%	0%	5%	0%
Clinical Sub-Populations	11%	9%	4%	0%	8%	3%	0%
Integration	13%	3%	1%	20%	15%	10%	0%
Population Health	2%	4%	0%	5%	0%	3%	0%
Cultural Competence, Stigma, and Bias	0%	8%	28%	5%	0%	5%	0%
CCSA	2%	0%	4%	5%	0%	2%	0%
Peers and Community Engagement	0%	4%	4%	15%	0%	10%	37%
Community Health Worker Training and Engagement	0%	2%	1%	10%	0%	2%	6%
Medical Interpreting Training	0%	0%	0%	10%	0%	2%	0%

Heat map of percent of training type by IDN

Several IDNs supported expanding the peer recovery workforce through certifying recovery coaches through the Recovery Coach Academy Curriculum as well as expanding the capacity of existing peer recovery coaches by providing education around HIV prevention, naloxone, and suicide prevention.

IDN 4 allocated funding to provide scholarships up to $5,000 per semester to individuals pursuing professional certificates, associate degrees, bachelor's degrees, advanced degrees, or advanced certificates in behavioral health or related fields at select institutions. Over the Demonstration period, this IDN gave out scholarships to 33 graduates of three institutions of higher education in the region.

> *"Huge growth in certified recovery support workers. That's a really big deal, because that's a reimbursable role. From a sustainability perspective, that's really important"*
> - Administrator (2021)

IDNs also provided scholarships for various other purposes such as for career planning and professional development to staff at partner

organizations for certificates for Community Health Worker Training and Medical Interpreter Training. At least two IDNs (4 & 7) funded education for Community Health Worker training to expand CHW staffing at partner organizations. One of them noted success with this strategy, quickly meeting targets for clients served. Several IDNs also offset the cost of lost productivity from providing supervision to clinicians working towards licensure. For Example, in IDN 3, with funding support from the Demonstration, 5 staff became LCMHCs (with an additional 2 staff expected in 2021), 3 became MLADCs (with an additional 2 staff expected in 2021), 1 became a PA-C with psychiatric certification.

Providers also noted positive experiences with the trainings offered by IDNs. Many providers remarked that the trainings and resources offered through the Demonstration were particularly helpful because it was often difficult to find funds to support workforce development. Other providers mentioned that making it easier to get a license to practice in New Hampshire has assisted IDNs with provider recruitment and retention.

> *"My experience has been phenomenal. As a small nonprofit, the ability to align with larger organizations and the resources around training and scholarship and workforce development assets are something that I could never offer to my organization. But in terms of retention and the ability to provide a workforce that can keep people engaged and provide them with the training and information and education they need to do the really hard work, the IDN has allowed us to really access amazing trainings and really keep people highly engaged."*
> - Provider (2019)

6.3.2.1.4 Ongoing Workforce Capacity Issues

While behavioral health workforce capacity has increased due to Demonstration resources and activities, there remains significant capacity issues. Nearly all providers interviewed also noted the significant challenge in the lack of behavioral health providers in the state. An additional barrier to increasing workforce capacity has been finding staff with the appropriate skill set to fill needed positions, especially in regions where there is low unemployment and high competition rates. Moreover, while many practitioners indicated that the support for behavioral health services has improved because of the Demonstration, many primary care providers continue to struggle to manage care for those with complicated behavioral health needs.

> "I guess sort of the biggest challenge that was present beforehand, and quite honestly, it's still there . . . has been the dearth of behavioral health providers in the State of New Hampshire."
> - Provider (2019)

Providers spoke of the difficulties in recruiting and retaining behavioral health staff; the need for more clinicians and counselors to address behavioral health issues; and, a lack of people to whom they could refer patients for more advanced psychiatric care. Several providers noted the impact of the behavioral health workforce shortage on Beneficiaries. Limited provider capacity has caused long wait lists and, in some cases, limited access to much needed behavioral health services.

Many PCPs spoke of the need for additional support for high-need patients with complex care needs. Specifically, most interviewees felt the lack of behavioral health providers created a burden on primary care. In addition to the shortage of behavioral health providers, the limited number of locations for behavioral health treatment in the state meant that patients were increasingly seeking care for behavioral health issues in primary care settings, leaving practitioners to manage care for complex cases for which they did not feel they had the resources. Even providers who reported having behavioral health staff integrated within their practice indicated they frequently had issues meeting the needs of Beneficiaries who required a higher level of care or psychiatric services because there were so few places to refer these individuals.

> *"So although the integrated behavioral health allows us to take care of much more than we had been able to in the past, within primary care, we can't take care of everybody adequately when people have . . . complex psychiatric problems. And it is—it is still really tough getting people in for that kind of care."*
>
> *- Provider (2019)*

Providers also discussed the growing challenges associated with managing patients with SUDs. Many providers reported they could get Beneficiaries into medication-assisted treatment programs (MAT), especially in the more populated areas of the state. However, Beneficiaries with co-occurring SUD and behavioral health conditions often required a level of care and ongoing management that was beyond the scope of what MAT programs or providers in their service area could handle. Again, as discussed above, many providers expressed that they were often left managing the care of patients with co-occurring disorders whom they did not feel fully equipped to manage appropriately.

> *"And so primary care has been faced more and more with having to manage patients that they're not at a level of comfort managing, but don't have any other options."*
>
> *- Provider (2019)*

> *"We as a mental health center did trainings on physical health and ...the hospitals and the more medical people were able to get more trainings on behavioral health and what it looks like ... and how to deal with it, which was a good thing."*
>
> *- Provider (2019)*

To align with the need for greater capacity to manage individuals with complex care needs, over 22 trainings were conducted over the Demonstration period to specifically address clinical sub-populations, such as those with dual substance use and mental health diagnoses. In the 2021 provider interviews, education around mental health for diverse provider groups was discussed positively. Education around behavioral health and co-occurring disorders for all provider types was explicitly attributed to a greater capacity for managing behavioral health in primary care and other medical care settings and benefitting integration as a whole. Scholarships and CMEs for entry-level behavioral health clinicians provided an opportunity to enhance licensure and reimbursement ability within primary care organizations in order to increase capacity to manage behavioral healthcare of Beneficiaries without referring elsewhere. Other providers expressed that the networking component of training and education initiatives provided visibility of expertise in the region, and facilitated

the ability to ask for support and advice in managing patients. Trainings around core competencies that were provided to large groups collaborating on a statewide or community-driven project similarly provided a common language and understanding, shared expectations, and baseline knowledge across diverse organizations.

6.3.3 Summary

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
3.1.1	Size and Training of the Provider Network	Yes	IDN documents indicate extensive training and retention activities throughout the Demonstration, and sustainability of increased workforce capacity to deliver evidence-based behavioral health treatment. This was further substantiated by interview and survey data.

Overall, the Demonstration's workforce development initiative was successful in sustainably achieving the waiver goal, enhancing the capacity to deliver evidence-based, high-quality health care to NH Beneficiaries with behavioral health diagnoses across medical and behavioral health providers. The critical success of capacity-building was demonstrated through extensive and diverse training activities for provider and community groups, additional support for education and professional development, and targeted recruitment and retention strategies. Based on process-oriented evaluation, the achievement of this waiver goal hinged primarily on two key strategies:

◆ Focusing on capacity building strategies that were responsive to unique challenges among network partners, such as enhancing primary care provider competencies to manage patients with behavioral health needs, and providing professional development regionally where there were severe provider recruitment challenges; and

◆ Prioritizing sustainable developments, such as development of shared core competency skills regionally, offsetting the cost of supervision for professional development, and supporting the development of reimbursable roles, such as Community Recovery Support Workers.

In the context of unprecedented national staffing challenges exacerbated by the COVID-19 Pandemic, IDNs were able to expand capacity of the workforce and sustain new roles and positions because of the Demonstration. Outside of the administrative data upon which the measure is predicated, qualitative data indicates that despite major progress and successes attributed to training, recruiting, and staffing initiatives, there is still needed progress to ensure gaps in evidence-based care are further addressed.

6.4   Research Question 4

Infrastructure: Health Information Technology (HIT) Ecosystem

6.4.1 Overview & Discussion of Hypotheses

> To what extent has the DSRIP Demonstration enhanced the state's health IT ecosystem to support delivery system and payment reform? Have changes to the HIT ecosystem brought about by the DSRIP Demonstration specifically enhanced the IDNs concerning the following four key areas: governance, financing, policy/legal issues and business operations?

Research Question 4 encompasses the waiver goal of improving New Hampshire's health IT ecosystem; the Demonstration's HIT infrastructure building aimed to support an integrated delivery system through improved and integrated information sharing, and payment reform through reporting mechanisms that are the platform for value-based payment. The hypotheses postulate that 1) health IT infrastructure among the IDNs will improve because of the DSRIP Demonstration's statewide and IDN specific project activities, and 2) Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.

Table 6.4-1 Research Question 4 Summary At-a-glance

Waiver Goal: Improve New Hampshire's' Health IT Ecosystem	
Research Question 4 Hypotheses	**Analysis Supports Hypothesis**
H4.1 Health IT infrastructure among the IDNs will improve as a result of the Demonstration statewide and IDN specific project activities	Yes
H4.2 Health IT strategies implemented during the DSRIP demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders	Yes
Summary: *2 hypotheses are supported*	
Research Question 4: Results support waiver goal	

Research Question 4 investigates the achievement of the waiver goal pertaining to improvement of New Hampshire's Health IT ecosystem. Hypothesis 4.1 is supported by three measures: Enhancements to IT System, Perceptions Of Enhanced IT System, and Perceptions of the Usability and Utility of the System. Hypothesis 4.2 is supported by three measures, as well: Care Coordination Composite Score, Ratings of Improvement in Care Coordination and Integration, and Perceptions of Improved Information Exchange. *The results of the evaluation show enhancements to the HIT ecosystem as well as improvements in care coordination and integration; thus, the hypothesis and research question were substantiated, and the waiver goal was met.*

6.4.2 Infrastructure

Research indicates that HIT plays a significant role in facilitating care coordination and transitions of care.[88] Enhancing HIT ecosystems to allow for greater communication and information sharing across organizations and providers can increase efficiency and improve patient access and outcomes.[87] Consequently, one of the primary goals of the Demonstration was to enhance the HIT ecosystem in NH; as part of the Demonstration, each IDN participated in a statewide project (A2) aimed at developing health information technology statewide (shared care planning, event notification services, direct secure messaging, and data sharing and aggregation). Other statewide projects and community-driven projects had HIT components as well.

This section builds upon the process evaluation conducted as part of the evaluator's Interim DSRIP Evaluation Report. Evaluators' document review and analysis of IDNs' quarterly reports, semi-annual reports, and close-out reports regarding the statewide HIT (A2) project, and triangulation from data from other statewide and community projects regarding HIT, bore themes from Demonstration-led HIT activities that were substantiated by qualitative data collected from interviews and surveys completed by IDN administrators, HIT stakeholders, providers, and to a lesser degree, beneficiaries. Themes emerged reflecting the successes and challenges of the HIT project infrastructure building around implementation, governance & operations (to include metrics development and data reporting as well as funding flow), care integration, and sustainability, as well as COVID-19 implications in 2020.

6.4.2.1 Enhancements to New Hampshire's HIT System

6.4.2.1.1 Overview of Initiatives: New Hampshire HIT System

The A2 project's initiatives included the implementation of the shared care plan, secure messaging, event notification software packages, as well as regularly submitting measures data to Massachusetts eHealth Collaborative (MAeHC). As noted earlier, due to the disruptions of the 2020 pandemic reporting requirements were eased for the partners as well as IDNs; additionally, the MAeHC ceased operations in June 2020 and the state determined it would not be moving forward with another data aggregator to finish out the Demonstration period.

The A2 project was supported by a statewide taskforce, with all IDNs participating. The Taskforce oversaw a needs assessment, worked to develop priorities given the objectives of the Demonstration, and identified the statewide and local IDN HIT infrastructure to meet the Demonstration goals and Special Terms and Conditions of the waiver. This Taskforce was the structure from which major challenges were workshopped and decisions were made regarding HIT infrastructure work across IDNs. The Taskforce worked across IDNs to establish workflows and overcome policy and privacy challenges that such an undertaking posed. All but one IDN (IDN 6) chose the same vendor (CMT) for their software package implementation, reportedly greatly increasing the robustness of the event notification system throughout the state. IDN documentation and qualitative feedback indicated IDN 6's large hospital partners were not amenable to using CMT, and that the IDN's chosen vendor

was unable to implement the shared care planning system and events notification system by the end of the Demonstration period.

That said, regardless of vendor, across all IDNs, not every partner was willing or able to implement software changes for a variety of reasons, including but not limited to ongoing privacy challenges, competing clinical workflows, and funding concerns. Each IDN worked towards performance targets that showed progress and, in cases where there was not widespread consistency of sustained HIT infrastructure changes, there were pockets of change and sustainability. All IDNs were heavily involved in training partners and gaining clarity as well as buy-in on confidentially requirements and privacy around 42 CFT Part 2 to enhance data sharing between partner organizations- something necessary before any of the HIT infrastructure improvements could be operationalize on a broad scale.

> *"We had access [to the shared care plan and event notification software], but did not tap into it. We were also -- and just to be fair to the IDN, during this same period of time, we were also engaging in a ... three-year data project - which we're still completing - that really was a time commitment to us, and we could not commit more time to learn another system as we were learning. We already had a system we were trying to integrate and it became really hard to manage all of those opportunities, so ... we did not have capacity to do both."*
>
> -Provider (2021)

The IDNs' partners implementation of different HIT components within the A2 project is shown below (Table 6.4-2). As data reporting was tied to incentive payments in the last years of the Demonstration, this was the most widely established metric at 84.1% statewide average, the second and third most implemented components were information sharing at nearly 80%, and event notification services at 75%, both of which tie closely to the broader waiver goal of care integration and, at a more granular level, improving care transitions as well as coordination.

Table 6.4-2. Partner HIT Components Reported as Fully Implemented by IDNs: A2 Project

	Event Notification Services	Shared Care Plan	Closed Loop Referral	Data Reporting	Information Sharing	Care Coordination
IDN 1: 13 Partners	92.3%	92.3%	92.3%	100.0%	100.0%	100.0%
IDN 2: 13 Partners	84.6%	7.7%	100.0%	92.3%	100.0%	100.0%
IDN 3: 62 Partners	54.8%	53.2%	3.2%	41.9%	0.0%	51.6%
IDN 4: 10 Partners	100.0%	0.0%	40.0%	100.0%	100.0%	40.0%
IDN 5: 14 Partners	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
IDN 6: 20 Partners	60.0%	85.0%	65.0%	95.0%	100.0%	80.0%
IDN 7: 28 Partners	33.3%	25.9%	37.0%	59.3%	59.3%	37.0%
Statewide Average	75.0%	52.0%	62.5%	84.1%	79.9%	72.7%

Source: IDN Close-Out Reports. Count incudes "fully implemented" and does not include "partially implemented;" as such, variations in reporting by each IDN may have occurred.

6.4.2.1.2 HIT Enhancement Context and Activities

6.4.2.1.2.1 Performance Metrics & HIT

One of the key components of the Demonstration implementation process for IDNs was establishing systems to meet the quality performance metrics reporting requirements of the Demonstration. While many stakeholders acknowledged that the implementation of processes to extract and report performance metrics was cumbersome, there was value in the reporting process. HIT stakeholders felt that the implementation of reporting processes offered an opportunity for HIT stakeholders to work with IDN administrators, providers and community partners to establish systematic mechanisms for data validation and reporting.

> *"While tedious, having the DSRIP outcome reporting through MAeHC has enabled us to do a 'deep dive' in our data collection and charting workflows. While some of the issue with our outcome scores had to do with how the data is being pulled from the system, it gave us the chance to look at opportunities for education with our clinical staff about how certain interactions with patients should be noted in their chart."*
>
> - HIT Stakeholder (2019)

An additional unanticipated benefit to setting up reporting structures was the relationship building between HIT administrators, IDN leadership, providers and community partners. This cultural shift was discussed by all of the professional stakeholder groups as being one of the most transformative parts of the Demonstration. The planning involved in establishing the infrastructure necessary to meet the Demonstration reporting requirements provided an opportunity for a variety of stakeholders that may not have typically interacted with in their daily roles, to understand each other's roles, reporting challenges, and work together to develop solutions with the goal of having something that worked for all participating IDN partners.

> *"When we think about the IT and data components - we've really been pushing quite hard, as I'm sure you know and are hearing from everyone, on the measures that we're paid upon. And so I think a lot of that is being aided by some of the technology pieces we put in place and that our partners are feeling more capable of robust data reporting and while it's still a significant lift, I think that we're seeing very positive trends in terms of the accuracy of the data submission."*
>
> -IDN Administrator (2019)

In addition, a variety of Demonstration participants, including HIT stakeholders and providers, acknowledged that the reporting requirements compelled their organizations to establish data collection and monitoring systems that were not previously in place. As a result, some stakeholders mentioned the increased availability of data to monitor population health, improve coordination across partners and promote more patient-centered approaches to care through data mining and sharing. However, there were unresolved challenges in many cases around staffing and

> *"So this time last year only one partner was reporting. Within six months, we had all of our partners reporting . . . so it was huge. I mean, we went from like basically one to, you know, zero to 60, right?"*
>
> -HIT Stakeholder (2019)

the human resources needed to keep up with the reporting required to maintain robust information sharing and real-time population health monitoring. Some survey respondents and interviewees discussed the "check the box" attitude that was in play across the Demonstration, particularity around the metrics and reporting activities, which was often an effect of competing workloads and staff time constraints.

> *"So, our IDN hired [a data analyst] who worked with every agency to collect our data, to then put it in a report and push it out. So, people were allowed …. to capture it the way that they wanted to and then he would put it into the report in the way that the State required it. Even when we worked with… [management consultants] on filling out 'how integrated are you' and scoring yourself, but then [each partner] did it in isolation with our own people. … I don't think we did a very good job on understanding the reports -- because we left it to the IDN leadership, to the executive director and [data analyst] to put it all together, put it in a nice package, send it off to the State, but not learn from it, necessarily."*
>
> - Provider (2021)

The novel nature of many of the measures (designed to complement the project) meant that new reports needed to be written, occasionally at significant expense, to the partner organizations and the IDNs. Furthermore, there were on-the-ground struggles around language and operationalizing information sharing for the clients with the most need: some IDN administrators noted frustrations with unwillingness of the managed care organizations to share definitions of "vulnerability" and "high risk" clients as they saw those definitions of clinical risk and/or utilization as proprietary.

Several stakeholders noted that the incentive-driven performance measures were not necessarily a valid indicator of improvement or performance, and that while there was considerable time and thought put into development of the metrics, there was not enough agility in the ability to affect change when many stakeholders realized that the metrics were superfluous and weren't always measuring what they should. That said, the HIT Taskforce worked closely with NH DHHS to try and more closely align the reporting and payment components of projects; according to IDN document review this reduced the measures' set by 20% and did allow for swapping out of more complicated measures for nationally validated ones. There was widespread agreement amongst HIT stakeholders, providers and administrators that there was a missed opportunity to more strategically align measurement and payment with the on-the-ground work and desired outcomes.

6.4.2.1.2.2 Data Sharing: Legal and Policy Issues
As succinctly summarized in an IDN close-out report, *"The overarching goal of the Demonstration waiver was to provide patient-centric care and to do so by integrating primary and behavioral health care. The anticipated challenge going in was with patient privacy. Historically, provision of mental health and substance misuse treatment have been distinct from provision of physical health treatment. Strong federal and state patient privacy laws and rules have reinforced these silos."*

HIT stakeholders reported legal issues and privacy concerns was the biggest barriers to implementing HIT software designed to enhance data sharing to promote care integration and transitions. Specifically, respondents mentioned the Code of Federal Regulations (CFR)

42 Part 2 (referred to as Part 2), which governs the use of health records for individuals with substance use disorders. Part 2 prohibits unauthorized disclosures of patient records except in very limited circumstances, and almost always requires patient consent in order to share information.[89] Given the Demonstration's emphasis on integration, collaboration, and promoting care transitions for Beneficiaries, IDNs faced challenges in establishing the infrastructure necessary to support communication and coordination of care across IDN partner organizations while at the same time ensuring they are compliant with CFR 42 Part 2 regulations.

In addition, Health Insurance Portability and Accountability Act (HIPAA) regulations made data sharing difficult. One example shared several times from data collected in 2019 and 2021 was the reluctance of larger health organizations to share information with non-HIPAA entities such as community-based organizations. Due to the complex nature of HIPAA and Part 2 regulations, many respondents expressed fear and confusion around what information could be shared. The fear of violating policies and regulations caused substantial delays in reaching the DSRIP Demonstration HIT goals.

There was significant feedback that working through privacy concerns was a lengthy process. In some cases, it took IDNs a year or more to determine what information was private and what data was allowed to be shared, while others reported spending several months developing consent forms, data sharing agreements, and business associate agreements.

> *"It's the authorization for confidentiality and all of that but it encompasses HIPAA and CFR 42 Part 2 and we developed one form and asked our partners to use it instead of what they had been using and that would allow for everyone to share patient care information amongst themselves . . . that makes the most sense, but you have numerous partners that have numerous boards and others that say no, we're going to use what we've always used, and/or don't necessarily trust that your legal advice is, you know, fully vetted even though it was over and over and over again."*
>
> -IDN Administrator (2019)
>
> *"I think people are scared of sharing something accidentally that they're not sure they should be sharing."*
>
> -HIT Stakeholder (2019)
>
> *". . . we still are challenged and were challenged back then that many organizations didn't have the capacity [for direct secure messaging] or, if they did, they weren't willing to receive things from us."*
>
> -Provider (2019)

6.4.2.1.2.3 Data Sharing Successes

HIT stakeholders and IDN administrators agreed that privacy / data sharing was one of the biggest challenges around the A2 HIT infrastructure work, but it also became one of the most obvious successes. IDNs used education and training on CFR42 Part 2 as a mechanism to help facilitate the implementation of structures to facilitate data sharing. For example, the IDNs organized legal clinics with the University of New Hampshire law school for stakeholders to attend. Working together, they outlined a way for data sharing that would

honor patient privacy laws; this meant identifying all constraints around 42 CFR Part 2, HIPAA, and state laws. There was also changing SAMHSA federal guidance around information exchange to navigate. The resulting components* included:

- Designation of sensitive organization under 42 CFR Part 2;
- Data sharing agreements among IDN partners;
- Business Association Agreements and Qualified Services Organization Agreements (BAA/QSOA) for data sharing with technical services vendors and DHHS; and,
- Guidance for documentation including consent forms and notices of privacy practices
Source: IDN Close Out Reports

While these clinics and the established pathway did not 100% assuage fears (and some partners were still not able to share patient information), HIT Administrators and HIT stakeholders noted that the effort's outcome helped to provide valuable insights and clarity, which was extremely useful for stakeholders as they identified possible strategies and mechanisms to implement systems for data sharing.

> *"Once it was known that this was not going to land anybody in jail – to be able to move forward and share information – it's been hugely helpful."*
>
> -Provider (2019)
>
> *"What we have found is that, more so with HIPAA than with 42-CFR Part 2 is it's perceived to be a greater barrier than it really is. So that's part of the process of educating people was when it does not need to be a barrier because the default for people is to say we can't share it when, in fact, the law can allow it. So it's like a general public education to raise, literacy around compliance and what the law actually does require and what it does not prevent."*
>
> -2021 HIT Stakeholder

HIT stakeholders reported that each partner organization took a different approach to establishing systems for data sharing as partners had different level of comfort and risk around information sharing. Some organizations created specific consent forms, while others created universal release forms; and, some IDNs took the approach of establishing provisions for organizations to opt in or out of HIT technologies. Several IDN stakeholders noted their universal consent form as one of their biggest hurdles and successes in the A2 project.

6.4.2.1.2.4 Operations

Aside from privacy and data sharing issues, additional challenges to HIT-related implementation and operations included various levels of engagement from different partner organizations. HIT stakeholders shared that leadership buy-in was often a hurdle, especially for larger health systems that needed approval from

> *"The biggest challenges overall is that all of our providers were using different electronic medical record systems … there isn't really capacity in terms of like tech jobs [support] for our primary providers. It's not like, you know, we had any of the resources that maybe [bigger cities] would have in terms of just the personnel that can actually get stuff done. I mean, I don't know how they would've all reported data without [a dedicated analyst from the IDN]."*
>
> -HIT Stakeholder (2021)

Boards of Directors. HIT stakeholders and IDN Administrators also spoke of the difficulties of competing priorities within partner organizations such as mergers, EMR conversions, or internal structural changes that delayed DSRIP efforts. Even if a partner was on board to make the HIT changes, each organization had varying levels of ability and time allocated to the HIT tasks and activities of the Demonstration, including data reporting as required by the waiver which made operationalizing some HIT strategies challenging.

> *"One of the things we have heard from our partners through that A2 journey, both in terms of implementing HIT infrastructure and figuring out how to leverage data for evaluation, is that … there's not a billing and reimbursement stream for HIT staff, and there's not a billing and reimbursement stream for quality improvement staff. Those are considered part of the overhead of the organization... It's really hard to get critical leaders to invest in those non-billable professions. If they don't invest in that workforce, they can't reform the delivery system, because they don't have the actual data and someone to analyze it and make recommendations based on that analysis to change the way they're doing business."*
>
> -Administrator (2021)

6.4.2.1.2.5 Data Reporting

In addition to variations in HIT implementation and utilization across organizations and providers, key informant interviewees also discussed other infrastructure elements such as financial resources, staffing to support notification software, and competing HIT priorities (such as using resources to support updates to EHRs) as challenges to the adoption, maintenance and sustainability of the software implemented as part of the Demonstration. Barriers to using the enhanced HIT systems were not just affected by limited financial resources, but were hampered by staff change fatigue. This was especially apparent for the extensive data reporting required by the Demonstration, which in many cases started with EHR data extraction and/or manual entry of data into spreadsheets. There were limitations of several systems' EHRs in ability to produce the data requested by the state. Learning something new and making time for additional training is difficult for busy providers who are already overburdened with multiple organizational and clinical priorities. Change fatigue was discussed as having a potential influence on the utilization of new HIT capabilities and the data reporting for performance metrics; with limited time and resources, providers noted they were often resistant to changes in their systems and workflows.

> *"There's still, you know, a human component to all of this versus the tech side of things … you still have to be able to have people skills and be able to explain things in layman's terms because not everyone is tech savvy and, you know, everyone has their own goals that they're trying to achieve and to try to convey to them, why we're doing this, you know: this is going to be hopefully the end result, you are going to see value."*
>
> -HIT Stakeholder (2021)

6.4.2.2 Perceptions of Usability of Enhanced IT System

As noted above, part of the statewide HIT project (A2), IDNs were tasked with implementing: Events Notification, Shared Care Plan, Direct Secure Messaging and Quality Data Reporting software. By the fourth year of the Demonstration (2019), IDNs were at various stages of software implementation, with significant progress made towards expanding the utilization of software applications and the majority of IDNs reporting that the required software packages were implemented or were in the process of being implemented at their IDNs. HIT software expansion was critical in supporting the closed-loop referral system, a key part of the Demonstration's care coordination efforts. In 2020, efforts were stalled due to the redeployment, furloughs or layoffs that occurred within the HIT sector due to the COVID-19 pandemic.

About a third of the HIT survey respondents had implemented the Direct Secure Messaging software at the time of the pre-survey in 2019, a rate which approximately doubled by the post-survey. HIT stakeholders also reported having implemented the Event Notification Software at the highest rate at the pre-survey and it remained the most prevalently implemented software of the three options at the post-survey. Although its implementation rate increased by 25%, the rate at which stakeholders reported having not implemented the software doubled. At the post-survey, the Shared Care Plan software was reported as being implemented by a third of respondents, but the rate of stakeholders who reported having not implemented the software increased seven-fold—an indicator of a lack of uptake on the Share Care Plan platform by many partners, as reported by interviewees.

Figure 6.4—1: Implementation Status of Demonstration Software Packages (2019, 2021)
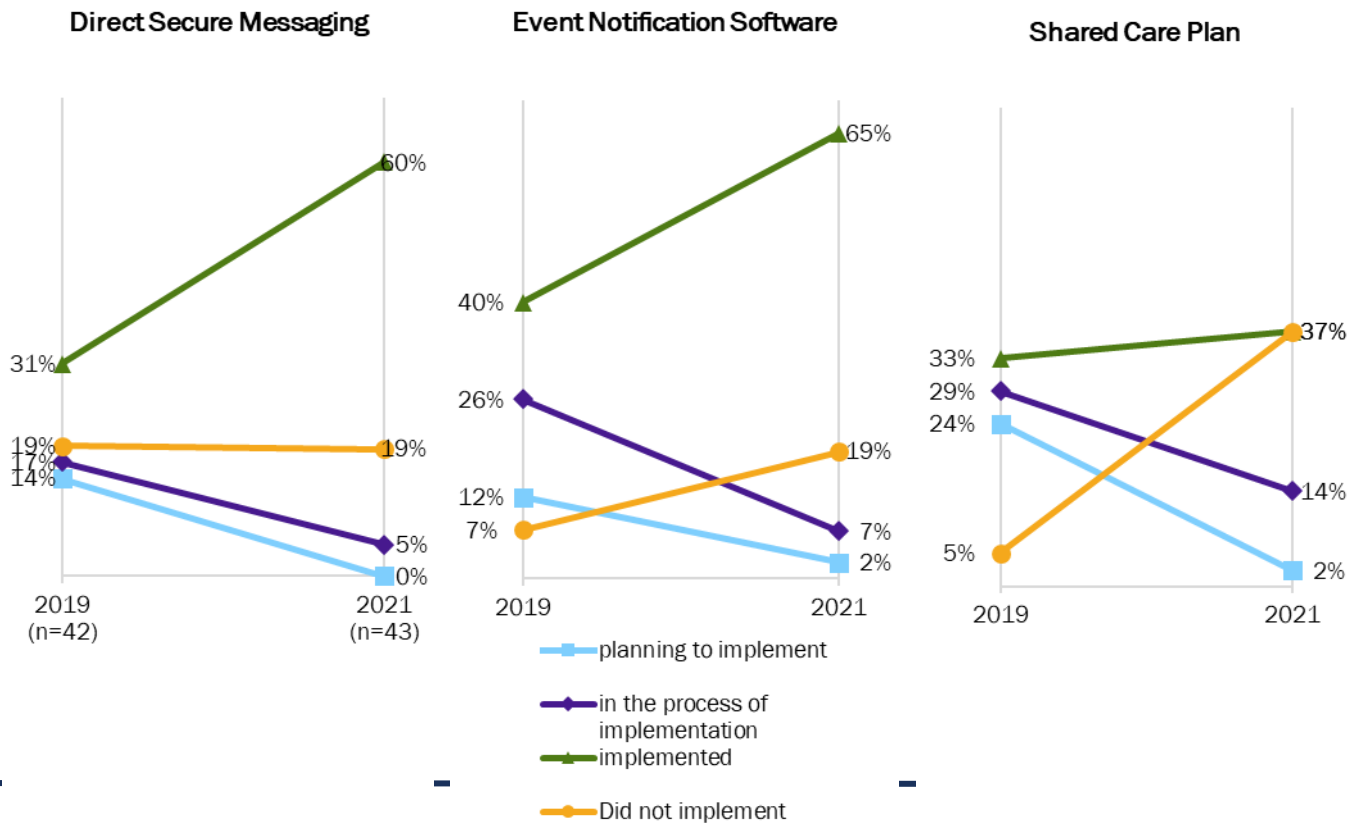
Same number of respondents for these survey questions

When HIT stakeholders were asked to identify the greatest successes in DSRIP-related HIT infrastructure development in 2019, the implementation of event notification systems and the enhanced capacity for data sharing through software applications were the most frequently cited successes of the Demonstration's HIT Project by both survey respondents and interviewees. HIT stakeholders were most in agreement that organizational leadership within the IDN (78.6%) and input from HIT Task Force, Work Groups, Committees, and similar initiatives (73.8%) had a direct influence on the successful implementation of DSRIP HIT strategies.

At the post-survey, over two-thirds of the HIT stakeholders agreed that "the use of electronic health records for data collection have been expanded". Further, about 45% of the HIT stakeholders maintained that "connection and active use of Direct Messaging, DH-Connect, and EHR vendor inter-vendor connectivity has occurred". While agreement that "the Shared Care Plan has been successfully implemented" was maintained at about one-fourth, it was still the least agreed with statement; again, this was further substantiated in interviews that indicated the shared care plan was not universally adopted by many partners; there was better success with the event notification system adoption.

> "The adoption of the event notification system varied among different network partners, but the ones who did adopt it in a robust way I think found it to be incredibly useful in terms of serving their constituents. We also had the ability to do shared care planning, although that wasn't quite as used as extensively."
>
> --2021 Administrator

Although the majority of respondents reported that they agreed that EMR EHR data collection was expanded over the course of the Demonstration, there was less agreement on whether vendor, inter-vendor connectivity and other communication through HIT platforms had occurred and whether or not the Shared Care Plan had been successfully been implemented.

Figure 6.4—2: HIT Stakeholder agreement with statements about Demonstration initiatives
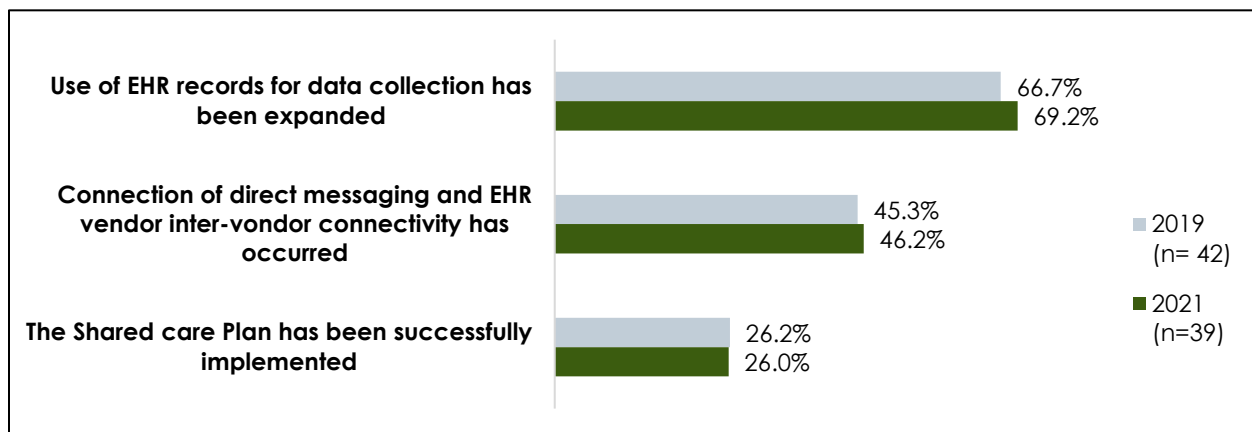
As noted, not all IDN partner organizations and providers implemented the software packages, even if they had the capability via Demonstration infrastructure building. Additionally, not every provider within provider organizations utilized the software; among the providers who participated in key informant interviews in 2019, approximately half reported using direct secure messaging or event notification software, and very few reported using Shared Care Plan applications. Of the providers interviewed in 2021, half were using event notification system software, and one-third reported using the Shared Care Plan platform. None of the provider survey respondents in 2021 reported currently using any of the software packages, though most of these respondents noted that utilizing the software was not applicable to their current role.

All IDN Administrators agreed that HIT enhancements were critical to the success of the Demonstration with the majority (63% in 2019; 88.9% in 2021) seeing the HIT infrastructure being very or extremely important to achieving the goals of the Demonstration. In 2019, IDN Administrators perceived the sustainability of the HIT infrastructure created under the Demonstration, as moderately (50%) to very likely (50%); while in 2021, two-thirds (66.7%) of the Administrators felt that changes made by the HIT infrastructure remained in place.

Perceptions of the Enhanced HIT system

Stakeholder perception of the successes and challenges of the DSRIP Demonstration HIT activities indicate enhanced integration of care for Beneficiaries, specifically by allowing more collaboration among systems, settings (i.e., primary care, community social services, behavioral health care) and providers. There is agreement that the Demonstration had lofty goals for increasing and improving HIT capacity; even if all these goals were not met, they pushed siloed organizations to connect and innovate to share information. Several activities took longer than expected (notably, information sharing agreements and partner buy-in) and in the final year of the Demonstration, other unforeseen issues (i.e., COVID-19) took priority and diverted resources and commitment. Additionally, there were notable persistent concerns in both pre- and post- surveys as well as interviews about leadership priorities, fragmented regional and state resources, parallel initiatives that could have been better incorporated into DSRIP goals and work plans, and initiative/change fatigue. That said, several stakeholders discussed how quickly and successfully partners pivoted in 2020 in response to the COVID pandemic. They noted this was largely due to "simple" HIT improvements that had happened via the DSRIP Demonstration, such as getting secure access to the internet for small community partners, and

> *"We had one partner when we started out with the Demonstration, they didn't even have secure access to the internet - you know, for a very small investment, we helped them. Then they had to, during the pandemic, they had to go to a telehealth platform. You know, it's a substance use disorder peer support organization, they do a lot of 12-step programs ... they were doing them all, you know, virtually. And when they first joined the network, they didn't have a secure access to the internet. Another partner that we had bought an electronic health record just 'out of the box' but had no real plan to how to implement it and we provided some consultants to them to get it going -- and that's now up and operational fully. So -- I think we demonstrated a number of different solutions, that different partners found [to be] beneficial."*
>
> -Administrator, 2021

outfitting case workers with tablets or smart phones.

Both HIT stakeholders and providers indicated that variations not only existed among different partners and their technology capabilities, but there were also variations across the IDNs. This was further complicated by EHR interoperability, which was another frequently cited barrier to utilizing software for notifications, messaging, and data sharing. In both 2019 and 2021, of the individuals who discussed using shared care plan applications, many mentioned they were not able to take full advantage of the HIT enhancements because their clinical and community partners currently did not have these HIT capabilities. Some noted that their EHR vendors were capable of exchanging limited patient data such demographics, allergies, and/or medications, but the more complex information critical for care coordination (i.e., assessments, plan of care) could not be shared.

While there were benefits to the software technology systems put in place, there were unresolved challenges in adoption and use across providers. Providers also had mixed responses regarding the level of successful software implementation and integration into practice. While the majority of providers agreed that enhancements to the HIT infrastructure have facilitated communication across organizations and providers, there were mixed responses on the reliability of HIT systems to deliver information between providers and promote timely communications to patients.
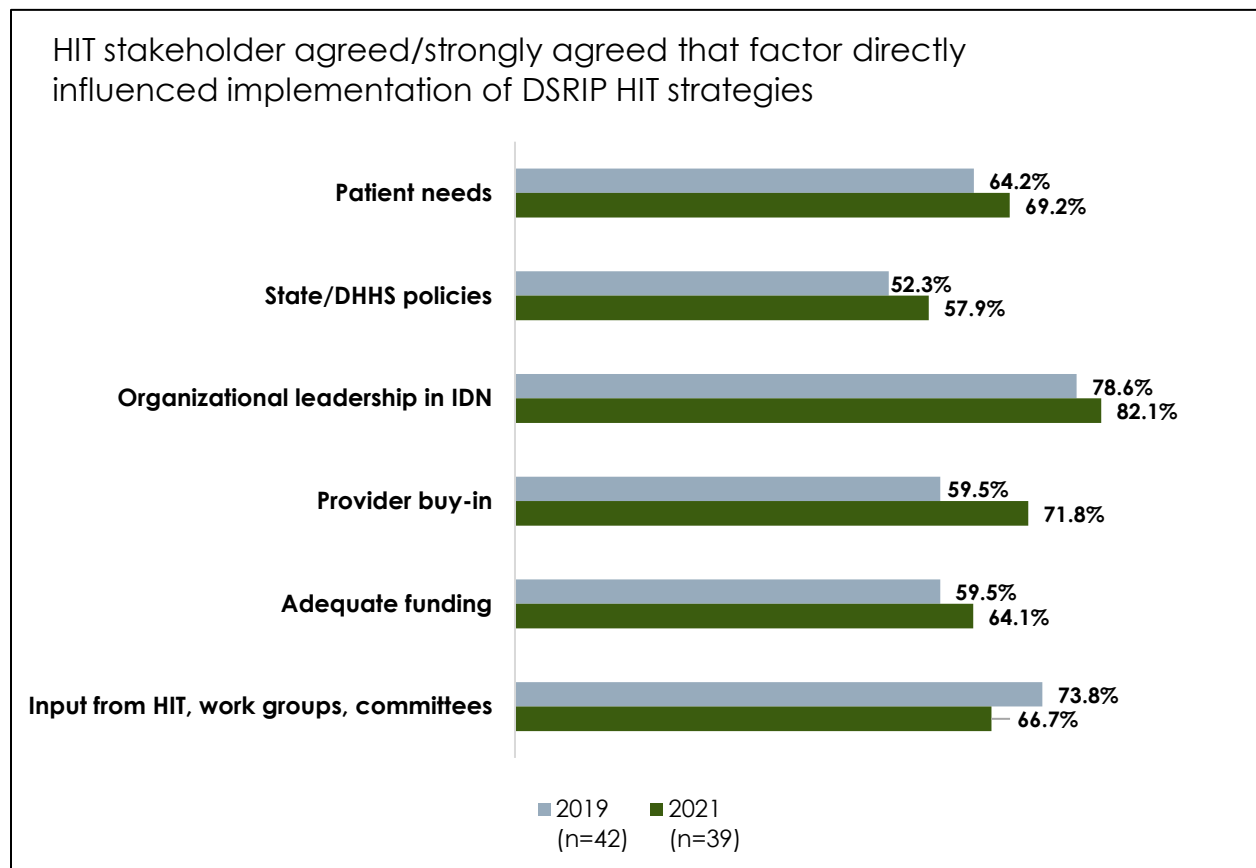
Figure 6.4—3: HIT Stakeholder ratings of ease of use of Demonstration Software Packages
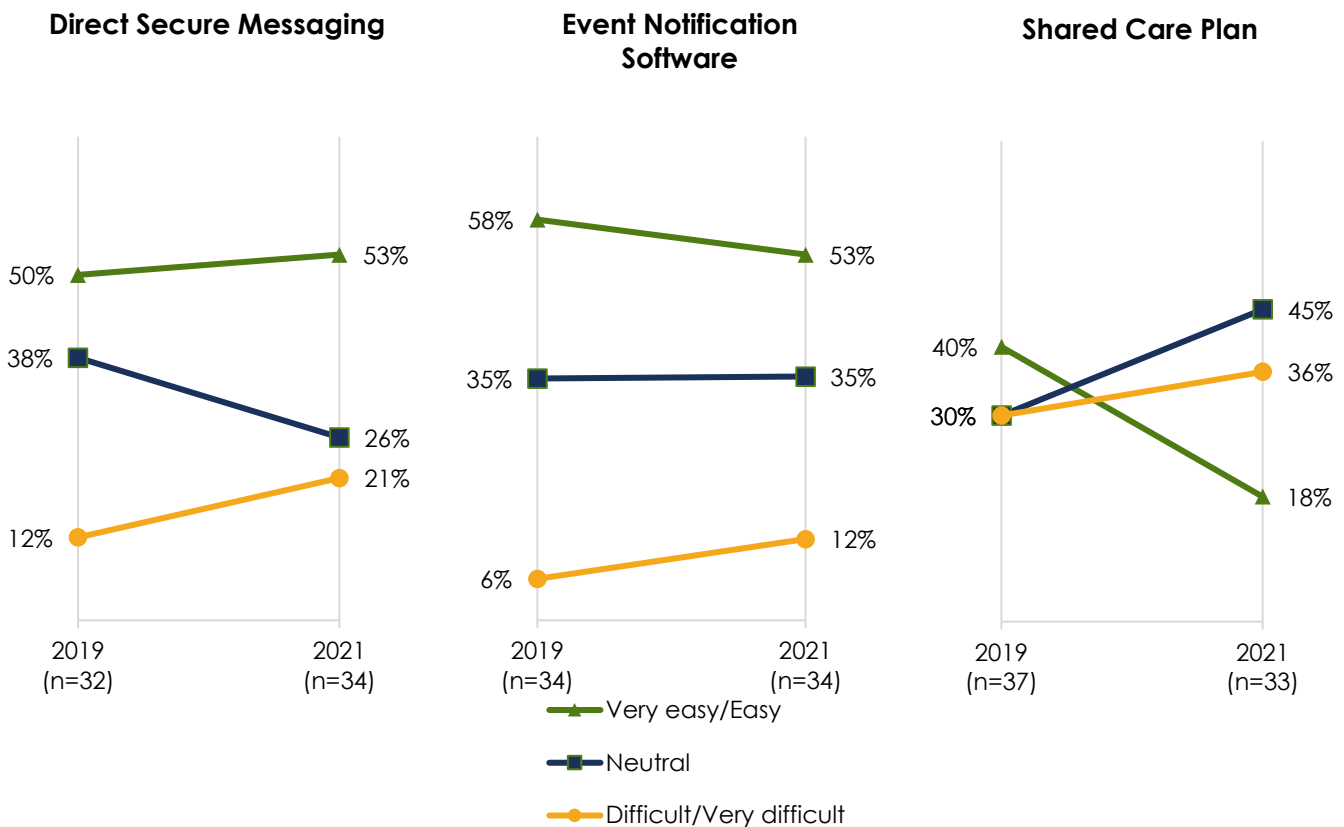
Ease of use of the software packages had a significant impact on their perceived utility in patient care. As show in Figure 6.4—3, the HIT stakeholders indicated that the software tools were fairly easy to use. About half of the stakeholders found the Direct Secure Messaging and Event Notification Software to be "Very easy" or "Easy" at the pre- and post-survey. However, over the course of the Demonstration, some stakeholders indicated that these software tools were slightly more difficult to use than initially anticipated. Further, those who reported that the Shared Care Plan was easy to use decreased by 22%, indicating a more mixed use of the software. As one IDN Administrator noted in 2021, *"All of our partners did use the Shared Care Plan, but with mixed success. There's been more success for some of our partners using ENS to communicate to emergency departments and as a control tool for the population … they are doing some really cool things with the data."*

Among HIT stakeholders, the rate of agreement with "provider buy-in" as a factor that influenced the implementation of HIT strategies increased the most over the course of the Demonstration. The rate of agreement on the influence of "input from HIT, work groups, committees" decreased slightly. At the time of the post-survey, the fewest respondents believed that "State/DHHS policies" influenced implementation.

Figure 6.4—4: HIT Stakeholder agreement with facilitators of implementation of DSRIP strategies

HIT stakeholder agreed/strongly agreed that factor directly influenced implementation of DSRIP HIT strategies

Factor	2019 (n=42)	2021 (n=39)
Patient needs	64.2%	69.2%
State/DHHS policies	52.3%	57.9%
Organizational leadership in IDN	78.6%	82.1%
Provider buy-in	59.5%	71.8%
Adequate funding	59.5%	64.1%
Input from HIT, work groups, committees	73.8%	66.7%

The inverse findings of importance of IDN leadership as a greater factor at post-Demonstration than input from work groups and committees may indicate the end-of-Demonstration efforts that were more IDN specific once the larger, more complex issues of the HIT initiatives were resolved, a natural occurrence in such a multi-stakeholder effort.

6.4.3 Integration of Care

For the hypotheses 4.2, the perceptions of enhanced integration of care were examined and analyzed using stakeholder surveys and interviews, as summarized in this section.

6.4.3.1 Care Coordination Composite Score

As discussed in Section 6.2.1.3, for the Care Coordination composite score, six items from the CAHPS Beneficiary Survey regarding the care provided by the Beneficiary's personal doctor and the doctor's staff in the last 6 months were examined. The mean score, with a scale from 1-4, was 3.45 in Wave 1; 3.49 in Wave 2; and 3.44 in Wave 3. Results show that most Beneficiaries felt positively about care coordination throughout the three survey waves, with a slight increase in the composite's score from Wave 1 to Wave 2, but a decrease in Wave 3. IDNs 1, 5, and 7 saw increases in their composite score from Wave 1 to Wave 3.

6.4.3.2 Ratings of Improvement in Care Coordination and Integration re: HIT Infrastructure

Providers and HIT stakeholders widely reported that the use of HIT applications improved communication and care coordination across organizations and providers, and was instrumental in helping connect Beneficiaries with appropriate services. Access-related successes from HIT-improved care coordination included same-day appointments as a result of events notifications, and connections between providers and organizations that created additional appointment availability. For example, in 2019, a provider spoke of receiving a message from the emergency notification system regarding their patient presenting in the ER with a non-emergency and the provider offered an immediate appointment for them. By 2021, it was widely agreed upon by stakeholders that the ENS was one of the most successful of the Demonstration's components, and there was widespread agreement that care transitions had improved because of its implementation.

> *"One of the changes I am hearing about … there really is better integration of care . . . and [the Demonstration is} kind of closing the gaps in communication through the work of the IDN and the event notifications and information sharing . . .For instance, one of the areas in our region has our psychiatrist sitting on a care team meeting to discuss patients in common that show up in the emergency room or that we're treating or that are being treated by the PCP."*
>
> *- Provider (2019)*
>
> *"Getting information on event notification was and still continues to be helpful for our care coordinators. It also brought and allowed entities who wouldn't have been able to access technology like that to access it. One of our positions [community partner] was paid through the DSRIP waiver to be a care coordinator. So she was able to access CMT and work with the care coordinators. So -- otherwise wouldn't have had access to any of that. The same with direct care messaging."*
>
> *-Provider/ Administrator (2021)*

Figure 6.4—5. Percent of HIT Stakeholders who reported that Demonstration HIT strategies influenced...
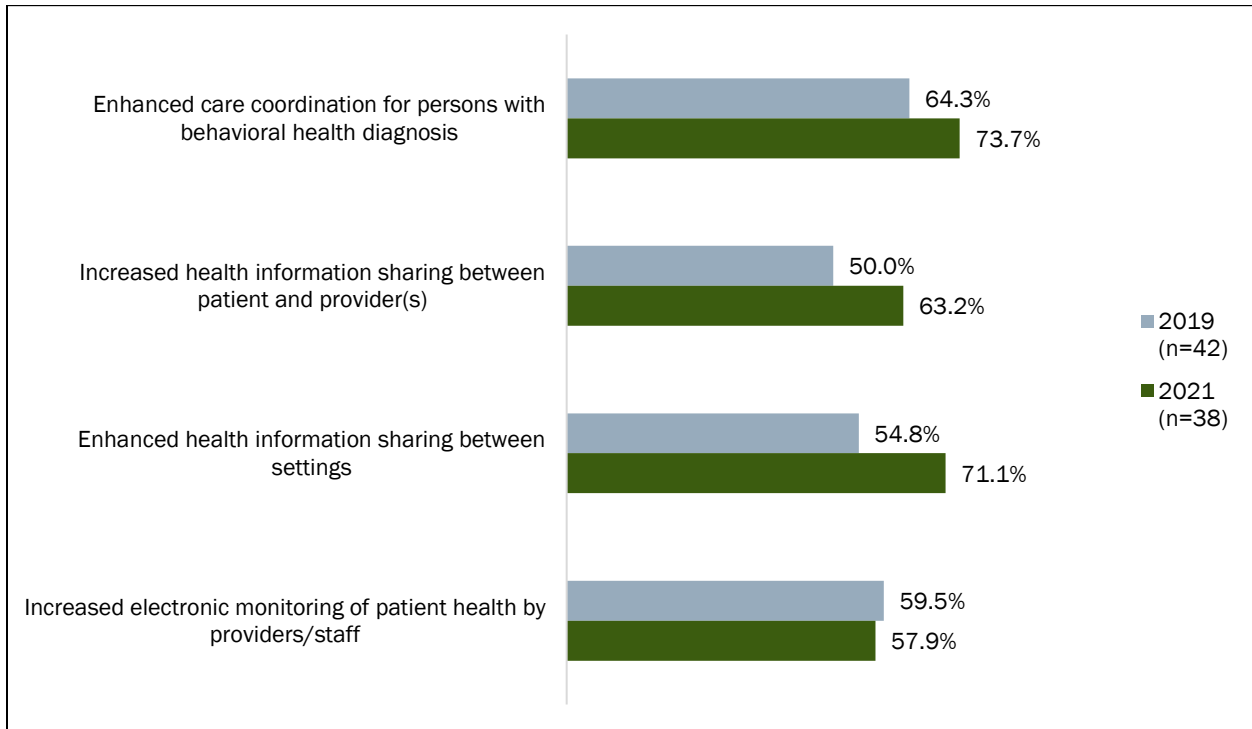
Broadly, there was increased agreement among HIT stakeholders on the Demonstration activities' effect on clinical workflows, which had impact on improved and integrated care for Beneficiaries. The most substantial increases in agreement were that the Demonstration influenced "increased health information sharing between patient and provider(s)" and "enhanced health information sharing between settings." These items increased in rates of agreement in the "pre-post" periods by over 25%. Stakeholders also reported increased agreement with the Demonstration's impact on "enhanced care coordination for persons with behavioral health diagnosis." While over half of the respondents agreed that the Demonstration "increased electronic monitoring of patient health by providers/staff," there was a slight decrease in agreement at the post-survey.

Below, Table 6.4-3 describes HIT stakeholder responses to key questions about HIT software implementation/enhancement and impact of the HIT infrastructure initiative by respondent IDN. IDNs 1 and 5 had high rates of software implementation as well as high rates of agreement that care coordination and between-setting data sharing had been improved. IDNs 3 and 7 had high rates of implementation of event notification, direct secure messaging, and EHR expansion, and at least moderate agreement that care coordination and care transitions had improved as a result of Demonstration HIT strategies.

Table 6.4-3 HIT Stakeholder Assessment of Implementation and Care Integration Outcomes

	Reported implementation of...				Agreement that Demonstration's HIT infrastructure development had positive impact on...				
	Shared Care Plan	Direct Secure Messaging	Event Notification	EHR expansion	care coordination	patient-provider data sharing	between-setting data sharing	care transitions	electronic monitoring of patient health
IDN 1	● (n=3)	● (n=3)	● (n=3)	● (n=3)	100% (n=3)	——— (n=1)	100% (n=3)	100% (n=3)	67% (n=3)
IDN 2	◑ (n=5)	● (n=4)	● (n=4)	◑ (n=5)	80% (n=5)	80% (n=5)	80% (n=5)	80% (n=5)	80% (n=5)
IDN 3	◑ (n=12)	● (n=14)	● (n=16)	● (n=15)	53% (n=15)	50% (n=16)	67% (n=15)	73% (n=15)	47% (n=15)
IDN 4	○ (n=6)	◑ (n=4)	◑ (n=4)	● (n=4)	75% (n=4)	——— (n=3)	75% (n=4)	100% (n=4)	75% (n=4)
IDN 5	● (n=2)	● (n=2)	● (n=2)	● (n=2)	100% (n=2)	100% (n=2)	100% (n=2)	50% (n=2)	50% (n=2)
IDN 6	○ (n=8)	○ (n=8)	○ (n=8)	◑ (n=6)	100% (n=5)	40% (n=5)	40% (n=5)	40% (n=5)	40% (n=5)
IDN 7	◑ (n=3)	● (n=3)	● (n=3)	● (n=4)	75% (n=4)	75% (n=4)	75% (n=4)	75% (n=4)	75% (n=4)

● >60% respondents reported implementation

◑ > 30, <60 respondents reported implementation

○ <30% respondents reported implementation

Note: items that were skipped by >40% of respondents excluded

6.4.3.3 Perceptions of Improved Information Exchange

Administrators, providers, and HIT stakeholders shared their perceptions of how Demonstration HIT implementation strategies influenced information exchange among behavioral health, physical health, and social service organizations. There were further perspectives on factors that influenced information exchange throughout the Demonstration, and the effect that information exchange had on patient care and integration of care.

In addition to variations in HIT implementation and utilization across organizations and providers, key informant interviewees also discussed other infrastructure elements such as financial resources, staffing to support notification software, and competing HIT priorities (such as using resources to support updates to EMR) as challenges to the adoption, maintenance and sustainability of the software implemented as part of the Demonstration. IDN and HIT stakeholders spoke about closed-loop referrals as a facet of integration in variable stages of implementation among partners when the Demonstration ended. These stakeholders also noted that the HIT software expansion was key in supporting the closed-loop referral system, but that disruptions in 2020 stalled efforts on all fronts to realize goals and finalize plans. Finally, barriers to using the enhanced HIT systems were not just affected by limited financial resources but have also been hampered by staff change fatigue. Learning something new and making time for additional training is difficult for busy providers who are already overburdened with multiple organizational and clinical priorities. Change fatigue was discussed as having a potential influence on the utilization of new HIT capabilities; with limited time and resources, providers noted they were often resistant to changes in their systems and workflows.

When asked to identify the greatest success(es) in DSRIP-related HIT infrastructure development related to data sharing and reporting, HIT stakeholders most frequently mentioned: implementing event notification systems for real-time data sharing; working to streamline CCSA workflow; and the collaborative relationships with partners and providers that were established during the Demonstration HIT project.

> *"Especially with a shared care plan client, being able to have goals that we both are aware of and both working towards - when we do have some of these complex cases that meet the need for it we are essentially wrapping around the clients."*
>
> - Provider (2019)

The majority of providers surveyed in 2019 agreed that, despite enhancements to the States HIT infrastructure, there remained challenges to sharing information across organizations and providers (Figure 6.4—6). In 2021, there was a decrease in the number of providers who were experiencing barriers to information sharing. Having a lack of time and systems for delivering information reliably between providers were reported to be much less of a barrier in 2021 compared to 2019. However, these were still the two most common barriers reported by providers. The only factor that was rated more highly as a barrier in 2021 compared to 2019 was the perception that the provider's organization had uncommon goals to those of the Demonstration; some of this could pandemic-driven shifts in priorities and workforce in the final year of the Demonstration, as indicated by survey open-ended responses as well as provider interviews.

Figure 6.4—6: Percent of Providers Who Agreed & Strongly Agreed
Factor was a Barrier to Information Sharing
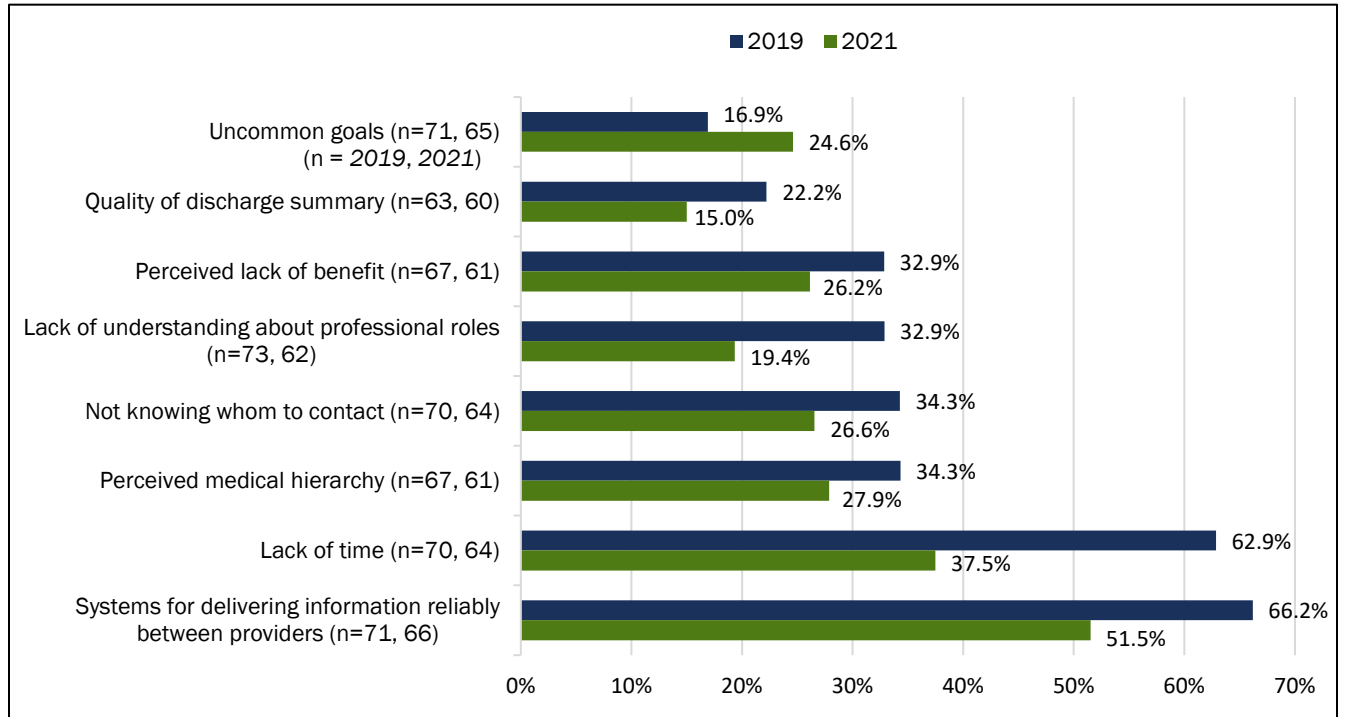
Providers believed that information exchange associated with specific software packages facilitated improved care for patients in a variety of ways. The event notification software aided in care integration and transitions as it provided stakeholders with real-time information allowing for more efficient patient follow-up. The events notification software has options for varying levels of notification and most IDNs reported sharing information on emergency room visits (across IDNs). HIT stakeholders reported anecdotes of patients using the ER less as a benefit of the events notification system. Interview feedback showed that integration initiatives, such as Community Care Teams and multidisciplinary care teams leveraged information-sharing software to improve Beneficiaries' quality of care by more fully addressing their social determinants of health, such as safe housing stability or legal supports.

> *". . . one of our shared care plan clients who's just done incredible work since having I think everybody on the same page and is doing a lot better clinically and addressing both his mental health and his substance use."*
>
> *- Provider (2019)*
>
> *"This is part of where all that legal stuff kind of delayed the process, but [the shared care pan] was -- it never really got down to workflow type of conversations because...one of the concerns was that if it's not integrated into my EMR and it will mean opening up another program to plug information in, then that's not going to fly at all for any med provider who has a packed schedule of patients."*
>
> *- Provider (2021)*

Another HIT stakeholder spoke of patients visiting multiple ER locations and that the shared care plan helped to create a connection between the providers at those locations. In 2019, several providers noted that while there was progress with the implementation of the shared care plan, to fully integrate and adopt shared care planning into workflows would be a large task to undertake; this was further substantiated by feedback in 2021.

> "Event notification has made a strong difference because where we're meeting -- we're meeting the needs of people in real time instead of waiting five days for a discharge summary to head to someone in your network and never get to somebody outside of your network. So that made a big difference. "
>
> - Provider (2019)

While the HIT approaches were intended to ultimately improve the integration of care, implementing these approaches could be a challenge for providers—one that was hard to overcome when they viewed their primary responsibility as seeing patients or running their organization. In both 2019 and 2021, providers expressed the tough balance between meeting the demands of their organizational responsibilities and those of the Demonstration. Additionally, providers and HIT stakeholders noted the duplication of work created by some of the HIT requirements and change fatigue resulting from multiple initiatives. While some providers mentioned the software was user-friendly, other providers recommended changes including having fewer "clicks" to access the data. Comments also included the challenge of dual documentation with the EHR which can limit the utility of the technology. For example, an HIT stakeholder shared that even if a provider had covered information with a patient and it was clearly in their chart, they would still have to click an extra box to show that they had discussed it, simply to meet the reporting needs of DSRIP.

6.4.3.4 HIT, Telehealth and COVID-19 Pandemic

Beneficiaries' Experience with HIT

While it is not a specific goal of the Demonstration to use HIT platforms to help facilitate access to care and/or improve patient experience, we wanted to understand Beneficiaries perspectives on HIT and how they perceived its utility and interconnection with their care access and quality. In 2019, this meant asking about the increased use of technologies for scheduling and viewing test results via portals. The variation between 2019 and 2021 interview data collected from Beneficiaries showed a stark difference between the pre- and post- groups for telehealth use, propelled by rule/reimbursement changes and almost immediate service use changes brought about by the COVID-19 pandemic that remained in place well after 2020.

In 2019, among the Beneficiaries who did report using some form of HIT, most mentioned using a web portal to get lab results then following up with the provider over the phone to review next steps. Other Beneficiaries who reported using a portal in 2019 did so in a more robust way by using it for medication refills, asking questions of the provider, scheduling of appointments, and accessing their full medical record. In 2019, Beneficiaries interviewed that took advantage of the full functionality of any type of portal was very low (<5). Some

indicated an interest or curiosity around using a portal but had a bad initial experience and would not try again or felt intimidated with trying in the first place. Very few Beneficiaries reported using HIT options provided by their care team to enhance their access to services. Most reported feeling most comfortable using the phone to try to identify available services and providers, as well as schedule appointments. The reasons that Beneficiaries gave for not using HIT included: not having access to the technology such as a computer or smart phone, fear of their medical information being hacked or compromised through a portal, lack of internet access or Wi-Fi access, and inability to access a specific technology due to living with a disability. In 2019, a few Beneficiaries reported using text or email to communicate as they felt it was easier for them to communicate and "touch base." No one in 2019 reported using telehealth for the provision of health care appointments.

The COVID-19 pandemic had an immediate and dramatic impact on the delivery of health care services for Beneficiaries, in many ways forcing the implementation of new technological means of service provision for providers and patients alike. Many beneficiaries reported success with these changes as their health care provider organizations implemented or re-emphasized receiving health care in settings that were not in-person, such as telehealth visits, online portals, and text message correspondence. Beneficiaries commonly discussed these health information technology improvements as services newly offered at their provider organization, while other respondents experienced an increase in prevalence, focus, and innovation of preexisting services as adaptations to the newfound demands of the COVID-19 Pandemic. In other words, if these services were available prior to the pandemic, many Beneficiaries were unaware of them or their utility.

> *"I didn't even know [telehealth] was available before the pandemic...I definitely think it's helpful because I don't always have a car to get there, so some days that I have an appointment and I would normally have to reschedule or cancel, I can just have a phone appointment with her or I can talk to her through MyChart"*
>
> *"The pandemic opened my eyes to things that I didn't know that [my providers] had, which was pretty cool, like the portals and the online and the telehealth and all that stuff that before, I had no idea and nobody really told me about it."*
> -Beneficiaries (2021)

> *"I think [using telehealth] has been helpful because my neurologist is down in Manchester and I'm up here in Laconia...it's an hour and a half one way."*
>
> *"If I'm at work, I can send a text message or email or something and, you know, I can get the appointments that way. Before the pandemic when I used to do that, it was -- it was like they didn't really check their email as much."*
>
> *"I love the phone appointments, I don't have to find a ride!"*
> -Beneficiaries (2021)

Beneficiaries who supported these changes frequently cited the benefit of saving time with reduced in-person wait times, removed transportation barriers to appointments, and having 24/7 access to patient records though an online portal. Beneficiaries reported appreciating having the option to avoid in-person visits as they can be mentally overwhelming or overstimulating, which is particularly important given the elevated frequency of behavioral health disorders among this population. Furthermore, improvements in

these means of communication reportedly facilitated a more accurate and timely coordination of care from providers as their patients gain 24/7 access to lab results and similarly vital medical information. Beneficiaries also shared that they felt more comfortable in their home, so telehealth appointments allowed them to share information more openly and get more out of the appointment. Overall, many participants shared that the COVID-19 pandemic may have forced providers and patients into a way of getting care that they hadn't had before, but hoped that going forward telehealth would remain an option.

Alternatively, some HIT changes related to the COVID-19 pandemic posed challenges for Beneficiaries or were otherwise found impractical. The most significant challenge was that many individuals simply did not have access or the ability to utilize a phone, computer, or the required cellular/Wi-Fi connection to engage in telehealth appointments. Furthermore, some beneficiaries noted that the home environments (for themselves or the provider they meet with) could be distracting and unfit for telehealth appointments, making focus and open communication a greater challenge. Also, a collection of respondents indicated they didn't feel any need to change the way they've been doing things, coupled with a preference for in-person visits and a disinterest in learning how to use new technology or services.

> *"Oh, I know [telehealth] is available, I just don't know how to use any of it."*
>
> *"I don't have a cell phone, or computer – I'm not smart with that stuff."*
>
> *"Where I'm at, I do get Wi-Fi, but it's such limited [cellular service] access."*
>
> *"I suffer from migraine headaches, I've had fluid in the brain, so I cannot concentrate very easily. So the internet and all that stuff, no - it's not for me."*
>
> -Beneficiaries (2021)

Stakeholders' Experiences Perspectives on HIT, Telehealth, COVID-19

Beneficiary experiences in 2021 echo providers, HIT stakeholders and Administrator interviewees, all of whom discussed the integration of care that continued during the pandemic, the quick pivot to telehealth that occurred, and the fact that the groundwork laid by Demonstration activities directly contributed to the ongoing and uninterrupted care coordination experienced by Beneficiaries.

> *"One of the most impressive take-aways from COVID other than the quick jump to telehealth … is just how our partners dug into checking in with their clients and their patients and tying them to resources, because they knew what those resources were, because they were partners."*
>
> - Administrator (2021)
>
> *"So, we had great success with transitioning to telehealth visits. So that just shows you that, you know, going through all these waiver projects, they were able to adapt and change and modify their workflows to still meet the needs of their patients."*
>
> -HIT Stakeholder (2021)

All stakeholders discussed their wish for sustainability of telehealth services and that they are vital to moving forward, regardless of the length of the pandemic. Many stakeholders noted that the shift to telehealth was one of most transformative things that happened during the Demonstration, and that it complements other cultural shifts of collaboration, integration, and innovation that were embraced during the Demonstration. The increased access that telehealth reimbursement allows could be a key component of future sustainability of the Demonstration's successes, as several stakeholders discussed funding being a main reason why some HIT initiatives had halted at Demonstration's end.

> *"The other thing that definitely we've seen happen during COVID is the Governor's executive orders related to who can deliver telehealth and through what modes. Really affirmed what our -- particularly our behavioral health providers, but even in primary care space, have been saying for a long time, which is there are these particular credentials that have never been allowed to bill for telehealth who are quite capable of delivering good services. The emergency executive order supports a practice that they've requested for a long time, and they're hoping that what they've done is created a case for continuing those reimbursement models after the pandemic and really allowing those executive orders to become part of Medicaid practice."*
>
> -Administrator (2021)

6.4.4 Summary

Table 6.4-4 Outcomes of Hypotheses 4.1 and 4.2

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
4.1.1	Enhancements to IT System	Yes	HIT survey and IDN reports indicate improvements in HIT infrastructure due to Demonstration initiatives and activities, with varying degrees of success and penetration within and among the IDN partners.
4.1.2	Perceptions of the Enhanced IT System	Yes	Wide agreement that the Demonstration had lofty goals and intensive work plan for increasing and improving HIT capacity; many goals were partially realized. Even if all these goals were not fully met, the work done pushed siloed organizations to connect and innovate to share information for patients with behavioral health that had not been done before.
4.1.3	Perceptions of the Usability and Utility of Enhanced IT System	Partially Supported	While there were successes within each IDN of adaption of the enhanced HIT systems, stakeholders believed that state coordination and interoperability of HIT needed to be prioritized earlier and in a more ongoing, sustainable manner. There were mixed perceptions on the future utility of some of the enhancements made due to interoperability and funding issues.
4.2.1	Care Coordination Composite Score	Partially Supported	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic).
4.2.2	Ratings of Improvement in Care Coordination and Integration	Yes	See Measure 4.2.1 for CAHPS composite result; provider interviews indicated that for those systems using the HIT enhancements, there was improvement in information exchange (particularly across provider types) during the Demonstration particularly for the most at-risk patients with behavioral health diagnosis/es.
4.2.3	Perceptions of Improved Information Exchange	Partially Supported	According to interviews across stakeholders (administrators, providers, HIT staff, Beneficiaries), there was perceived improvement in patient/provider as well as provider-to-provider information exchange due to Demonstration activities, with several examples of enhanced care management especially around event notification system. Beneficiaries perceived improved information exchange most acutely in 2020 during the pandemic with telehealth, though Demonstration-induced enhanced care management related to HIT was largely invisible at the patient level.

The introduction of new HIT initiatives through the Demonstration did, overall, have a positive impact on data sharing, population health monitoring, and breaking down long-held silos within the health care delivery system in New Hampshire. HIT stakeholders agree that the work done around HIT initiatives for DSRIP helped create the opportunity to expand capacity for provider integration and collaboration. HIT stakeholders, providers, and administrators believed improved systems for data sharing, reporting, and most importantly, provider and organization communications about high-need patients, improved access to care, improved patient-centered care, and created opportunities that never existed before for medical, behavioral health, SUD, community-based providers to "be at the same table" for support and collaboration.

Stakeholders saw the vision for a state-level integrated HIT system and made strides to improve the state's infrastructure over the Demonstration. To achieve this vision uniformly going forward, stakeholders believed that state coordination and interoperability of contractor software needed to be prioritized earlier and in an ongoing, sustainable manner. Going forward, stakeholders hoped that software packages and workflows implemented as a part of the Demonstration that were working effectively not be made redundant. For instance, future initiatives should thoroughly inventory existing collaboration and infrastructure to identify opportunities to use its existing system to improve integration/communication instead of implementing additional health technologies.

Administrators, HIT staff and providers shared concerns about standardized measures used in the statewide analysis of Demonstration progress and their usefulness, flexibility, and accessibility for diverse provider organizations. There were also outstanding concerns about the pressing need to integrate with social service partners that reach the most vulnerable members of the community and are the most often the least advanced with HIT infrastructure; though there were pockets of improvement seen during the Demonstration with social service providers. Stakeholders believed that further conversations should take place around leveraging expanded infrastructure to continue integration work. To continue to expand effectiveness of these systems, workflows should be developed to share patient information and data from regional quality improvement initiatives with community-based organizations.

> *"[DSRIP HIT initiatives] did enable some very small organizations that had no means for, say, secure messaging to implement those tools and I think because of the implementation of CCT, there was better collaboration between the mental health center and some of the outpatient facilities, so there were pockets of things that I could say yes, I could see in these areas that it probably improved community care integration. But sustaining that really needed to get to a shared care plan and we never got there with CMT and Unite Us, it's going to be a long time before we're ready for that. So, I think the concept was embedded, I think people were invested in trying to get there, I think there was some nice connective tissue that started to grow but I ... don't think we have a sustainable plan for it."*
>
> -Provider (2021)

Several HIT stakeholders, providers and administrators noted that when the IDN and DSRIP funding ended there were some promising actions taken by the State to lead and continue initiatives implemented under the Demonstration. Specifically, Unite US (closed loop referral

system vendor) was perceived as having a positive effect on continuity of care that should be sustained and stakeholders were encouraged that the State was going to "pick up the ball" on that piece that had been hampered and delayed at the end of the Demonstration period due to competing demands from COVID-19. Further, some IDNs indicated appreciation for the progress towards a state-wide based HIT system and satisfaction with leadership commitment to HIT implementation and support, while acknowledging large gaps still exist within the state's HIT infrastructure. Furthermore, many stakeholders shared concerns about sustainability of HIT improvements and noted that without ongoing state support, much of the infrastructure may stagnate or fall away. Finally, there were very few stakeholders who believed there were more missed opportunities than improvements, overall, with the DSRIP Demonstration.

6.5 Research Question 5

Infrastructure Development: Alternative Payment Models

> To what extent has the DSRIP Demonstration improved the IDNs' readiness to transition to or implement Alternative Payment Models (APMs)? Are IDNs making adequate preparations in data infrastructure, financial infrastructure, and other required changes needed to achieve the goal of 50% of Medicaid provider payments to providers using APMs by the end of the Demonstration period? Have the IDNs engaged with the state and managed care plans in support of that goal?

Research Question 5 focuses on a cornerstone tenet of the DSRIP Demonstration in New Hampshire: moving towards value-based care payment model while shifting away from the fee-for-service model, with a waiver goal of paying half of Medicaid provider payments via Alternative Payment Models by Demonstration end. Based on the evaluation plan, the single hypothesis under research question 5 is that the DSRIP Demonstration activities improved the IDNs' ability to make necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal of 50% APM payments for Medicaid providers post-Demonstration.

Waiver Goal: Transition to Alternative Payment Models	
Research Question 5 Hypothesis	**Analysis Supports Hypothesis**
H5.1 DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.	No
Summary: *1 hypothesis unsupported*	
Research Question 5: Results do not support waiver goal	

The waiver goal of transitioning to Alternative Payment Models (APMs) is associated with one research question, one hypothesis, and two measures. The measures observe outcomes related to the APM transition as well as stakeholder experiences of participation in strategies to enhance the readiness of network partners to transition to APMs. *The results of the evaluation show while a variety of activities were conducted by IDNs to identify strategies and needs related to the APM transition, the knowledge gain did not translate into actionable steps for IDNs and partners to pursue and the transition to APMs was not fully realized. Thus, the hypothesis and research question were not substantiated, and the waiver goal was not met.*

6.5.1 Infrastructure Development

6.5.1.1 Transitioning to Alternative Payment Models

Th initial goal of New Hampshire DHHS was to utilize the activities of the DSRIP Demonstration to support the Independent Delivery Network's (IDN) implementation of alternative payment models. Administrative reporting indicated that extensive efforts were made by the IDNs to increase partner capacity to transition to APMs and identify innovative billing strategies, but both administrative and qualitative data sources indicated that there was not an increase in the implementation of APMs. While providers and administrators spoke to rich learning experiences provided as a part of the DSRIP Demonstration, they felt that there were no changes to payment models that could be attributed to the Demonstration.

All of the IDN administrators who completed the Administrator survey in 2020 indicated that their IDN had not been successful at transitioning to APMs.

There were also different baseline levels of APM utilization among IDNs driven by makeup of partner organizations. Stakeholders from IDN 7 discussed that their partners had experience with APMs. While this affected regional availability of APM implementation expertise for training and education, it did not influence Demonstration outcomes related to APM implementation.

Strategies pursued by IDNs to increase readiness among partners to adopt new APMs included:

- Reviewing existing MCO contracts among network partners.
- Identifying high-risk patients with integrated partners in the context of population health management and value-based payment models.
- Studying New Hampshire MCO procurement to understand shared responsibility between MCOs and IDNs.
- Collaborating with other IDNs and DHHS to identify and use billing codes for integrated care.
- Maintaining a collaborative relationship with MCOs and partners to enhance insight into data-driven APM planning.
- Outreaching to centers of expertise for technical assistance with financial modeling.
- Participating in regional and national conferences and events with focus on value-based payment.
- Evaluating suitability and feasibility of Local Care Management Entity (LCME) and other models of care for IDN and partner entities.
- Adapting goals and support strategies to specific network partners.

> "I think there was progress made. I think people have a better understanding of [APMs], and I think there's been some shifts, because of that understanding, but... I don't think it's been implemented widespread as a result."
>
> -Provider (2021)

The initial strategy proved to be infeasible because of uncertainty about the financing available under the demonstration waiver to support the IDNs' operations as risk bearing entities, NH DHHS pursued a secondary model for implementing APMs. In this approach, NH DHHS engaged their actuary to review requirements for the Managed Care Organizations (MCO) to enter into subcontract agreements with the IDNs that met the accreditation standards of the National Committee for Quality Assurance of health plans. While this requirement was established in agreements between NH DHHS and the MCOs, this approach also proved to be infeasible within the time constraints of the waiver program, even with coordination by NH DHHS actuaries. As a result, the requirement was removed from the MCOs contracts with NH DHHS.

NH DHHS ultimately determined that the transition to APMs in the NH Medicaid program was more appropriate through the MCOs. Transitioning to APMs through the NH Medicaid MCOs began in 2019 with a strategy aligned with the National Health Care Payment Learning and Action Network (LAN) APM framework. The strategy included:
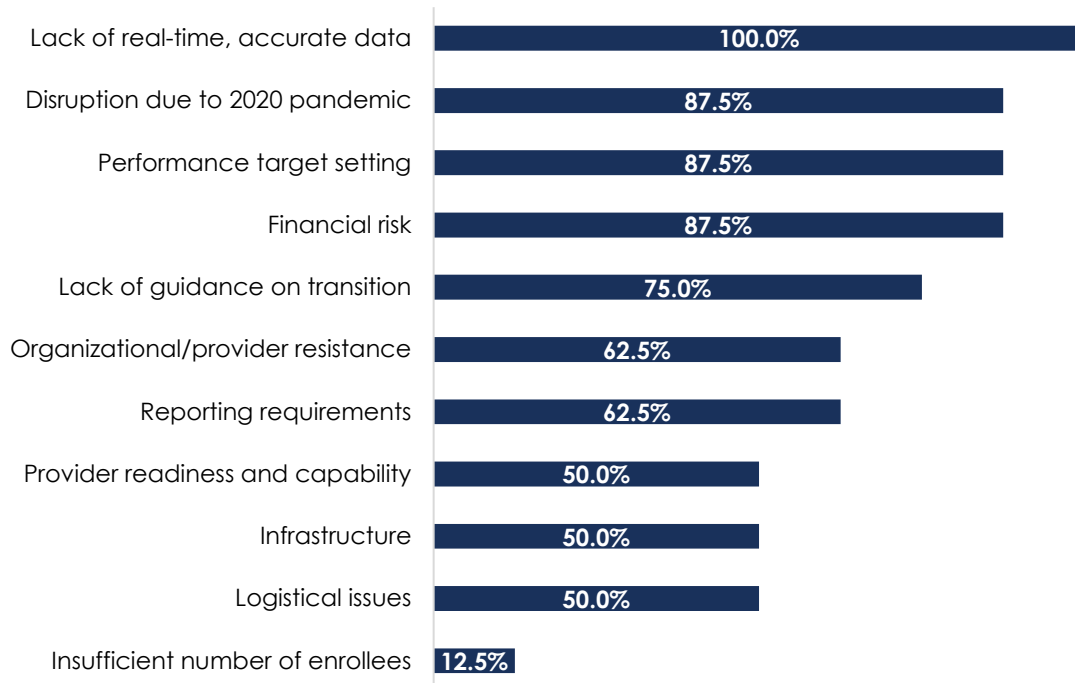
- A target of 50% of MCO medical expenditures to be included in qualifying APMs;
- Aligning MCO APMs with New Hampshire's strategic priorities and other quality initiatives;
- Standardizing MCO APMs to align with national LAN categories;
- APM standards for large providers and provider systems;
- APM accommodations for small providers;
- MCO requirements for APMs related to Community Mental Health Programs and Substance Use Disorder Treatment providers;
- MCO requirements of provider accessible APM reporting and technical assistance; and
- Department monitoring system of (1) MCO quarterly and annual reports and (2) semi-annual provider qualitative interviews.

6.5.1.2 Experiences Transitioning and Implementing APMs

Interviews with providers, administrators, as well as survey data among all stakeholders depict the experience of leadership and IDN partner staff during the initiative to transition to APMs. Individuals involved acknowledged the value of integration and community-driven initiatives to improve care, and throughout the Demonstration were given opportunities to learn about how value-based reimbursement through MCOs could sustain those models of care delivery.

> 100% of administrators reported challenges implementing APMs at post-Demonstration (2021) compared to 88.7% in 2019

Figure 6.5—1: Percent of IDN Administrators that reported factor was a challenge to APM implementation

Factor	Percent
Lack of real-time, accurate data	100.0%
Disruption due to 2020 pandemic	87.5%
Performance target setting	87.5%
Financial risk	87.5%
Lack of guidance on transition	75.0%
Organizational/provider resistance	62.5%
Reporting requirements	62.5%
Provider readiness and capability	50.0%
Infrastructure	50.0%
Logistical issues	50.0%
Insufficient number of enrollees	12.5%

2021

Among the nine IDN administrators, over half considered the disruptions of COVID-19, setting performance targets, financial risk, lack of guidance during transition, resistance from organizations and individual providers, as well as reporting requirements to be the greatest barriers to transitioning to APMs. All administrators reported being challenged by a lack of real-time, accurate data. However, administrators were relatively unlikely to report insufficient number of enrollees as a challenge to APM implementation. In an open response, one administrator reported that contracting with MCOs was not complete or robust enough to support the transition.

> *"Everybody agreed that we needed to activate some billing codes that weren't currently being used in New Hampshire that could help to support those care navigators, community health workers."*
>
> -Provider (2021)

Administrators felt that there were other supports that could have facilitated the adoption of APMs that were not made available to them during the Demonstration period. Administrators believed that planning for the APM transition should have begun earlier in the Demonstration period, especially considering the length of time dedicated to contracting with MCOs. The unmet need of supports related to guidance from the State and other technical assistance provided included a clear, formal roadmap adopted by DHHS; clarification on the role of IDNs as "risk-bearing entities" among partner organizations; and greater capacity of APM expertise regionally. Overall, qualitative and survey data indicated

that stakeholders felt that there was insufficient guidance on the processes and outcomes related to APM adoption, despite relatively good agreement among stakeholders about the importance of new and innovative reimbursement strategies.

Other strategies not pursued by the IDNs or the State that stakeholders acknowledged could have facilitated the APM transition included:

- Leveraging expertise and lessons learned from other states;
- Facilitating data sharing between DHHS, MCOs, and provider organizations;
- Greater clarity about the role of the IDNs; and
- More robust, achievable roadmap and outcome goals.

> *"I would say that if we had done the LCME, if ... all the IDNs were given the same opportunity to enter into conversations with all three of the MCOs and the state as a payer, then maybe we could've come up with an alternative payment model. But that never happened, and I don't... know that it ever will"*
>
> -Provider (2021)

There was some agreement among key stakeholders around what strategies were effective at engaging partners in increasing regional capacity to transition to APMs. Overall, the Demonstration engaged partners that might not have traditionally collaborated in discussing APMs and allowed exploration of the state's infrastructure and coding system. Stakeholders believed that education and training around HEDIS measures, explorations of care model codes, and enhanced communication with MCOs assisted with readiness to move towards APMs. Some partners acknowledged gratitude for convening experts in health policy from UNH, but that a greater investment in expertise was needed. In addition, partners believed that the greatest benefit in dealing with MCOs was gaining insight around MCO-specific tools to aggregate payer streams and exposure to population health management portals.

> *"The greatest challenge is aggregate data at the fingertips of the provider. Get it to the provider so they can act on it. You're never going to get a provider to log into 26 data portals and aggregate and curate their own data. It's never going to happen...they're busy taking care of patients."*
>
> -Administrator (2021)

However, New Hampshire's three managed care organizations and multiple payers, each with their own portals, were viewed as a barrier to a unified way in which to pursue APM transition and planning. Despite initiatives to increase capacity to collect and use data, there were still limited resources to make actionable progress toward APMs using organization-specific, regional, and statewide data. Administrators and providers specifically cited that a lack of data sharing of MCO and DHHS data further hindered efforts to plan for APM transition.

> *"So the APM readiness piece, what's really hanging our providers up in terms of APM readiness is the pathway to pay for the infrastructure that supports that data governance."*
>
> -Administrator (2021)

However, key stakeholders believed that regional partners ultimately were not able to build adequate sustainable infrastructure and knowledge to implement

APMs during the Demonstration period. Despite significant knowledge gain around the benefit of APM strategies to maintain Demonstration initiatives, there was a missed opportunity to transform the payment system influenced by confusion about the actionable role of IDNs and partners. Stakeholders expressed their perceptions that the Demonstration's considerable time investment on culture and systems change that did not lead to increased APM adoption, resulted in frustration and the erosion of trust from partners towards both the state and IDNs around payment reform. Further, State guidance did not take into account the role of overlapping initiatives and their influence on APM adoption. While the transition to APMs did not fully materialize due to delays in the implementation timeline, findings indicate that administrators and providers do see APMs as a feasible way to support integrated models of care.

> *"If you put trustable data in front of a clinician, they will shift their practice. I've seen it over and over and over again. They want to be the best they can be, and if they trust the data that's in front of them, they will modify their practice to meet the gold standard over and over and over again. That is a hallmark of the high quality clinicians we have in this country and in the state in particular. New Hampshire is really good at leveraging data to shift clinical practice. The trouble is, you can't -- under the APM infrastructures that currently exist today, you can't get data the providers trust, yet. First of all, it comes from the payers, so it fails the first sniff test. And then there are always these exceptions to [the data output], caveats of, but that's not right, yeah, but that's not right. ... there's this point where they throw up their hands and say, 'can't, can't - I'm going to go back to treating my patients now.'"*
>
> -Administrator (2021)

6.5.2 Summary

Table 6.5-1. Outcomes of Hypothesis 5.1

Measure	Measure Description	Measure Supports Hypothesis	Analysis Notes
5.1.1	Transitioning to Alternative Payment Models	Partially Supported	Diverse engagement and training activities of multiple partner types enhanced knowledge of strategies to increase needed organizational capacity for APM transitions. Lack of robust guidance, billing code activation, and necessary data infrastructure hindered advancements.
5.1.2	Experiences Transitioning and Implementing Alternative Payment Models	No	Administrator and provider perspectives indicate that there were several opportunities missed to better engage IDNs with MCOs and better educate systems and providers about alternative payment models. Majority felt the pandemic period of 2020 halted most of this work, which was perceived as already behind in the 4th year of the Demonstration.

While document review indicates that a variety of activities were conducted by IDNs to identify strategies and needs related to the APM transition, the knowledge gain did not translate into actionable steps for IDNs and partners to pursue value-based payment models. Stakeholders pointed to insufficiently robust statewide strategy, unavailability of billing strategies, unclear role of the IDNs and other stakeholder organizations, and lack of sustainable expertise, data, and infrastructure building as factors that influenced the inadequate preparedness to implement APMs as a result of the Demonstration. Notably, by 2019, New Hampshire DHHS had shifted its APM transition focus to the NH Medicaid Managed Care Organizations after determining that achieving its APM goal was not feasible within the Demonstration's construct and time frame.

7. Interpretations and Policy Implications

7.1 DSRIP Demonstration within Overall Medicaid Context

To better understand New Hampshire's DSRIP Demonstration within an overall Medicaid context, it is important to note any possible interrelations of the DSRIP program with other current initiatives within the state's Medicaid program as well as interactions with other Medicaid waivers and federal awards that can affect quality of care, service delivery, population heath, and the cost of care for Medicaid Beneficiaries. This section discusses the overall state environment where DSRIP resided, for New Hampshire to consider in its long-range planning as it seeks to further integrate care for its Medicaid Beneficiaries with behavioral health disorders.

7.2 Interactions with Other State Initiatives

7.2.1 Overview

Over the past decade, NH has initiated many health care reforms and invested in its Medicaid health care delivery system including:

- Several Home and Community Base Care Waivers;

- Moving from a fee-for-service (FFS) system to Medicaid Managed Care (2013);

- Expanding Medicaid coverage to 138% federal poverty level (FPL) under the Accountable Care Act (ACA) in 2014;

- Implementing the New Hampshire Health Protection Program (NHHPP) Premium Assistance Program (PAP) in January 2016. This Medicaid waiver program provided premium assistance to Medicaid members to purchase insurance on the New Hampshire health insurance marketplace (the Marketplace) through a Qualified Health Plan (QHP). The 3-year PAP waiver ended in 2018. In 2019, Expansion members transitioned back to Medicaid managed care under the Granite Advantage Health Program;

- Being awarded a State Innovation Model (SIM) grant designed to achieve the triple aim—better care for individuals, better health for populations and lower costs;

- Approval by CMS for the State's Substance Use and Disorders (SUD) Waiver Demonstration in 2018, currently operationalized, with the goal to provide more coordinated and comprehensive OUD/SUD treatment for Medicaid Beneficiaries;

- Releasing a new ten-year Mental Health Plan to extend DSRIP infrastructure to the broader population in January 2019;

- Receiving and implementing a Maternal Opioid Misuse (MOM) grant.

The behavioral health delivery system in NH includes services for both mental health and substance misuse treatment. Within this rapidly changing NH Medicaid context, the NH DSRIP Demonstration was implemented to strengthen and expand capacity for the state's behavioral health delivery system. Its key constructs are to provide better access to and integration of behavioral and physical care for people with behavioral health disorders, to strengthen community-based mental health services, combat the opioid crisis, and drive health care delivery system reform. This section will discuss possible DSRIP interrelations with other state and Medicaid initiatives affecting the NH health care delivery system.

7.2.2 State-Led Initiatives to Improving Quality of Care and Health Outcomes, Increasing Access, and/or Reducing Costs

7.2.2.1 Medicaid Expansion

New Hampshire adopted Medicaid Expansion under the ACA in 2014, providing coverage to individuals up to 138% of the federal poverty level (FPL). Under this expansion, over 69,000 additional individuals enrolled between 2014 and 2020.[90] The ACA required SUD treatment services to be covered for Expansion members; thus, New Hampshire added a comprehensive benefit for SUD services to Expansion members' benefit package. (Of note, in July 2016, SUD services were added to the standard Medicaid benefit package in New Hampshire.)

In March 2015, a new waiver changing the delivery method of coverage for persons in the Expansion was approved—the New Hampshire Health Protection Program (NHHPP), which is a mandatory exchange plan premium assistance program (PAP).

In 2018 the NH Legislature created the Granite Advantage Health Care Program, which moved the majority of the Expansion population from the mandatory exchange plan to standard Medicaid Care Management effective January 2019. Although PAP-enrolled Expansion members were initially excluded from DSRIP, 25% had behavioral health needs.[91] Expansion members who were dually eligible for Medicare and Medicaid, members younger than 19 and older than 65, and members who self-identified as medically frail, were enrolled in MOCs and were included in the DSRIP Demonstration. The DSRIP Demonstration supported the improved infrastructure, care coordination and expansion of mental health and substance misuse services needed for this new group of insured individuals. With the PAP ending in 2018 and the Expansion population's transition to Medicaid managed care, the DSRIP integrated care delivery network likely saw a direct impact from this program.

7.2.2.2 1115 SUD Demonstration

In July 2018, CMS approved New Hampshire's Substance Use Disorder Treatment and Recovery Access Section 1115(a) Research and Demonstration Waiver. Demonstration goals include maintaining critical access to opioid use disorder (OUD) and other substance use disorder (SUD) services, delivery system improvements for these services and more

coordinated and comprehensive OUD/SUD treatment for Medicaid Beneficiaries. With this waiver funding, NH seeks to:[92]

- Increase rates of identification, initiation, and engagement in treatment;

- Increase adherence to and retention in treatment;

- Reduce overdose deaths, particularly those due to opioids;

- Reduce utilization of emergency departments and inpatient hospital settings for treatment where utilization is preventable or medically inappropriate through improved access to other continuum of care services;

- Reduce preventable and/or medically inappropriate readmissions to the same or higher level of care; and,

- Improve access to care for physical health conditions among Medicaid Beneficiaries.

The SUD Demonstration provides additional support for key goals of the DSRIP Demonstration, namely around reducing high-cost utilization through increased integration of care for persons with behavioral health diagnoses. The Demonstration impacts observed on increased access to AOD service use as evidenced in better follow-up to AOD treatment services following an AOD related emergency department visit, increased use of AOD services, and the improved initiation and engagement of AOD treatment services begins to provide evidence that all these initiatives better support the behavioral health population though greater access to and integration of care and treatment.

7.2.2.3 NH 10-Year Plan

New Hampshire released its 10-Year Mental Health Plan in January of 2019, which recommended the State "leverage, extend, and sustain the infrastructure, networks, and successes of NH's DSRIP."[5] The Plan outlines pathways for enhanced regional delivery of mental health services that includes a regional hub and spoke model to respond to behavioral health crisis, to include adult and children's mental health and SUD crisis; and, that intersects with the already developed hub and spoke model, the Doorway program, for access into the State's larger SUD system. Notably, this major component of the Plan was launched July 1, 2021, and based on evaluation team meetings with NH DHHS program officials, is part of the State's vision to build upon the lessons learned and benefits of collaborative approaches to system-wide transformation experienced with the IDN and Regional Public Health Network structures and extends beyond to the broader NH population.

The Plan also incorporates continued use of the Event Notification system launched in the DSRIP Demonstration, as well as the Closed Loop Referral system. Because New Hampshire DSRIP was a key part of the infrastructure of the Plan, and given the 2020 DSRIP end date, sustained implementation of these technology-based tools to support care coordination is shifting as needed and applicable with other funding as the State aims to maintain

continued access for IDN partner organizations. See Section 6.4 of this report for more on the HIT components of the DSRIP Demonstration.

7.2.2.4 MOM Model

In December 2019, CMS awarded New Hampshire funding under the Maternal Opioid Misuse (MOM) Model. While not implemented yet, this model is designed to improve quality of care for pregnant and postpartum women with OUD, as well as increase access to treatment while employing strategies to support care integration, with the intent of reducing the costs of providing care for mothers and infants. Given the 2019 start date, no impact is observed at this time.

7.2.2.5 State Home and Community Base Services (HCBS) Waivers

NH has several HCBS waivers to provide at home long-term services and supports to NH Medicaid Beneficiaries with chronic health conditions. Participants in these waivers are likely to benefit from the enhanced provider capacity to deliver the comprehensive and integrated care that can most effectively address the needs of New Hampshire residents with severe behavioral health or comorbid physical and behavioral health problems. The following is the list of waivers that may benefit from the DSRIP integrated care model:[93]

- **NH Developmental Disabilities (DD) Waiver (0053.R06.00) –** NH DD waiver provides home and community services to NH Medicaid Beneficiaries of all ages with developmental disabilities. A wide array of services are provided including participation services, residential habilitation/personal care services, respite, service coordination, supported employment, assistive technology support services, community support services (CSS), crisis response services, environmental and vehicle modification services, participant directed and managed services (PDMS) formerly consolidated developmental services, specialty services, and wellness coaching for individuals with autism.

- **NH Acquired Brain Disorder (ABD) Waiver (4177.R05.00) –** The ABD waiver provided HCBS services to individual 22 years of age and older with a brain injury. Services include community participation services, respite, service coordination, supported employment services, assistive technology support services, community support services (CSS), crisis response services, environmental and vehicle modification services, participant directed and managed services—PDMS (formerly consolidated acquired brain disorder services), residential habilitation/personal care services, specialty services, and wellness coaching.

- **NH In Home Supports for Children with Developmental Disabilities (0397.R03.00) –** The children with DD waiver provides enhanced personal care, consultations, environmental and vehicle mods, family support/service coordination, and respite care for children (age 0-21) with autism, intellectual disabilities or developmental disabilities.

⬥ **NH Choices for Independence Waiver (0060.R07.00)** – Adults ages 65 and over or with physically disabilities and other disabilities age 18-64 receive HCBS services through the Choices waiver. Choices covered services includes adult medical day services, home health aide, homemaker, personal care, respite, supported employment, financial management services, adult family care, adult in-home services, community transition services, environmental accessibility services, home-delivered meals, non-medical transportation, participant directed and managed services, personal emergency response system, residential care facility services, skilled nursing, specialized medical equipment services, and supportive housing services.

7.2.2.6 Medicaid Managed Care

At the direction of the NH legislature (SB147, June 2011), NH DHHS developed a comprehensive statewide Medicaid managed care program. The Medicaid Care Management (MCM) program was expected to improve quality, budget predictability and ultimately reduce costs for the Medicaid population. The program's primary goal was to "deliver the right care, at the right time, in the right place to Medicaid enrollees." The guiding principles for the MCM program included an emphasis on a "whole person" approach to care coordination with efforts to integrate not only primary care and behavioral health, but consideration of psychosocial and other needs, a patient-centered medical home, chronic care and high risk management, and a focus on wellness and prevention.[94]

The DSRIP Demonstration builds on the MCM structure adding enhanced care coordination for the behavioral health populations, with IDNs focused on community-driven projects built around three enabling pathways: mental health and substance use disorder treatment capacity building, integration of physical and behavioral care, and improving transitions of care across settings. In 2019, NH DHHS re-procured the MCM program and in doing so added support for these goals by incorporating elements of the 10-Year Mental Health Plan, advanced SUD treatment, and requiring MCOs to further support the goals around care coordination (e.g., adding housing supports), including but not limited to entering into contracts with Community Mental Health Programs and Providers with capitated payment arrangements.

Managed care plans were expected to participate in DSRIP to support alternate payment models (APM) infrastructure (e.g., IDN member and provider attribution), quality reporting for clinical management and incentive payment to support population health improvement and value-based reimbursement. There was not a direct material gain for the MCOs. Feedback showed mixed results as to how, when and to what end the MCOs engaged IDNs and their partners during the Demonstration.

7.3 COVID-19 Pandemic, 2020

This section describes broad policy changes brought on by the COVID-19 pandemic that may have interfaced with the DSRIP Demonstration in its final year (this is in addition to DSRIP-specific programmatic changes allowed by CMS; i.e., holding incentive payments in 2020 to 2019 levels for IDNs, as discussed earlier in this report).[19]

On March 13, 2020, Governor Christopher T. Sununu issued Executive Order 2020-04, declaring a State of Emergency due to the Novel Coronavirus (COVID-19). The order was quickly followed with a series of additional orders, including implementation of a stay-at-home, shelter in place of residence requirement, effective March 27, 2020, at 11:59 PM. During the early months of this public health emergency (PHE), personal protective equipment (PPE) supplies within the mental health and substance use disorder provider systems were insufficient to equip all providers and clients to ensure the ability to provide and receive in-person care. Similarly, telehealth service capacity was lacking and largely not authorized under state or federal funding guidelines in the earliest months of the pandemic.

During that initial period of the PHE, programmatic policy changes occurred involving beneficiaries with behavioral health needs. For example, individuals with high service intensity needs were prioritized for in-person service access, such as those individuals in Assertive Community Treatment (ACT), individuals experiencing homelessness who also had a serious mental illness, individuals requiring medical detoxification services, etc. Additionally, mental health and substance use disorder residential based programs were encouraged to reduce occupancy to accommodate for social distancing protocols to mitigate virus exposure. NH and federal partners worked rapidly to expand telehealth options and to obtain sufficient supplies of PPE, effectively regaining significant service capacity over time.

Federal PHE mandates, state law and a CMS-approved 1115 waiver all directly affected New Hampshire's Medicaid program eligibility and reimbursement policies as the state weathered the pandemic throughout the last three quarters of 2020 and beyond; these impacted, at a minimum, enrollment and expenditures during the last year of the DSRIP Demonstration, as outlined below.

2020 Federal Public Health Emergency & Medicaid Enrollment

Section 6008(b)(3) of the Families First Coronavirus Response Act (FFCRA) requires states to provide continuous Medicaid eligibility during the federal PHE declared by the U.S. Department of Health and Human Services through the end of the month in which the PHE ends. The PHE became effective on January 27, 2020, and HHS renewed the PHE declaration in 90-day increments throughout NH DSRIP's final year, 2020 (and beyond). Additionally, with this PHE in effect, NH Medicaid Beneficiaries did not have to prove eligibility to keep their coverage. Notably, 2020 saw a 36% increase in the Expansion group enrollment (51,227 in January 2020 to 69,443 in December).[95]

Expansion of Provision and Allowances for Telehealth Reimbursement

Governor Sununu's Emergency Order #8 (March 18, 2020) allowed providers in NH to perform health care services through telehealth. On July 21, 2020 Governor Sununu signed into law HB1623, permanently amending and expanding the state's definition of telemedicine to include new modalities (i.e., audio-only phones), and requiring Medicaid and private payers to reimburse for telehealth services on the same basis that they reimbursed for in-person care.[96] The new law expanded the list of care providers able to use telehealth (to include physicians, PAs, APRNs, psychologists, dentists and mental health practitioners among others), and enhanced access to MAT in specific settings via telemedicine. The implications of the new telehealth provision and reimbursement were felt immediately within

the Medicaid program and are further discussed under Research Question 4, Section 6.4 of this report.

From the evaluators' informal discussions with NH DHHS program officials, during the PHE in NH, the number of individuals experiencing mental illness and substance use disorders increased, and NH lost some of its provider workforce due to illness, family care needs, relocation and burnout. Thus, some of the primary effects of the COVID-19 pandemic – reduced service capacity and increased service demand – within NH's mental health and substance use disorder service systems, extended far beyond the DSRIP Demonstration's end.

7.4 Implications for State and Federal Health Policy

Evaluation results are inconclusive as to whether or not DSRIP can achieve better health outcomes than traditional Medicaid models of care for persons with behavioral health needs. Findings indicate that widespread collaboration and partnership building were perceived to be valuable tools to facilitate care integration. There is also evidence of progress in increased quality, access to care, and population health in assessment of claims-based measures and qualitative data analysis. Any state or federal policy must take into consideration the current infrastructure of the state's model of care and closely consider disruption and/or enhancement of the infrastructure based on DSRIP initiatives.

The time and effort involved in aligning priorities of all state and federal initiatives, and understanding their collective impacts, should not be underestimated. These types of initiatives are challenging and complex, requiring substantial efforts from policymakers and community stakeholders to level-set expectations around performance and funding. New Hampshire's DSRIP program would have benefitted from a Year 0/ planning year that other states built into similar DSRIP plans and were afforded. Furthermore, systemwide change requires continuous feedback and the ability to adjust throughout the process as necessary. While a lot was accomplished over the five- year span, more time was needed to be able to sufficiently implement structures of sustainable change, and accurately evaluate change. Federal guidance communicated mid-Demonstration that DSRIP waivers were not to be renewed may have had an implication on the success of New Hampshire's program ability to fully set roots and integrate sustainability.

8.   Lessons Learned and Recommendations

By design, DSRIP Demonstrations are large, complex mechanisms that seek to transform health care systems at multiple levels. This multifaceted approach to changing an already-complex system presents several challenges. While necessary to recognize these challenges, it is equally important to share best practices and lessons learned during the Demonstration that can inform other states, as well as with NH DHHS as it seeks to sustain and build from improvements made in all domains. Identifying challenges, even those for which solutions are not fully identified, provides insight for CMS and other states considering implementing DSRIP or similar programs, and allows NH DHHS to re-examine and perhaps address missed opportunities

8.1 Successes, Opportunities, and Recommendations

The strengths and opportunities identified by the evaluator are organized by domain: infrastructure development (includes HIT and workforce development as well as APMs), access to care, quality of care, integration of care, service utilization, cost of care and population health. This section also includes recommendations (also organized by domain) that offer insight to New Hampshire as it looks to future initiatives to build upon DSRIP to improve its health care delivery system, and can also inform the federal government and other states pursuing similar initiatives.

8.1.1 Infrastructure Development

One of the primary aims of the DSRIP Demonstration was to enhance statewide infrastructure to address the complex needs of individuals with behavioral health disorders and co-occurring conditions through the:

- Establishment of robust **health informatics technology** solutions to support care planning and management and information sharing among providers and community-based social support service agencies;
- Expansion of statewide community-based **behavioral health service workforce capacity** to support the provision and coordination of the full continuum of substance use and mental health services; and
- Implementation of **Alternative Payment Models (APMs)** designed to shift Medicaid payment from primarily volume-based to primarily value-based payment with incentivize the provision of high-need services, such as medication- assisted treatment for SUD, substance misuse, peer support, and recovery services.

The below section describes some of the successes, challenges and recommendations on infrastructure development based on lessons learned from the NH DSRIP Demonstration

8.1.1.1 Health Information Technology

8.1.1.1.1 Strengths

✦ **Collaboration:** Findings indicate that the collaborative relationships established as part of the Statewide HIT initiative not only had a positive effect on the planning and implementation HIT applications, but also helped facilitate lasting relationships between HIT staff and clinical providers. The HIT initiative served to breakdown silos between different organizations and departments and was seen as a catalyst for supporting multi-disciplinary team-based approaches to implementing the quality improvement strategies implemented as part of the Demonstration.

✦ **Implementation of Software Applications:** HIT software expansion has been critical in supporting the closed-loop referral system, a key part of the Demonstration's care coordination efforts. In addition, the software applications implemented under DSRIP have helped facilitate more efficient data collection, monitoring and reporting capabilities across the state.

8.1.1.1.2 Opportunities

✦ **Implementation of Software Applications:** Findings indicate not all organizations and providers implemented the software packages further hindering efforts to support enhanced communication and coordination, most notably closed-loop referrals. Also, issues with interoperability remained largely unresolved, which limited the utility of some of the software applications for data sharing and communication.

✦ **Data Tracking and Reporting:** Findings indicate that IDNs faced significant challenges in meeting the reporting requirements of the Demonstration. Reported barriers and challenges included: not having the time to support collecting, compiling, and recording data on performance metrics; gathering and compiling data from multiple sources using a mix of data collection methods; and, staffing (e.g. allocating staff time for monitoring data; staff training).

✦ **Data Sharing:** Findings indicate HIT software applications presented considerable barriers around data sharing. Although DHHS convened a multidisciplinary group of stakeholders for training on the information sharing requirements of protected information and worked with IDNs to develop forms within each region to help operationalize data sharing arrangements, barriers to information sharing kept several partners from fully participating in the Demonstration.

8.1.1.1.3 Recommendations

✦ **Explore Opportunities to Improve Interoperability and Data Sharing:** Information about Beneficiary health and service utilization is needed to support coordinated, high-quality, cost-effective, patient-centered care. Given that much of this information resides in electronic platforms across the multiple settings where patients receive

services, ensuring interoperability across settings is critical to ensuring appropriate care transitions and for coordinating care. NH should continue to work with health systems and providers to improve HIT interoperability within and across organizations within the state with a specific focus on how to improve data sharing with social service organizations who provide critical services to address the social determinants of health needs of Beneficiaries with complex behavioral health and/or co-occurring conditions.

8.1.1.2 Workforce Development

8.1.1.2.1 Strengths

- **Increased Staff Capacity:** Findings indicate that behavioral health staff positions implemented under the Demonstration added capacity to organizations ability to address the needs of Beneficiaries with behavioral health conditions. Some positions supported by the waiver have been sustained post-Demonstration, such as integrated behavioral health clinicians, through new billing strategies or organizational support.

- **Training:** Extensive training and education efforts designed to enhance state and regional behavioral health workforce capacity were implemented under the Demonstration. Results indicate that the knowledge and skills gain from the extensive training and education efforts implemented by IDNs have increased statewide capacity to deliver evidence-based behavioral health care and is largely considered to be a key sustainable component of the Demonstration.

- **Recruitment and Retention:** While behavioral health workforce shortages remain an issue in NH and nationally, targeted strategies designed to recruit and retain behavioral health providers implemented under the Demonstration, such as changes in licensing rules, have made it easier to practice in New Hampshire.

8.1.1.2.2 Opportunities

- **Behavioral Health Infrastructure:** The streamlined function of the integrated model did not always overcome limitations of the workforce infrastructure (i.e. provider turnover and shortages). For example, MDCTs were positively received; however, a perceived barrier was the mandated inclusion of psychiatrists on the teams, which is a provider type in considerable shortage in New Hampshire. Overall, workforce issues continue to contribute to limited available providers, fewer treatment options and locations, as well as long-wait times.

8.1.1.2.3 Recommendations

- **Explore Opportunities to Sustain Training Infrastructure:** The State of New Hampshire should leverage existing national, regional and state resources such as trainings contractually required by the Medicaid Managed Care Organizations to continue to

offer professional development opportunities to enhance and expand the capacity of the state's behavioral health workforce.

➕ **Address Structural Barriers To Recruitment and Retention of Providers** – While behavioral health workforce capacity has increased due to Demonstration resources and activities, there remains significant capacity issues. The State of New Hampshire should provide the findings from the DSRIP Evaluation to the Commission on Mental Health Workforce Development enacted by NH Governor's Executive Order 2019-03 to help inform ongoing efforts to address critical behavioral health workforce shortages in the state.

8.1.1.3 Alternative Payment Models

8.1.1.3.1 Strengths

➕ **Supporting Care Integration:** While the transition to APMs did not fully materialize due to delays in the implementation timeline, inconsistent guidance throughout the Demonstration and COVID-19 disruptions, administrators and providers understood the value of APMs as a feasible way to support integrated models of care. Furthermore, after two separate attempts to leverage the Demonstration activities with its APM goal, New Hampshire DHHS determined that the transition to APMs in its Medicaid program was more appropriate through the Medicaid Managed Care Organizations. Transitioning to APMs through the NH Medicaid Managed Care Organizations began in 2019 with a strategy aligned with the National Health Care Payment Learning and Action Network (LAN) APM framework.

8.1.1.3.2 Opportunities

➕ **Transitioning to APMs:** A notable obstacle preventing IDNs from being more involved in an APM transition was that IDNs were not in a position to be risk-bearing entities in New Hampshire, prior to the State's new contract with the Medicaid Managed Care Organizations established in September of 2019. (New Hampshire's initial goal to utilize the activities of the Demonstration to support the IDNs' implementation of alternative payment models proved to be infeasible because of uncertainty about the financing available under the Demonstration to support the IDNs' operations as risk bearing entities.) Through these new 2019 agreements, MCOs had contractual APM requirements to work with IDNs and through Local Care Management activities which are incorporated, but efforts specifically tied to the Demonstration were greatly hindered in 2020 with the onset of the COVID pandemic. This left the IDNs mostly blind to changes made and the work done by the State and MCOs from the last quarter of 2019 onward as they attempted to shift to APMs for Medicaid reimbursement.

8.1.1.3.3 Recommendations

➕ **Future Value Based Planning** –As evidenced by the efforts to transition to APMs under the Demonstration, it takes time and resources for health systems,

organizations as well as providers to develop the understanding, infrastructure, and capacity necessary to allow them to assume collective financial risk and shift to value based payment structures. The DSRIP Demonstration played a critical role in educating organizations and providers in NH on the essential components of value based payment models, laying the foundation for future efforts. The State of New Hampshire should capitalize on the value based payment efforts undertaken as part of the Demonstration to inform future value based planning for the Medicaid program, including the development of future Medicaid service delivery models.

8.1.2 Access to Care

One of the primary aims of the DSRIP Demonstration was to improve access to care for Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders through the use of Integrated Delivery Networks (IDNs) designed to enhance care integration as well as coordination.

8.1.2.1 Strengths

- **Improved Access:** Evaluation of performance metrics indicates that the behavioral health population had greater access to care as a result of strategies implemented as part of the Demonstration. These findings are inclusive of physical health performance metrics that are traditionally areas of low performance for the behavioral health population.

- **Telehealth:** Many beneficiaries reported improved access to care as a result of expanded access to telehealth services as a result of changes to care delivery in response to COVID-19, as their health care provider organizations implemented or re-emphasized telehealth visits, online portals, and text message correspondence. Access to telehealth services mitigated challenges to access such as childcare, transportation, and time commitments for long-travel distances to access services for those living in rural areas.

- **Reducing Stigma:** Findings from both providers and Beneficiaries indicate the integration of behavioral healthcare providers into medical settings, as well as the "reverse integration" of embedding physicians into behavioral health settings, increased access to services by minimizing or avoiding the stigma some Beneficiaries felt around seeking behavioral health treatment.

8.1.2.2 Opportunities

- **Preventative Care:** Rates of preventative screenings for cancer as well as rates of annual wellness visits for both children and adults decreased over the course of the Demonstration.

- **Telehealth Barriers:** Service delivery changes around telehealth related to the COVID-19 Pandemic posed challenges for beneficiaries such as not having access or the ability to utilize a phone, computer, or the required cellular/wi-fi connection.

8.1.2.3 Recommendations

🔶 **Monitor Performance:** State of New Hampshire should continue to monitor the performance of the behavioral health population on quality measures with a specific focus on examining the performance by subpopulations (age, gender, dual status, expansion population) to inform targeted quality improvement efforts. Findings should also be analyzed for performance improvement opportunities for the non-behavioral health population.

🔶 **Root Cause Analysis:** The State of New Hampshire should conduct a root cause analysis to better understand drivers of decreased performance in preventative visits and screenings including: Adolescent Well Care Visits, Adult Ambulatory/Preventive are Visits and Cancer Screenings.

🔶 **Address Telehealth Barriers:** The State of New Hampshire should continue monitor the scope of Beneficiary comfort using telehealth services as well as barriers to accessing telehealth. Telehealth offers an opportunity to expand behavioral health treatment capacity, particularly in rural areas of the state, so exploring potential solutions to overcome these barriers and expand access to telehealth services provides NH the opportunity to simultaneously build capacity to address behavioral health conditions while enhancing access to service for Beneficiaries with behavioral health disorders.

8.1.3 Quality of Care

The DSRIP Demonstration was not only designed to enhance access to care but also improve the quality of care individuals with behavioral health disorders or co-occurring physical and behavioral health disorders receive with the goal of advancing implementation strategies under the Demonstration that enhanced the provision of evidence-based patient centric approaches to care.

8.1.3.1 Strengths

🔶 **Improved Quality of Care:** Evaluation of performance metrics as well as feedback from Beneficiaries indicates that the behavioral health population experience improvements in the quality of care they receive as a result of strategies implemented as part of the Demonstration. These findings are inclusive of physical health performance metrics that are traditionally areas of low performance for the behavioral health population.

🔶 **Beneficiary Perceptions of Quality of Care:** The overall health composite rating from the Beneficiary Experience Survey indicates the majority of Beneficiaries rate their health care positively. Over the three years of the survey administration, the state average of the mean composite score was 8.11 out of 10.

🔶 **Implementing Patient-Centered Models of Care:** While there have been noted challenges to implementing the CCSA, findings from early adopters in the state

indicated that the assessment is critical to supporting integrated models of care that are patient-centered and holistic.

8.1.3.2 Opportunities

➕ **Performance Metrics:** The evaluation identified key metrics that remained stagnant or experienced a downward trend over the course of the Demonstration. These included: Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications; Diabetes Monitoring for People with Diabetes and Schizophrenia; Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia; Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics and Metabolic Monitoring for Children; and Adolescents on Antipsychotics.

➕ **Provider Respect:** Beneficiaries' satisfaction with the quality of the healthcare service(s) they receive seems to hinge on their perspective of being treated with respect by providers (e.g. provider empathy, listening skills, and time spent).

8.1.3.3 Recommendations

➕ **Root Cause Analysis:** The State of New Hampshire should conduct a root cause analysis to better understand drivers of decreased screening and ongoing monitoring for adolescents as well as adults at risk for or with co-occurring physical health conditions.

➕ **Explore Drivers of Quality Care:** The State of New Hampshire should further explore composite ratings to better understand the drivers of Beneficiaries positive rating of health care.

➕ **Promote the use of Comprehensive Core Standard Assessment:** The State of New Hampshire should identify opportunities to continue to expand the utilization of the CCSA and its screening for social determinants of health, perhaps through contracted Managed Care Organizations or Community Mental Health Centers.

8.1.4 Integration of Care

Foundational to the efforts of the DSRIP Demonstration was to improve care integration and coordination between organizations and providers. The intent of the Demonstrations integrated delivery networks (IDNSs) was to provide a continuum of physical and behavioral health services as well as provide comprehensive care coordination to serve the whole person.

8.1.4.1 Strengths

✦ **Improved Communication and Coordination:** Providers frequently cited the benefits of using event notification as a means to get real time data on patients often leading to early intervention (e.g. same day appointments), diversion to more appropriate settings or levels of care, and creating of additional appointment availability.

✦ **Multidisciplinary Teams:** The implementation of multidisciplinary care teams had the perceived benefits, as reported by IDN Administrators, providers, and HIT stakeholders, of greater care integration for Beneficiaries. Furthermore, many key stakeholders felt that use of multidisciplinary care teams is an effective way to coordinate care for individuals with complex care needs and is a model that should be sustained moving forward.

✦ **Increased Awareness of Services:** The DSRIP Demonstration has helped to increase provider awareness of the resources available in their region and increased their ability to engage patients with available resources more efficiently. Notably, the CCSA helped to facilitate conversations with providers from multiple organizations leading to a higher level of care integration across the various settings and providers.

✦ **Improvements in Emergency Department Follow-up Rates:** The evaluation identified increases in follow-up appointments after seeking treatment for substance use or mental illness in the emergency department.

8.1.4.2 Opportunities

✦ **Performance Metrics:** The evaluation identified key metrics that remained stagnant or experienced a downward trend over the course of the Demonstration. These included: Fragmented Care and Mental Health Hospitalization Follow-up Visits.

✦ **Provider Fatigue:** Provider burnout and fatigue is a major issue that has only been compounded by the COVID-19 pandemic. In recent years, the rising prevalence of burnout among clinicians has led to questions on its effect on access to care, patient safety, and care quality. For example, burnout leads to high provider turnover which reduces patients' access to and continuity of care. While the CCSA implementation strategy was a noted success of the Demonstration, early feedback from some providers indicated that they failed to see the utility of implementing the CCSA given their already limited time and resources to conduct more screenings.

✦ **Increases in Rates of Fragmented Care:** Rates of fragmented care increased over the course of the evaluation. However the rate of increase was significantly lower for Beneficiaries with behavioral health disorders than those without.

✦ **Decreases in Mental Health Hospitalization Follow-up Rates:** The evaluation identified decreases in follow-up appointments after hospitalization for mental health.

8.1.4.3 Recommendations

✦ **Root Cause Analysis:** The State of New Hampshire should conduct a root cause analysis to better understand drivers of the increase in Fragmented Care as well as the decrease in Mental Health Follow-Up rates among Beneficiaries over the course of the demonstration.

✦ **Beneficiary Perception of Integration:** While there were significant improvements over the Demonstration in CAPHS ratings of receipt of necessary care, timely receipt of care, care coordination, and behavioral health care, all score decreased slightly in the final wave of the survey. While this is most likely due to overall shifting perceptions of Beneficiaries due to COVID-19, the State of New Hampshire should continue to field these CAHPS modules to assess if trends rebound in an upward direction.

✦ **Event Notification and Closed Loop Referral Software Utilization:** Given that they were widely viewed as the most successful DSRIP HIT enhancements for supporting care integration and coordination, the State of New Hampshire should explore procurement for a statewide contract for Event Notifications and Closed Loop Referrals.

✦ **Sustain Multidisciplinary Teams:** The State of New Hampshire should explore the feasibility and return on investment for sustaining the multidisciplinary team model which were viewed by key stakeholders as an efficient way to address the complex needs of Beneficiaries with behavioral health disorders and/or co-occurring physical health conditions.

✦ **Leverage Existing Initiatives to Impact Follow Up Rates:** The State of New Hampshire should leverage existing initiatives inclusive of 1115 Institute for Mental Disease (IMD) Waiver, Managed Care Directed Payments, and Critical Time Intervention to reduce readmissions to inpatient psychiatric hospitalizations.

8.1.5 Service Utilization

Through enhanced Beneficiary engagement, care integration and coordination, the DSRIP Demonstration sought to lower the use of avoidable hospital services, reduce hospital readmissions as well as decrease the length of stay for individuals requiring inpatient psychiatric care at the New Hampshire State Hospital.

8.1.5.1 Strengths

✦ **Reductions in ED Utilization:** Over the course of the Demonstration, there was a significant reduction in the rate of non-behavioral health related frequent emergency department visits as well as avoidable emergency department visits. In both instances, the downward trend was greatest among individuals at greatest risk, those with a behavioral health condition.

⬥ **Reductions in Hospital Admissions for Ambulatory Care Sensitive (ACS) Conditions:** Over the course of the Demonstration, there was a significant reduction in the rate of overall and acute hospital admissions for ambulatory care sensitive conditions among Beneficiaries with behavioral health disorders; chronic ACS admission rates remained unchanged.

8.1.5.2 Opportunities

⬥ **Increase Hospital Readmissions:** Hospital Readmission for any cause increased over the course of the demonstration for those without behavioral health conditions. While rates remained steady among the behavioral health population, they were more likely to have hospital readmissions for any cause when compared to the non-behavioral health population.

⬥ **Increase in Length of Stay for Inpatient Psychiatric Care: The** length of stay for inpatient psychiatric care significantly increased over the course of the Demonstration; the average length of stay ranged from 15.6 days in the pre-Demonstration period to 17.1 and 23.9 in the post- and post-Pandemic Demonstration periods.

8.1.5.3 Recommendations

⬥ **Monitor Performance:** State of New Hampshire should continue to monitor the performance of the Medicaid population on quality measures related to service usage including emergency department utilization, hospital admissions and readmissions, as well as inpatient psychiatric stays. Analysis should also focus on examining the performance by subpopulations (age, gender, dual status, expansion population) to inform targeted quality improvement efforts.

⬥ **Root Cause Analysis:** The State of New Hampshire should conduct a root cause analysis to better understand drivers of increased behavioral health related hospital readmissions as well as increased length of stay for inpatient psychiatric care. In addition, analysis should focus on understanding why Beneficiaries with behavioral health conditions have significantly higher all cause readmission rates than those without.

⬥ **Leverage Existing Initiatives to Impact Follow Up Rates:** The State of New Hampshire should leverage existing initiatives inclusive of 1115 Institute for Mental Disease (IMD) Waiver, Managed Care Directed Payments, and Critical Time Intervention to reduce readmissions to inpatient psychiatric hospitalizations.

8.1.6 Cost of Care

The DSRIP Demonstration sought to lower the total cost of care for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders. The cost analysis conducted as part of the evaluation provided detailed information on the impact of the Demonstration on efforts to reduce total expenditures as well as those

for specific categories of services among Beneficiaries with behavioral health behavioral health disorders or co-occurring physical and behavioral health disorders.

8.1.6.1 Strengths

✦ **Reduced Total Costs:** There was a significant decrease in total per member per month costs (PMPM) among all Medicaid Beneficiaries over the course of the Demonstration.

8.1.6.2 Opportunities

✦ **PMPM Costs for Beneficiaries with Behavioral Health Disorders:** While there were reductions in PMPM costs among members with behavioral health disorders, PMPM costs for all services were considerably more for Beneficiaries with behavioral health disorders when compared to Beneficiaries without behavioral health disorders throughout the Demonstration period.

8.1.6.3 Recommendations

✦ **Cost Analysis:** The State of New Hampshire should continue to monitor costs for both the behavioral health and non-behavioral health population. In addition to total PMPM costs, the State should examine costs for specific services, as done over the course of the Demonstration, as well as by subpopulations (age, gender, dual status, expansion population) in order to examine nuanced changes over time in an effort to identify service and Beneficiary level cost drivers to inform quality improvement efforts.

8.1.7 Population Health

It was anticipated that the strategies implemented under the DSRIP Demonstration including infrastructure development, expanded outreach efforts, and enhanced care integration, would improve the overall health population health in New Hampshire.

8.1.7.1 Strengths

✦ **Responsiveness to Population Health Needs:** Results indicate that key stakeholders believed that the Demonstration made their organizations more responsive to population health needs through improved capacity related to integration of care, care transitions, and comprehensive screening.

✦ **Decrease in Negative Self-Reported Physical Health Status:** There was a decrease in all BRFFS survey respondents who self-reported having fair or poor overall general health between 2014 and 2018.

✦ **Decrease in Rate of Depressive Disorder:** There was a decrease in all BRFFS survey respondents who self-reported having ever been told they have a depressive disorder between 2014 and 2018.

Improvements in Medicaid Beneficiary Health: Medicaid Beneficiaries who responded to the BRFFS survey saw significant improvements in all physical and mental health domains between 2014 and 2018 including decreases in self-reported fair or poor general health, "not good" physical health days, "not good" mental health, poor health days and ever having had a depressive disorder.

Improvements in Health Among Individuals with Behavioral Health Disorders: Among individuals who responded to the BRFFS survey who also had a behavioral health disorder, there were improvements in both physical and mental health domains between 2014 and 2018 including decreases in self-reported fair or poor general health, "not good" physical health days, poor health days, and ever having had a depressive disorder.

8.1.7.2 Opportunities

Alcohol Consumption: There was an increase in all BRFFS respondents as well as those with a behavioral health disorder reporting heavy alcohol consumption in the last 30 days.

Decrease in Physical Activity: There were significant increases in all BRFFS respondents as well as those with a behavioral health disorder, although not significant, reporting no physical activity or exercise in the last 30 days.

8.1.7.3 Recommendations

Continue Monitoring Self-Reported Mental Health Status – New Hampshire should continue to monitor BRFSS data for the Medicaid population as a comparison to other Medicaid Behavioral Health key performance indicators.

Explore Population Health Initiatives – New Hampshire should continue to explore opportunities to address population health in the behavioral health population and the Medicaid population as a whole.

8.2   Lessons Learned: Implications for Other DSRIP Demonstrations

New Hampshire's DSRIP program required considerable time and resources from stakeholders at almost every juncture of implementation. IDNs were formed, in many cases, from disparate partners who had not previously collaborated, and required substantial time and energy during their formation, application development, and project planning stages. Given analysis on the qualitative data conducted for the interim evaluation, there are strategies to be considered for similar initiatives in the planning and early stages of implementation:

Pre-planning and assessing implementation readiness prior to submitting an 1115 application is essential to maximizing the full duration of an 1115 Demonstration.

Early understanding of IDN guidelines and expectations will allow organizations to determine the feasibility of applying to be an IDN and can help facilitate pre-planning efforts prior to the implementation of the 1115 Demonstration. In addition, collaborating with stakeholders during the waiver application planning phase to establish criteria for IDNs prior to Demonstration approval will expedite IDN selection and implementation of IDN networks after the onset of the Demonstration.

🔷 **Collaboration is fundamental to promoting systems transformation and the implementation of integrated models of care.** Establishing and maintaining collaborative partnerships are necessary to creating comprehensive systems of care and improving access to care for individuals with complex health care needs. Establishing clinical-community linkages is also critical for establishing and expanding the infrastructure necessary to support integrated models of care that address physical, behavioral and social needs. It takes time and effort to engage key stakeholders, establish priorities, and build trust among partners. Engaging stakeholders as early as possible, allotting time and resources to support collaborative efforts and establishing mechanisms to support and maintain partnerships are important components of Demonstrations designed to promote systems transformation.

🔷 **Investigate and strategize around confidentiality and data sharing issues during the Demonstration design phase, and as early as possible in the implementation**. Issues around confidentiality and data sharing are complicated and can lead to substantial delays in program implementation. Clear guidance on privacy laws and data sharing is essential to implementing data sharing protocols. Moreover, identifying and gaining consensus on mechanisms for data sharing early in the Demonstration process is a critical step to establishing efficient systems and ensuring application interoperability across partners, which is necessary for comprehensive data sharing.

🔷 **Early engagement of key stakeholders in the identification of performance measures can help facilitate more robust reporting.** External clinical input into the Demonstration process is key to ensure data reporting requirements that are specific, measurable, realistic and relevant. Engage provider-level stakeholders (those who deliver care and work with health data) early on to develop and design feasible measures and to ensure high-quality data extraction.

🔷 **Allow for greater flexibility in performance measures.** Most states are heavily reliant on HEDIS and the CMS Core Set of measures, which are more traditionally applied to health plans or state Medicaid plans. The use of many of these measures to measure quality and pay providers for performance doesn't always translate well to the work being done "on the ground." Performance measures should align with Demonstration goals. Exploring measures beyond the standard set typically recommended for quality-of-care metrics may afford better opportunities to align initiatives with health plan quality and systems transformation.

🔷 **Address challenges and communicate strategies around workflows and resources as early as possible in the implementation process, as they are critical to successes and**

further collaboration. It is essential that a state implementing a large Demonstration engage stakeholders as early as possible in the process. Consistent and frequent communication from leadership on programmatic goals and the value of the initiative is critical to creating buy-in and can play a pivotal role in helping to overcome implementation challenges. Furthermore, local entities (ie, IDNs) can achieve buy-in from key partner organizations hesitant to participate by continuing to extend educational and supportive resources throughout the Demonstration.

✚ **Align with existing systems.** Building on existing infrastructure can help to facilitate system transformation efforts. It is critical for newly formed collaborative partners to leverage existing resources, including HIT and workforce capacity, within the partnership.

✚ **Communicate as much as possible with all partners and stakeholders throughout the Demonstration about mechanisms for transitioning to Value Based Payment and/or Alternative Payment Models.** Large system transformation efforts, particularly those involving payment models, can be overwhelming for organizations and providers. In addition, partners often do not understand these models or fully see their own role within the future shift to APMs. Frequent, clear and concise communication as well as robust trainings and resources for organizations and providers are necessary to support successful transitions to APMs.

✚ **Consider securing state resources for data analytics technical support.** System transformations and incentive payment models rely heavily on data from an already stressed and overburdened system. Allowing for, or even requiring, state resources to support data analytics would allow providers and stakeholders to better understand and utilize real-time data to see and make changes as needed during a Demonstration of this scope.

9. Conclusions

This Summative Evaluation Report focuses on the successes and challenges faced by New Hampshire as they implemented and operationalized their Section 1115(a) Medicaid Demonstration Waiver, *New Hampshire Building Capacity for Transformation* (New Hampshire Delivery System Reform Incentive Payment (DSRIP) Program). The NH DSRIP program made improvements in integrating physical and behavioral health, building mental health and substance use disorder treatment capacity, and improving care transitions for Medicaid Beneficiaries experiencing mental health and/or substance use disorders or substance misuse.

New Hampshire's DSRIP program succeeded in demonstrating progress towards waiver goals; some were more successful than others (integration of care, workforce development). While all waiver goals were not fully achieved in the 5-year time frame (APMs), the cultural shifts around partnership collaborations, screening for social determinants of health, HIT infrastructure improvements, and workforce capacity built in the first four years of the Demonstration held steady during the extreme disruptions that reverberated over the Demonstration's final year due to the COVID-19 pandemic.

There are continued opportunities for investment in and improvement to the health care delivery system. The Demonstration succeeded in creating networks that remain in place, although no longer officially supported via IDN structure, with engaged stakeholders who have expressed willingness to continue to build on the successes of the Demonstration. The sustainability and growth of these networks as well as any future initiatives undertaken by them will continue to require significant time and investment. The magnitude of the Demonstration's mission to redesign the system of care for some of New Hampshire's most at-risk populations speaks to the enormity of any task at hand moving forward with an initiative of such size and scope. None the less, promising practices and lessons learned from the DSRIP program create a pathway where the state can make concentrated and continued efforts to affect change especially in areas where more time is needed to see improvements.

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APPENDIX

A. Measure Specifications

The evaluation team analyzed the performance measure specifications and definitions included in this appendix as part of the interim evaluation of the DSRIP Demonstration; they will also be included in the summative evaluation. Each of these measures address the research questions and hypotheses designed to examine the seven key domains:

- Infrastructure Development
- Access to Care
- Quality of Care
- Integration of Care
- Service Utilization
- Cost of Care
- Population Health

Each measure is categorized by Demonstration waiver goal, key domain and hypothesis. HEDIS®[26] specifications are used for each of the measurement years unless otherwise noted in the measures specifications.

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[26] HEDIS® is the Healthcare Effectiveness Data and Information Set and the registered trademark by the National Committee for Quality Assurance (NCQA). The HEDIS® measures used in this report are uncertified, unaudited HEDIS measures. The logic used to produce these HEDIS® measure results has not been certified by NCQA. Such results are for reference only and are not an indication of measure validity. HEDIS® specifications used to calculate measures are appropriate to each data year in the evaluation.

Research Question 1: Was the DSRIP Demonstration effective in achieving the goals of better care for individuals (including access to care, quality of care, health outcomes), better health for the population, or lower cost through improvement? Was there any variation between IDNs/geographic regions/market areas? To what degree can improvements be attributed to the activities undertaken under DSRIP?

Hypothesis 1.1: Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.

Measure 1.1.1: Experiences of Health Care with DSRIP	
Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.1	Individuals with behavioral health will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	Semi-structured interviews explored beneficiaries' perceptions about the impact of DSRIP on health care quality and outcomes. In both 2019 and 2021, approximately 35 interviews, 70 total were conducted annually across the seven IDNs with beneficiaries who have a behavioral health disorder and who have had at least one health care visit in the previous year, respectively. Interviews will be audiotaped and transcribed for thematic analysis.
Eligible Population	Members 18 years and older who have a behavioral health disorder and have had at least one visit in the past year. Stratified by IDN.
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019, 2021
Data Source(s)	Semi Structured Interviews
Measure ID	1.1.1
Statistical Testing	Thematic Analysis

Measure 1.1.2
Antidepressant Medication Management

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Antidepressant Medication Management (AMM) (Measure first year 2014 HEDIS® for 2013 data year) This measure reports two rates: 1.) The percentage of members with major depression who were initiated on an antidepressant drug and who received an adequate acute-phase trail of medications (3 months). 2.) The percentage of members with major depression who were initiated on an antidepressant drug and who completed a period of continuous medication treatment (6 months).
Eligible Population	Members 18+ who are treated with antidepressant medication and had a diagnosis of major depression and who remained on an antidepressant medication treatment for: 1.) Acute Phase Treatment – for at least 84 days (12 weeks). 2.) Effective Continuation Phase Treatment – for at least 180 days (6 months) – see HEDIS®AMM specifications for each measurement year beginning 2014 and including updates in 2015 and 2016 to measurement specifications. NOTE: This measure will not be used on duals due to lack of pharmacy data
Numerator	Members 18 years and older with a diagnosis of major depression as of April 30th of measurement year with continuous enrollment of 105 days prior to the Index Prescription Start Date (IPSD) and 231 days after the IPSD.
Denominator	The eligible population with HEDIS® exclusions applied
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
DSRIP Measure ID	1.1.2
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.3

Follow-Up After Hospitalization for Mental Illness

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.1	Individuals with behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.

Measure Description	HEDIS® Measure -- Follow-Up after hospitalization for mental illness (FUH)
	This measure looks at the continuity of care for mental illness. It measures the percentage of members 6 years of age and older who were hospitalized for treatment of selected mental disorder or intentional self-harm and who had a follow-up visit with a mental health practitioner within 7 or 30 days after their discharge.
	This measure reports two rates:
	    1.) The percentages of discharges for which member received an outpatient visit, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 7 days after discharge.
	    2.) The percentages of discharges for which member received an outpatient visit, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 30 days after discharge.

Eligible Population	Members over 6 years of age who were hospitalized for treatment of selected mental disorders or intentional harm with continuous enrollment for 30 days after discharge.
Numerator	Members 6 years and older with a follow up visit between 1 and 30 days after discharge from a hospital for treatment of selected mental illness.
Denominator	The denominator for this measure is based on discharges not on members with HEDIS® exclusions applied.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims, Medicaid Encounters, Data from non-claim discharges from New Hampshire (IMD) Hospital
Measure ID	1.1.3
Statistical Testing	Mann-Whitney U-Test Generalized linear models

Measure 1.1.4:
Initiation and Engagement of Alcohol and Other Drug Dependence Treatment

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.1	Individuals with behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Initiation and Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET) This measures assess the degree to which members identified with a need for alcohol and other drug (AOD) abuse and dependence services are initiated and continue treatment once the need for these services have been identified. This measure reports two rates for two age groups—adolescent patients age (13 to 17) and adult patients (18 and older) with a new episode of alcohol or other drug dependence: 1.) Initiation of AOD treatment: percent of patients who initiated AOD treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the diagnosis 2.) Engagement of AOD Treatment: percent of patients who initiated treatment and who had two or more additional AOD services 30 days of the initiation visit. (2017 is the first year for this HEDIS® Measure. Specifications for HEDIS® 2017 was applied to 2013, 2014, 2015, 2016 data years.)
Eligible Population	Members 13 and older with a new episode of alcohol or other drug dependence with continuous enrollment from 60 days before the episode start state through 48 days after the episode start date. .
Numerator	The numerator for initiation of AOD treatment: an inpatient AOD admission, outpatient visit, or intensive outpatient encounter of partial hospitalization within 14 days of diagnosis. The numerator for engagement of AOD treatment: members who initiated treatment and had two or more additional AOD services 30 days of the initiation visit – see HEDIS® IET specifications for each measurement year.
Denominator	The eligible population
Comparison Group	Not applicable, services were not covered until after waiver implementation NH started providing AOD services to Medicaid Expansion population on 9/1/2014. AOD services were offered to Standard Medicaid population beginning 7/1/2017.
Data Source(s)	Medical Claims and Encounters
Measure ID	1.1.4
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.5:
Adherence to Antipsychotic Medications for Individuals with Schizophrenia

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs

Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure –Adherence to Antipsychotic Medications for Individuals with Schizophrenia (SAA) Members 19-64 years of age with schizophrenia or schizoaffective disorder who were dispensed and remained on an antipsychotic medication for at least 80% of their treatment period, in the measurement year
Eligible Population	Members 19-64 years of age who have a schizophrenia diagnosis and prescribed antipsychotic medication NOTE: This measure will not be used on duals due to lack of pharmacy data
Numerator	Eligible members who achieved 80% of the proportion of days covered for their antipsychotic medications
Denominator	Members 19-64 years of age who have a schizophrenia diagnosis and prescribed antipsychotic medication
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.5
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.6:
Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality of Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Diabetes Screening for People with Schizophrenia, Schizoaffective Disorder or Bipolar Disorder Who Were Dispensed Antipsychotic Medications and had a Diabetes Screening (SSD)

Members 18-64 years of age with schizophrenia or bipolar disorder, who were dispensed an antipsychotic medication and had a diabetes test. |
| **Eligible Population** | Members 18-64 years of age with schizophrenia or bipolar disorder, who are prescribed antipsychotic medication.
Exclude members with a diabetes diagnosis or had no antipsychotic medication dispensed

NOTE: This measure will not be used on duals due to lack of pharmacy data |
Numerator	Eligible members who had either a glucose test or HbA1c test, in the measurement year.
Denominator	Members 18-64 years of age with schizophrenia or bipolar disorder, who are prescribed antipsychotic medication
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.6
Statistical Testing	Chi-square
Logistic Regression

Measure 1.1.7 : Diabetes Monitoring for People with Diabetes and Schizophrenia	
Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality of Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Diabetes Monitoring for People with Diabetes and Schizophrenia (SMD) Members 18-64 years of age with schizophrenia or schizoaffective disorder and diabetes who had both an LDL-C and HbA1c, in the measurement year.
Eligible Population	Members 18-64 years of age with schizophrenia and diabetes in the measurement year. NOTE: This measure will not be used on duals due to lack of pharmacy data
Numerator	Eligible members who had an HbA1c test and an LDL-C test in the measurement year.
Denominator	Members 18-64 years of age with schizophrenia and diabetes in the measurement year.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.7
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.8: Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia	
Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality of Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia (SMC) Members 18-64 years of age with schizophrenia or schizoaffective disorder and cardiovascular disease, who had an LDL-C test in the measurement year.
Eligible Population	Members 18-64 years of age with schizophrenia or schizoaffective disorder and cardiovascular disease.
Numerator	Eligible members who had an LDL-C test in the measurement year.
Denominator	Members 18-64 years of age with schizophrenia or schizoaffective disorder and cardiovascular disease.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.8
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.9:
Follow-up Care for Children Prescribed ADHD Medication

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality of Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Follow-up Care for Children Prescribed ADHD Medication (ADD) All children (ages 6-12) (with and without BH disorders) who were newly prescribed ADHD medication who had a least three follow-up care visits within a 10 month period, one of which was within 30 days of when the first ADHD drug was dispensed. Initiation Phase: Percentage of members ages 6-12 newly prescribed ADHD medication who had a follow-up visit within 30 days of the prescription being dispensed (initiation phase), in the measurement year. Continuation and Management Phase: Percentage of members ages 6-12 newly prescribed ADHD medications who remained on the medication for 210 days and who in addition to the 30 day visit had at least 2 follow-up visits within 270 days after the initiation phase ended.
Eligible Population	Children between the ages of 6 and 12 who are newly prescribed medication for ADHD
Numerator	Initiation Phase: Eligible members who had a follow-up visit within 30 days of ADHD medication being dispensed Continuation and Management Phase: Eligible members who had at least 2 follow-up visits within 270 days of ADHD medication being dispensed, in addition to the visit in initiation phase
Denominator	Initiation Phase: Children between the ages of 6 and 12 who are newly prescribed medication for ADHD Continuation and Management Phase: Eligible members who had a follow-up visit within 30 days of ADHD medication being dispensed (members have met the numerator critieria on the initiation phase)
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.9
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.10: Metabolic Monitoring for Children and Adolescents on Antipsychotics

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality of Care for Beneficiaries

Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Metabolic Monitoring for Children and Adolescents on Antipsychotics (APM) Children and adolescents 1-17 years of age who had 2 or more antipsychotic prescriptions and had metabolic monitoring. Received both of the following: (a) at least one blood glucose test or HbA1c, (b) at least one LDL-C or cholesterol test (2015 is the first year for this HEDIS® Measure. Specifications for HEDIS® 2015 was applied to 2013, 2014 data years.)
Eligible Population	Children and adolescents 1-17 years of age who have 2 or more antipsychotic prescriptions.
Numerator	Eligible population who received both of the following: (a) at least one blood glucose test or HbA1c, (b) at least one LDL-C or cholesterol test
Denominator	Children and adolescents 1-17 years of age who have 2 or more antipsychotic prescriptions.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.10
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.11: Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics	
Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality of Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics (APP) Children and adolescents 1-17 years of age who had a new prescription for an antipsychotic medication and had documentation of psychosocial care as first-line treatment.
Eligible Population	Children and adolescents 1-17 years of age who had a new prescription for an antipsychotic and had documentation of at least a trial of outpatient behavioral health therapy prior to initiation of medication therapy, in the measurement year. Exclude members for whom first line antipsychotic medication may be clinically appropriate.
Numerator	Eligible members with documentation of psychosocial care in the 121 day period from 90 days prior to the medication start date through 30 days after medication start date.
Denominator	Children and adolescents 1-17 years of age who had a new prescription for an antipsychotic and had documentation of at least a trial of outpatient behavioral health therapy prior to initiation of medication therapy, in the measurement year. Exclude members for whom first line antipsychotic medication may be clinically appropriate.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.11
Statistical Testing	Chi-square Logistic Regression

Measure 1.1.12 USPSTF: Cervical Cancer Screening	
Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Access to Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	Women who received timely cervical cancer screening. Percent of women with a behavioral health disorder ages 21-65 that received cervical cancer screening within the past 3 years. Percent of women with a behavioral health disorder ages 30-65 that received cervical cancer screening within the past 5 years
Eligible Population	Women between the ages of 21-65;
Numerator	1) Female respondents age 21 to 65 who reported having a pap in the past 3 years 2) Female respondents age 30 to 65 who reported having a pap in the past 5 years
Denominator	1) Female respondents age 21 to 65 2) Female respondents age 30 to 65
Comparison Group	Pre intervention (2014) vs Post intervention (2017, 2018)
Data Source(s)	New Hampshire BRFSS
Measure ID	1.1.12
Statistical Testing	Chi square

Measure 1.1.13: Breast Cancer Screening

Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Access to Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Breast Cancer Screening (BCS) Women that received timely breast cancer screening. The percent of women ages 40 and older that received a mammogram within the past 2 years.
Eligible Population	Women ages 52-74 as of measurement year with 2 years of prior eligibility. Two populations identified – one population with BH disorders and one without.
Numerator	Eligible members with one or more mammogram anytime on or between October 1 two years prior to the measurement year and December 31 of the measurement year
Denominator	Women ages 52-74 with and without BH disorders as of the measurement year with 2 years of prior eligibility.
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.1.13
Statistical Testing	Chi-square Difference in Difference logistic regression

Measure 1.1.14: USPSTF: Colorectal Cancer Screening	
Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Access to Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	NH BRFSS respondents age 50 to 75 who reported having a sigmoidoscopy or colonoscopy within the past years
Eligible Population	NH BRFSS respondents age 50 to 75
Numerator	Survey respondents who reported having a sigmoidoscopy or colonoscopy within the past 3 years
Denominator	Survey respondents age 50 to 75
Comparison Group	Pre intervention (2014) vs Post intervention (2017-2020)
Data Source(s)	New Hampshire BRFSS
Measure ID	1.1.14
Statistical Testing	Chi square

Measure 1.1.16 Adolescent Well Care Visit

Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Access to Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Adolescent Well Care (AWC) The percentage of adolescent Medicaid enrollees (age 12-21) who had one or more comprehensive well care visits with a primary care provider or OB/GYN within the measurement year.
Eligible Population	Members between the age of 12 and 21. Two populations identified – one population with BH disorders and one without.
Numerator	Eligible members with at least one comprehensive well care visits with a primary care provider or OB/GYN within the measurement year.
Denominator	Members between the age of 12 and 21 with and without BH disorders
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounter Data
Measure ID	1.1.16
Statistical Testing	Chi-square Difference in Difference logistic regression

Measure 1.1.18 Emergency Department (ED) Visits	
Domain	Service Utilization
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality to Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	1) HEDIS® Measure -- Ambulatory Care (AMB) – Emergency Department Visits (Non-mental health or chemical dependency services) 2) HEDIS® Measure -- Ambulatory Care (AMB) – Emergency Department Visits for mental health or chemical dependency services Frequent (4+ annually) ED visits for people with a behavioral health disorder. The percentage of Medicaid beneficiaries with behavioral health disorders who had 4+ visit(s) to an ED, in the calendar year.
Eligible Population	All Members - two populations identified – one population with BH disorders and one without.
Numerator	1) Members with 4 or more non mental health or chemical dependency ED visits that did not result in an in-patient stay 2) Members with 4 or more mental health or chemical dependency ED visits that did not result in an in-patient stay
Denominator	All Members with and without BH disorders with exclusions applied
Comparison Group	1) Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020) 2) Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounter Data
Measure ID	1.1.18
Statistical Testing	Chi-square Logistic Regression For #1 – Difference in Difference logistic regression

Measure 1.1.19 Potentially Preventable Emergency Department (ED) Visits

Domain	Service Utilization
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs Quality to Care for Beneficiaries
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	ED Visit Potentially Preventable (Treatable in Primary Care) – see NH provided description (AMBCARE.12_HILVL) ED visits that meet NH DHHS criteria of potentially being preventable or servable in primary care. The percentage of Medicaid beneficiaries who had 1+ ED visits for potentially preventable ED visits per 1,000 member months in the measurement year.
Eligible Population	Medicaid members enrolled on the last day of the calendar year; continuous enrollment not required. Two populations identified – one population with BH disorders and one without.
Numerator	Count number of preventable ED
Denominator	Count of member months for members with and without BH disorders
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounter Data
Measure ID	1.1.19
Statistical Testing	Chi-square Difference in Difference

Measure 1.1.20 Use of Opioids at High Dosage

Domain	Quality of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.1	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Use of Opioid at High Dosage (UOD) This measure assesses the rate per 1,000 members 18 years of age or older who are receiving prescription opioids for 15 or more days at a high dosage. A lower rate indicates better performance.
Eligible Population	Members 18 years of age and older on a prescription opioid for fifteen days or more. Two populations identified – one population with BH disorders and one without. Exclude members with a cancer or sickle cell disease diagnosis; exclude members in hospice; NOTE: This measure will not be used on duals due to lack of pharmacy data.
Numerator	The number of members whose average milligram morphine dose (MME) was > 120 mg during the treatment period.
Denominator	Eligible population with and without BH disorders
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounter Data
Measure ID	1.1.20
Statistical Testing	Chi-Square Difference in Difference

Hypothesis 1.2: Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area.

Measure 1.2.1 Member Experiences of Accessing Care	
Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.2	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area
Measure Description	Explore member's perceptions and experiences accessing care including: barriers to access, unmet need, and experience of accessing care using IDNs. In both 2019 and 2021, 35,70 total interviews were conducted annually across the seven IDNs with beneficiaries who have a behavioral health disorder and who have had at least one health care visit in the previous year, respectively. Interviews were audiotaped and transcribed for thematic analysis.
Eligible Population	Beneficiaries 18 years and older who have a behavioral health disorder and who have at least one visit in the previous 12 months. Providers who treat or care for beneficiaries who have a behavioral health disorder.
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi Structured Interviews
Measure ID	1.2.1
Statistical Testing	Thematic Analysis

Measure 1.2.3 Annual Primary Care Visit

Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.2	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area
Measure Description	HEDIS® Measure -- Adult Access to Preventive/Ambulatory Health Services (AAP). (HEDIS® measures specifications for each year 2014 forward) This measure looks at whether members 20 years of age or older received preventive or ambulatory services. Percent of members with one or more ambulatory or preventive care visit in the past 12 months
Eligible Population	Members 20 years of age or older as of December 31 of measurement year. Two populations identified – one population with BH disorders and one without.
Numerator	Members 20 years of age or older with one or more ambulatory or preventive care visit during the measurement year. - see HEDIS® AAPs specs for beneficiaries 20 years and older.
Denominator	The eligible population with and without BH disorders
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.2.3
Statistical Testing	Chi-square Difference in Difference logistic regression

Measure 1.2.4 Behavioral Health Care Visits	
Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.2	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area
Measure Description	Behavioral Health Care Visits Percent of members with one or more in-patient or out-patient visits with a behavioral health provider in the past 12 months. Number of people (ages 12+) with a behavioral health disorder who had one or more in-patient or out-patient visits with a behavioral health provider, in the calendar year divided by the number of people with a behavioral health disorder
Eligible Population	Members 12 and older with a behavioral health disorder
Numerator	Eligible members with an in-patient or out-patient visit with a behavioral health provider in the measurement year
Denominator	Members 12 and older with a behavioral health disorder
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.2.4
Statistical Testing	Chi-square Logistic regression

Measure 1.2.5 Substance Use Treatment Services	
Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.2	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area
Measure Description	HEDIS® Measure -- Identification of Alcohol and Other Drug Services (IAD) Percent of members who received alcohol and other drug (AOD) treatment services in the past 12 months. Number of people (ages 12+) with a AOD who received AOD treatment services in the measurement year, divided by the number of people with an AOD diagnosis.
Eligible Population	Members age 12 and older with a AOD diagnosis.
Numerator	Eligible members who received AOD Treatment Services in the measurement year
Denominator	Members age 12 and older with a AOD diagnosis
Comparison Group	Not applicable: Services were not covered until after waiver implementation NH started providing AOD services to Medicaid Expansion population on 9/1/2014. AOD services were offered to Standard Medicaid population beginning 7/1/2017.
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.2.5
Statistical Testing	Chi-square Logistic regression

Measure 1.2.6 Adolescent Well Care Visit	
Domain	Access to Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.2	Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area
Measure Description	HEDIS® Measure -- Adolescent Well Care (AWC) The percentage of adolescent Medicaid enrollees (age 12-21) who had one or more comprehensive well care visits with a primary care provider or OB/GYN within the measurement year.
Eligible Population	Members between the age of 12 and 21. Two populations identified – one population with BH disorders and one without.
Numerator	Eligible members with at least one comprehensive well care visits with a primary care provider or OB/GYN within the measurement year.
Denominator	Members between the age of 12 and 21 with and without BH disorders
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.2.6
Statistical Testing	Chi-square Difference in Difference

Hypothesis 1.3: Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.

Measure 1.3.1 Strategies to Improve Population Health	
Domain	Population Health
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.3	Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Semi-structured interviews explored how IDN administrators and providers perceived the impact of DSRIP on population health and the strategies they implemented to improve the overall health of NH residence. Key measurement domains include: resources, infrastructure, outreach activities, intervention strategies and challenges. Interviews were conducted with IDN administrators (7-10) and approximately 17-18 providers (stratified by IDN location) and were conducted in 2019 and 2021. Interviews were audiotaped and transcribed for thematic analysis.
Eligible Population	IDN Administrators and IDN Providers
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi-Structured Interviews
Measure ID	1.3.1
Statistical Testing	Thematic Analysis

Measure 1.3.2 Improvements in Population Health	
Domain	Population Health
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.3	Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Assessment of improvements in population health based on self-reported health status, behavioral risk factors and preventative health. Confidential and anonymous annual random-digit-dialed telephone survey of NH adults. Key measurement domains include: diet, exercise, weight, tobacco and alcohol use, injuries and preventative screenings.
Eligible Population	Individuals over 18 years of age
Numerator	TBD based on response options for the question and distribution of responses.
Denominator	Respondents who answered the question
Comparison Group	Pre intervention (2014) vs Post intervention (2017-2020)
Data Source(s)	New Hampshire BRFSS
Measure ID	1.3.2
Statistical Testing	Chi Square

Hypothesis 1.4: *The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.*

Measure 1.4.1 Total Cost of All Care	
Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost of Care Cost derived from Claims and Encounter Data Total per member per month (PMPM) cost (Physical, Behavioral and Pharmacy Costs) for members with a behavioral health disorder or a co-occurring physical health and behavioral health disorder. Annual total costs divided by the number of member months among members with a behavioral health disorder or a co-occurring physical health and behavioral health disorder, in the measurement year.
Eligible Population	Members with a behavioral health disorder
Numerator	Total member physical, behavioral, and pharmacy costs
Denominator	Member months
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.1
Statistical Testing	Mann-Whitney U-test Difference-in-difference Generalized linear models

Measure 1.4.2 Total Cost of All Inpatient Care	
Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost of In-Patient Care Total per member per month (PMPM) in-patient costs (Physical and Behavioral) for Medicaid beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder. Annual total inpatient costs divided by the number of member months among beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder, in the measurement year
Eligible Population	Eligible members
Numerator	Total Cost (Physical and Behavioral) for In-patient stay during measurement year
Denominator	Member months in-patient stay
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.2
Statistical Testing	Mann-Whitney U-test Difference-in-difference Generalized linear models

Measure 1.4.3 Total Cost of All Outpatient Care

Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost (Physical and Behavioral) of Outpatient Care Total per member per month (PMPM) outpatient costs for Annual total outpatient costs divided by the number of member months.
Eligible Population	Eligible members
Numerator	Total costs (Physical and Behavioral) for outpatient services in the measurement year.
Denominator	Member months
Comparison Group	Propensity score matched group of members without behavioral health. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.3
Statistical Testing	Mann-Whitney U-test Difference-in-difference Generalized linear models

Measure 1.4.4 Total Cost of Emergency Department (ED) Care

Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost (Physical and Behavioral) of ED Care Total per member per month (PMPM) ED costs (Physical and Behavioral) for Medicaid beneficiaries. Annual total ED costs divided by the number of member months among eligible members, in the measurement year.
Eligible Population	Eligible members
Numerator	Total costs of ED outpatient services (including non-behavioral health and behavioral health that do not result in an inpatient stay) during the measurement year
Denominator	Member months for eligible members
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.4
Statistical Testing	Mann-Whitney U-test Difference-in-difference Generalized linear models

Measure 1.4.5 Total Cost of Behavioral Health Care

Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost of Behavioral Health Care Total per member per month (PMPM) behavioral health costs for Medicaid beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder. Annual total behavioral health costs (inpatient, outpatient including treatment services, and ED) divided by the number of member months among beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder, in the measurement year.
Eligible Population	Members with a behavioral health disorder who received behavioral health services
Numerator	Total cost of behavioral health services during the measurement year
Denominator	Member months for members with a behavioral health disorder and behavioral health services
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.5
Statistical Testing	Mann-Whitney U-test Generalized linear models

Measure 1.4.6 Total Cost of Outpatient Behavioral Health Care	
Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	– Total Cost of Outpatient Behavioral Health Care Total per member per month (PMPM) outpatient behavioral costs for Medicaid beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder. Annual total outpatient behavioral health costs including treatment services divided by the number of member months among beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder, in the measurement year.
Eligible Population	Members with a behavioral health disorder who received outpatient behavioral health services
Numerator	Total cost of outpatient behavioral health services during the measurement year
Denominator	Member months for members with a behavioral health disorder and outpatient behavioral health services
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.6
Statistical Testing	Mann-Whitney U-test Generalized linear models

Measure 1.4.7 Total Cost of Inpatient Behavioral Health Care

Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost of Inpatient Behavioral Health Care Total per member per month (PMPM) inpatient behavioral health costs for Medicaid beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder. Annual total psychiatric inpatient behavioral health costs divided by the number of member months among beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder in the measurement year.
Eligible Population	Members with a behavioral health disorder who received inpatient behavioral health services
Numerator	Total cost of inpatient behavioral health services during the measurement year
Denominator	Member months for members with a behavioral health disorder and inpatient behavioral health services
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.7
Statistical Testing	Mann-Whitney U-test Generalized linear models

Measure 1.4.8 Total Cost of Emergency Department (ED) Behavioral Health Care

Domain	Cost of Care
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.4	The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.
Measure Description	Total Cost of ED Behavioral Health Care Total per member per month (PMPM) ED costs for Medicaid beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder. Annual total psychiatric ED behavioral health costs divided by the number of member months among beneficiaries with a behavioral health disorder or a co-occurring physical and behavioral health disorder, in the measurement year.
Eligible Population	Members with a behavioral health disorder who received ED behavioral health services
Numerator	Total cost of ED behavioral health services during the measurement year
Denominator	Member months for members with a behavioral health disorder and ED behavioral health services
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.4.8
Statistical Testing	Mann-Whitney U-test Generalized linear models

Hypothesis 1.5: The rate of avoidable hospital re-admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.

Measure 1.5.1 Hospital Readmission for Any Cause	
Domain	Service Utilization
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.5	The rate of avoidable hospital readmissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure – Plan All-Cause Readmission (PCR) Readmission to hospital for any cause (excluding maternity, cancer, rehabilitation) within 30 days for adult members 18 and older with a behavioral health disorder or a co-occurring physical and behavioral health disorder. Count of the number of hospital readmissions within 30 days of discharge, among adult members 18 and older with a behavioral health disorder or a co-occurring physical and behavioral health disorder, in the measurement year. PCR Medicaid Risk Adjustment is not applied. Medicaid risk adjustment was implemented in 2018 technical specifications.
Eligible Population	Eligible members 18 and older as of index discharge date. HEDIS® exclusions apply.
Numerator	Count of eligible readmissions for any cause within 30 days.
Denominator	For eligible members 18 and older as of index discharge date, count of inpatient stays that meet the HEDIS® specifications. HEDIS® exclusions apply.
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims, Medicaid Encounters, Data from non-claim discharges from New Hampshire (IMD) Hospital
Measure ID	1.5.1
Statistical Testing	Mann-Whitney U-test Difference-indifference generalized linear models

Measure 1.5.2 Hospital Readmission for Behavioral Health Disorder	
Domain	Service Utilization
Waiver Goal	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis 1.5	The rate of avoidable hospital readmissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Hospital Readmission for Behavioral Health Disorder (modification to HEDIS® PCR) Readmission to hospital for the primary cause of a behavioral health disorder within 30 days for adults 18 and older with a previous stay for a behavioral health disorder. Count of the number of hospital readmissions within 30 days of discharge, among adults 18 and older for a primary behavioral health disorder, in the measurement year.
Eligible Population	Members age 18 and older with an inpatient admission primarily for a behavioral health disorder.
Numerator	The count of inpatient readmissions with a primary behavioral health disorder diagnosis.
Denominator	For eligible members 18 and older as of index discharge date, count of inpatient stays for a primary behavioral health disorder diagnosis.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims, Medicaid Encounters, Data from non-claim discharges from New Hampshire (IMD) Hospital
Measure ID	1.5.1
Statistical Testing	Mann-Whitney U-test Difference-indifference generalized linear models

Hypothesis 1.6: *The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.6.1 Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders.	
Domain	Service Utilization
Waiver Goal 1.6	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis	The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.
Measure Description	AHRQ Measure – Ambulatory Care Sensitive Admissions (PQI #90, PQI #91, PQI #92. See below AHRC PQI Composite Measure Table)[27] **Table 1. AHRQ PQI Composite Measure** **Overall Composite (PQI #90)** <table><tr><td>PQI #01 Diabetes Short-Term Complications Admission Rate</td><td>PQI #11 Bacterial Pneumonia Admission Rate</td></tr><tr><td>PQI #03 Diabetes Long-Term Complications Admission Rate</td><td>PQI #12 Urinary Tract Infection Admission Rate</td></tr><tr><td>PQI #05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate</td><td>PQI #13 Angina without Procedure Admission Rate</td></tr><tr><td>PQI #07 Hypertension Admission Rate</td><td>PQI #14 Uncontrolled Diabetes Admission Rate</td></tr><tr><td>PQI #08 Congestive Heart Failure (CHF) Admission Rate</td><td>PQI #15 Asthma in Younger Adults Admission Rate</td></tr><tr><td>PQI #10 Dehydration Admission Rate</td><td>PQI #16 Rate of Lower-Extremity Amputation Among Patients With Diabetes</td></tr></table> **Acute Composite (PQI #91)** <table><tr><td>PQI #10 Dehydration Admission Rate</td><td>PQI #12 Urinary Tract Infection Admission Rate</td></tr><tr><td>PQI #11 Bacterial Pneumonia Admission Rate</td><td></td></tr></table> **Chronic Composite (PQI #92)** <table><tr><td>PQI #01 Diabetes Short-Term Complications Admission Rate</td><td>PQI #13 Angina without Procedure Admission Rate</td></tr><tr><td>PQI #03 Diabetes Long-Term Complications Admission Rate</td><td>PQI #14 Uncontrolled Diabetes Admission Rate</td></tr><tr><td>PQI #05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate</td><td>PQI #15 Asthma in Younger Adults Admission Rate</td></tr><tr><td>PQI #07 Hypertension Admission Rate</td><td>PQI #16 Rate of Lower-Extremity Amputation Among Patients With Diabetes</td></tr><tr><td>PQI #08 Congestive Heart Failure (CHF) Admission Rate</td><td></td></tr></table> Hospital Admission for Ambulatory Care Sensitive Admissions. AHRQ programs modified to work with Claims and Encounter data and calculate acute, chronic and composite rates. Individual rates were calculated and totaled per AHRQ specifications to create, acute, chronic and overall composite rates.

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[27] *AHRQ Quality Indicator User Guide: Prevention Quality Indicators (PQI) Composite Measures*. Version 4.3. August, 2011. Retrieved from https://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/V43/Composite_User_Technical_Specification_ PQI_4.3.pdf on March 25, 2019.

Eligible Population	Eligible members per individual PQI specification.
Numerator	Calculate per individual PQI specification
Denominator	Calculate per individual PQI specification
Comparison Group	Propensity score matched group of members without behavioral health disorders. Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
Measure ID	1.6.1
Statistical Testing	Mann-Whitney U-test Difference-indifference Poisson regression

Hypothesis 1.8: *Average length of stay for inpatient psychiatric care at New Hampshire Hospital (NHH, NH's state run psychiatric facility) will be lower at the end of the Demonstration than prior to the Demonstration, as options for community-based care increase regardless of IDN, geographic location, or market area.*

Measure 1.8.1 Length of Stay for Inpatient Psychiatric Care	
Domain	Service Utilization
Waiver Goal 1.8	Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs
Hypothesis	Average length of stay for inpatient psychiatric care at New Hampshire Hospital (NHH, NH's state-run psychiatric facility) will be lower at the end of the Demonstration than prior to the Demonstration, as options for community-based care increase regardless of IDN, geographic location, or market area.
Measure Description	Length of Stay for New Hampshire Hospital (IMD) Length of stay measured in days for inpatient psychiatric care at NHH during the measurement year.
Eligible Population	Members with a behavioral health disorder who have an inpatient psychiatric stay at NHH.
Numerator	Total number of days at NHH
Denominator	Total number of stays at NHH
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Hospital Discharge Data provided by NH DHHS
Measure ID	1.8.1
Statistical Testing	Mann-Whitney U-test General Linear Model regression

Research Question 2: To what extent has the DSRIP Demonstration improved integration and coordination between providers? To what extent has the DSRIP Demonstration fostered the bi-directional and integrated delivery of physical health services, behavioral health services, SUD services, transitional care, and alignment of care coordination to serve the whole person? Was there any variation between IDNs/geographic regions/market areas?

Hypothesis 2.1: Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.

Measure 2.1.1 Fragmented Care	
Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Fragmented Primary Care A fragmentation of care index (FCI) was developed based on the 2010 Liu study (Liu, et al.).[28] The FCI, was derived by developing a Continuity-of-Care index (COC). The COC considered the number of visits to unique primary care physicians (PCP) sites, the proportion of visits to each PCP sites, and the total number of visits. The COC varies from 0 (all visits to the same PCP) to 1 (each visit takes place at a different PCP). A member was coded as having fragmented care if COC exceeds a certain "threshold" for the study group. This "threshold" is set after examining the distribution of the COC and is generally set around the 75th percentile for the group distribution. The following provider types are considered primary care: General Practice, Family Practice, Internal Medicine, Pediatrics, and Nurse Practitioners, Federal Qualify Health Care Centers, Rural Health Care Centers and Indian Health Services.
Eligible Population	Eligible members with continuous eligibility during the measurement year
Numerator	Eligible members below the COC threshold set. Threshold was set at the 75th percentile for the combined base year periods.
Denominator	Eligible members with continuous eligibility during the measurement year
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medical Claims and Encounters
Measure ID	2.1.1
Statistical Testing	Mann-Whitney U-Test

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[28] Liu CW, Einstadter D, Cebul RD. Care fragmentation and emergency department use among complex patients with diabetes. *Am J Manage Care* 2010; 16(6):413-20.

Measure 2.1.5 Receipt of Necessary Care Composite Score	
Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Composite score indicating whether members with a behavioral health disorder saw a specialist as soon as they needed to AND found it easy to get the care, tests, or treatment they needed, in the last 6 months. The numerator will include the number of beneficiaries with a behavioral health disorder who responded that they "always" receive care from a specialist as soon as they needed. The denominator will include all beneficiaries with a behavioral health disorder who responded to the question.
Eligible Population	Beneficiaries ages 18+ with one or more behavioral health disorders, that had a visit with primary care doctor in previous year
Numerator	Number of beneficiaries with a behavioral health disorder who responded that they "always" receive care from a specialist as soon as they needed
Denominator	All beneficiaries with a behavioral health disorder who responded to the question
Comparison Group	Trended over time to compare changes between survey years (2019, 2020, 2021)
Data Source(s)	CAHPS/QHP Experience of Care Survey
Measure ID	2.1.5
Statistical Testing	TBD

Measure 2.1.6 Timely Receipt of Necessary Care Composite Score

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Composite score indicating whether members with a behavioral health disorder received care right away when needed AND received an appointment for a check-up or routine care as soon as needed, in the last 6 months. The numerator will include the number of beneficiaries with a behavioral health disorder who responded that they "always" receive care right away when necessary AND "always" receive a check-up or routine care when needed. The denominator will include all beneficiaries with a behavioral health disorder who responded to both of the questions.
Eligible Population	Beneficiaries 18+ who have one or more behavioral health disorders
Numerator	Surveyed beneficiaries with a behavioral health disorder who responded that they "always" receive care right away when necessary AND "always" receive a check-up or routine care when needed.
Denominator	All surveyed beneficiaries with a behavioral health disorder who responded to both of the questions
Comparison Group	Trended over time to compare changes between survey years (2019, 2020, 2021)
Data Source(s)	CAHPS/QHP Experience of Care Survey
Measure ID	2.1.6
Statistical Testing	TBD

Measure 2.1.7 Care Coordination Composite Score

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	The care coordination composite score is based on five questions regarding the care provided by the member's personal doctor and the doctor's staff in the last 6 months. Three items relate specifically to the care provided by the personal doctor: how often the personal doctor (a) had the member's medical records or other information about their care, (b) seemed informed and up-to- date about care from specialists, and (c) talked with the member about prescription medication. Two additional questions query the actions of the staff from the personal doctor's office: how often someone from the doctor's office (a) spoke with the member regarding test results and (b) assisted the member in managing care from different providers and services.
Eligible Population	Beneficiaries ages 18+ with one or more behavioral health disorders, that had a visit with primary care doctor in previous year
Numerator	Number of beneficiaries with a behavioral health disorder who responded "always" to each of the five questions regarding care coordination
Denominator	The denominator will include all beneficiaries with a behavioral health disorder who responded to all of the care coordination questions
Comparison Group	Trended over time to compare changes between survey years (2019, 2020, 2021)
Data Source(s)	CAHPS/QHP Experience of Care Survey
Measure ID	2.1.7
Statistical Testing	TBD

Measure 2.1.8 Behavioral Health Composite Score	
Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Three questions will be used to measure behavioral health care received in the last 12 months provided by anyone in the personal provider's office: whether or not members were (a) ask if there was a period of time when they felt sad, empty, or depressed, (b) talked to about whether there were things in the member's life causing them worry or stress, and (c) talked to about a personal or family problem, alcohol or drug use, or an emotional or mental illness.
Eligible Population	Beneficiaries 18+ who have one or more behavioral health disorders
Numerator	Number of beneficiaries with a behavioral health disorder who responded affirmatively to the questions described above in measure description
Denominator	All beneficiaries with a behavioral health disorder who responded to all three of the questions
Comparison Group	Trended over time to compare changes between survey years (2019, 2020, 2021)
Data Source(s)	CAHPS/QHP Experience of Care Survey
Measure ID	2.1.8
Statistical Testing	TBD

Measure 2.1.9 Mental Health Hospitalization Follow-Up (7-days)

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Follow-Up after hospitalization for mental illness (FUH) This measure looks at the continuity of care for mental illness. It measures the percentage of members 6 years of age and older who were hospitalized for treatment of selected mental disorder or intentional self-harm and who had a follow-up visit with a mental health practitioner within 7 days after their discharge. This measure reports the percentage of discharges for which member received an outpatient visit, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 7 days after discharge.
Eligible Population	Members over 6 years of age who were hospitalized for treatment of selected mental disorders or intentional harm with continuous enrollment for 7 days after discharge.
Numerator	Members 6 years and older with a follow up visit within 7 days after discharge from a hospital for treatment of selected mental illness.
Denominator	The denominator for this measure is based on discharges not on members. HEDIS® exclusions applied.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims, Medicaid Encounters, Data from non-claim discharges from New Hampshire (IMD) Hospital
Measure ID	2.1.9
Statistical Testing	Mann-Whitney U-Test Generalized linear models

Measure 2.1.10 Mental Health Hospitalization Follow-Up (30 days)

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Follow-Up after hospitalization for mental illness (FUH) This measure looks at the continuity of care for mental illness. It measures the percentage of members 6 years of age and older who were hospitalized for treatment of selected mental disorder or intentional self-harm and who had a follow-up visit with a mental health practitioner within 30 days after their discharge. This measure reports the percentage of discharges for which member received an outpatient visit, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 30 days after discharge.
Eligible Population	Members over 6 years of age who were hospitalized for treatment of selected mental disorders or intentional harm with continuous enrollment for 30 days after discharge.
Numerator	Members 6 years and older with a follow up visit within 30 days after discharge from a hospital for treatment of selected mental illness.
Denominator	The denominator for this measure is based on discharges not on members. HEDIS® exclusions applied.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims, Medicaid Encounters, Data from non-claim discharges from New Hampshire (IMD) Hospital
Measure ID	2.1.10
Statistical Testing	Mann-Whitney U-Test Generalized linear models

Measure 2.1.11 Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Follow-up After Emergency Department Visit for Mental Illness (FUM) (Measure first year is HEDIS® 2017 for data year 2016) This measure assesses the percentage of ED visits for members 6 years of age and older with a principal diagnosis of mental illness or intentional self-harm, who had a follow-up visit for mental illness. The percentage of ED visits for which the member received follow-up within 30 days (31 total days)
Eligible Population	Members 6 and older who had a visit to the Emergency Department for with a principal diagnosis of mental illness or intentional self-harm. *(See HEDIS® FUM specifications for 2017; 2017 specifications were applied to earlier data years 2013-2015.)*
Numerator	A visit with any provider with a principal diagnosis of mental health disorder within 30 days following the ED visit – see HEDIS® FUM specifications for 2017 measurement year.
Denominator	Count of ED visits for members age 6 and older with a principal diagnosis of mental illness.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters,
DSRIP Measure ID	2.1.11
Statistical Testing	Mann-Whitney U-test Generalized linear regression

Measure 2.1.12 Alcohol/Drug Dependence Emergency Department (ED) Visit Follow-Up 30 days)	
Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	HEDIS® Measure -- Follow-up After Emergency Department (ED) Visit for Alcohol and Other Drug Dependence (FUA) (First HEDIS® specification 2017 for 2016 data year) This measure assesses the percentage of ED visits for members 13 years of age or older with a principal diagnosis of alcohol or other drug (AOD) abuse or dependence, who had a follow-up visit for AOD. The 30 day rate will be reported: Percentage of ED visits for which member received follow-up within 30 days of the ED visit (31 total days)
Eligible Population	Members 13 and older who had a visit to the Emergency Department for alcohol or other drug dependence with continuous enrollment for 30 days after the ED visit. - see HEDIS® FUA for measurement year 2017 forward. The 2017 specifications were applied to the 2013-2016 data years.
Numerator	A visit with any provider with a principal diagnosis of (AOD) within 30 days of an ED visit for AOD – see HEDIS® FUA specs for each measurement year.
Denominator	The denominator on this measure is based on ED visits, not on members. HEDIS® exclusions applied.
Comparison Group	Pre intervention (2013, 2014, 2015) vs Post intervention (2016, 2017, 2018, 2019, 2020)
Data Source(s)	Medicaid Claims and Encounters
DSRIP Measure ID	2.1.12
Statistical Testing	Mann-Whitney U-test Generalized linear models

Measure 2.1.13 Ratings of Improvement in Care Coordination and Integration

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	The provider & beneficiary surveys will address the extent to which DSRIP has achieved integration and coordination between providers including bi-directional integrated delivery of physical and behavioral health services, SUD services, transitional care, and the alignment of care coordination to serve the whole person. The provider survey will be focused on the organizational/operational perspective while the patient survey will be tailored to their experiences/perspectives. Questions and scoring will be drawn from established surveys (e.g., CAHPS, the Picker Institute).
Eligible Population	IDN Providers, Beneficiaries
Numerator	NA
Denominator	NA
Comparison Group	2019 surveys vs. 2021 surveys
Data Source(s)	Cutler Institute Surveys (Providers) Beneficiary Surveys: CAHPS/QHP Experience of Care Survey
Measure ID	2.1.13
Statistical Testing	Descriptive Statistics Thematic Analysis

Measure 2.1.14 Patient Experiences of Care Integration and Coordination	
Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Explore the influence that integration and coordination has had on health care experiences and health. In both 2019 and 2021, 35 interviews were conducted annually (70 total) across the seven IDNs with beneficiaries who have a behavioral health disorder and who have had at least one health care visit in the previous year, respectively. Interviews will be audiotaped and transcribed for thematic analysis.
Eligible Population	Beneficiaries 18+ who have one or more behavioral health diagnoses and have had at least one health care visit in the past 12 months
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi-structured interviews
Measure ID	2.1.14
Statistical Testing	Thematic Analysis

Measure 2.1.15 Practice and Provider Experiences of Care Integration and Coordination

Domain	Integration of Care
Waiver Goal	Improve Health Care Integration and Coordination for Beneficiaries
Hypothesis 2.1	Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.
Measure Description	Explore the influence that integration and coordination has had on health care experiences and health. Key interview domains included: integration and coordination strategies, barriers to integration, information sharing, policies supporting coordination, provider experiences with integration. In each year 2019 and 2021, interviews were conducted with IDN administrators (1-2 per IDN) and approximately 35 providers (17-18 per year, stratified by IDN location). Interviews were audiotaped and transcribed for thematic analysis.
Eligible Population	IDN Administrators and IDN Providers
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi-structured interviews
Measure ID	2.1.15
Statistical Testing	Thematic Analysis

Research Question 3: To what extent has the DSRIP Demonstration improved the capacity of the state's behavioral health workforce to provide quality, evidence-based, integrated care?

Hypothesis 3.1: *Capacity to deliver evidenced-based behavioral health treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.*

Measure 3.1.1 Size and Training of Provider Network	
Domains	Infrastructure
Waiver Goal	Improve capacity of the state's behavioral health workforce
Hypothesis 3.1	Capacity to deliver evidenced-based behavioral health treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.
Measure Description	Assessment of the size and training of the IDN provider network to care for and treat members with a behavioral health disorder.
Eligible Population	NA
Numerator	NA
Denominator	NA
Comparison Group	Cross year comparisons from 2016 - 2021
Data Source(s)	IDN Documents
Measure ID	2.1.15
Statistical Testing	Descriptive Statistics Thematic Analysis

Research Question 4: To what extent has the DSRIP Demonstration enhanced the state's health IT ecosystem to support delivery system and payment reform? Have changes to the IT ecosystem brought about by the DSRIP Demonstration specifically enhanced the IDNs in regard to the following four key areas: governance, financing, policy/legal issues and business operations?

Hypothesis 4.1: Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.

Measure 4.1.1 Enhancements to IT System	
Domain	Infrastructure
Waiver Goal	Improve Health IT Ecosystem
Hypothesis 4.1	Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.
Measure Description	Assessment of the health information technology system on four dimensions: (a) governance, (b) financing, (c) policy/legal issues, and (d) business operations. Confidential and anonymous web-based survey with closed- and open- ended questions were conducted in both 2019 and 2021. Survey respondents were the people in each IDN most knowledgeable about the four major topic areas of IT (e.g., governance, financing, policy/legal issues and business operations), not limited to IDN administrators, IDN information technologists, IDN legal staff, and IDN accountants. Content analysis of IDN documents, including quarterly CMS reports and IDN semi-annual reports.
Eligible Population	IDN HIT stakeholders
Numerator	NA
Denominator	NA
Comparison Group	2019 and 2021 Surveys and IDN document review
Data Source(s)	Cutler Institute Surveys (HIT) and IDN Documents
Measure ID	4.1.1
Statistical Testing	Descriptive Statistics Thematic Analysis

Measure 4.1.2 Perceptions of the Enhanced IT System	
Domain	Infrastructure
Waiver Goal	Improve Health IT Ecosystem
Hypothesis 4.1	Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.
Measure Description	Semi-structured interviews explored how various stakeholder groups perceive the enhanced health IT ecosystem to support delivery system and payment reform regarding governance, financing, policy/legal issues, and business operations. In each year 2019 and 2021, approximately 1-2 interviews were conducted with IDN HIT staff and/or stakeholders, as well as IDN Administrators (1-2 from each IDN), 17-18 providers and 35 beneficiaries. Interviews were audiotaped and transcribed for thematic analysis.
Eligible Population	IDN HIT staff and stakeholders, IDN Administrators, Beneficiaries
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi-structured interviews
Measure ID	4.1.2
Statistical Testing	Thematic analysis

Measure 4.1.3 Perceptions of the Usability and Utility of the Enhanced IT System

Domain	Infrastructure
Waiver Goal	Improve Health IT Ecosystem
Hypothesis 4.1	Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.
Measure Description	Semi-structured interviews explored how various stakeholder groups perceive the enhanced health IT ecosystem in supporting health care delivery, integration, and coordination. In each year 2019 and 2021, 35 interviews (70 total) were conducted across the seven IDNs with beneficiaries who have a behavioral health disorder and who have had at least one health care visit in the previous year, respectively. Additionally, 17-18 providers and 7-10 HIT stakeholders across IDNs were interviewed in both years. Interviews were audiotaped and transcribed for thematic analysis.
Eligible Population	Beneficiaries ages 18+ with one or more behavioral health disorders, that had a visit with primary care doctor in previous year, HIT stakeholders, IDN providers
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi-Structured Interviews
Measure ID	4.1.3
Statistical Testing	Thematic Analysis

Hypothesis 4.2: Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.

Measure 4.2.1 Care Coordination Composite Score	
Domain	Integration of Care
Waiver Goal	Improve Health IT Ecosystem
Hypothesis 4.2	Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.
Measure Description	The is based on five questions regarding the care provided by the member's personal doctor and the doctor's staff in the last 6 months. Three items relate specifically to the care provided by the personal doctor: how often the personal doctor (a) had the member's medical records or other information about their care, (b) seemed informed and up-to-date about care from specialists, and (c) talked with the member about prescription medication. Two additional questions query the actions of the staff from the personal doctor's office: how often someone from the doctor's office (a) spoke with the member regarding test results and (b) assisted the member in managing care from different providers and services.
Eligible Population	Beneficiaries ages 18+ with one or more behavioral health disorders, that had a visit with primary care doctor in previous year
Numerator	Number of beneficiaries with a behavioral health disorder who responded "always" to each of the five questions regarding care coordination
Denominator	All beneficiaries with a behavioral health disorder who responded to all of the questions regarding care coordination
Comparison Group	Trended over time to compare changes between survey years (2019, 2020, 2021)
Data Source(s)	CAHPS∕QHP Experience of Care Survey
Measure ID	4.2.1
Statistical Testing	NA

Measure 4.2.2 Ratings of Improvement in Care Coordination and Integration

Domain	Integration of Care
Waiver Goal	Improve Health IT Ecosystem
Hypothesis 4.2	Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.
Measure Description	The surveys addressed the extent to which DSRIP has achieved integration and coordination between providers including bi-directional integrated delivery of physical and behavioral health services, SUD services, transitional care, and the alignment of care coordination to serve the whole person. The provider survey focused on the organizational/operational perspective while the patient survey was tailored to their experiences/perspectives.
Eligible Population	Beneficiaries ages 18+ with one or more behavioral health disorders, that had a visit with primary care doctor in previous year; IDN providers
Numerator	NA
Denominator	NA
Comparison Group	Provider Surveys 2019, 2021 Beneficiaries: Trended over time to compare changes between survey years (2019, 2020, 2021)
Data Source(s)	CAHPS survey (Beneficiaries), Cutler Institute Surveys (Providers)
Measure ID	4.2.2
Statistical Testing	Descriptive Statistics Thematic Analysis

Measure 4.2.3 Perceptions of Improved Information Exchange	
Domain	Integration of Care
Waiver Goal	Improve Health IT Ecosystem
Hypothesis 4.2	Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.
Measure Description	Semi-structured interviews explored how various stakeholder groups perceived the enhanced health IT ecosystem to support information sharing across settings and the use of information to enhance case management. In each year 2019 and 2021, approximately 7-10 interviews were conducted with IDN HIT staff and/or stakeholders, as well as IDN Administrators (7-10 interviews), 17-18 providers and 35 beneficiaries. Interviews were audiotaped and transcribed for thematic analysis.
Eligible Population	Beneficiaries ages 18+ with one or more behavioral health disorders, that had a visit with primary care doctor in previous year; IDN administrators, IDN providers, HIT staff/ stakeholders
Numerator	NA
Denominator	NA
Comparison Group	Interview data from 2019 and 2021
Data Source(s)	Semi-Structured Interviews
Measure ID	4.2.3
Statistical Testing	Thematic Analysis

Research Question 5: To what extent has the DSRIP Demonstration improved IDNs' readiness to transition to or implement Alternative Payment Models (APMs)? Are IDNs making adequate preparations in data infrastructure, financial infrastructure, and other required changes needed to achieve the goal of 50% of Medicaid provider payments to providers using APMs by the end of the Demonstration period? Have the IDNs engaged with the state and managed care plans in support of that goal?

Hypothesis 5.1: *DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.*

Measure 5.1.1 Transitioning to Alternative Payment Models	
Domain	Infrastructure
Waiver Goal	Transition to Alternative Payment Models
Hypothesis 5.1	DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.
Measure Description	Assessment of transition to alternative payment models (e.g. transition plans, policies, number of new payment models implemented, payments made to providers). Analysis of IDN reports, including CMS quarterly reports and notices of training and hiring within the IDN.
Eligible Population	NA
Numerator	NA
Denominator	NA
Comparison Group	Cross year comparisons from 2016 - 2021
Data Source(s)	IDN Documents
Measure ID	5.1.1
Statistical Testing	Descriptive Statistics Thematic Analysis

Measure 5.1.2 Experiences Transitioning and Implementing APMS	
Domain	Infrastructure
Waiver Goal	Transition to Alternative Payment Models
Hypothesis 5.1	DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.
Measure Description	Semi-structured interviews explored how IDN administrators perceive the transition to and implementation of APMs. Interviews were conducted with IDN administrators (1-2 annually per IDN) and providers (17-18 annually stratified by IDN). Interviews will be audiotaped and transcribed for thematic analysis.
Eligible Population	IDN Administrators, IDN providers
Numerator	NA
Denominator	NA
Comparison Group	Interview Data 2019 & 2021
Data Source(s)	Semi-Structured Interviews
Measure ID	5.1.2
Statistical Testing	Thematic Analysis

APPENDIX

B. 2019 & 2021 Survey Instruments

Administrators, HIT Stakeholders, Providers, Beneficiaries**

**(2019, 2020, 2021 for Beneficiaries)

2019 IDN Administrator Survey

Care Integration

The following questions are designed to further our understanding of how you think care integration strategies are working within the DSRIP Demonstration.

1. Using the following scale, please rate whether you believe the following strategies have been successful at promoting care integration under the DSRIP demonstration.

	Very Successful	Somewhat Successful	Neutral	Somewhat Unsuccessful	Not at all Successful	N/A
a. Striving for greater flexibility in provider roles	○	○	○	○	○	○
b. Coordination of services across disciplines	○	○	○	○	○	○
c. Policies to support information sharing between organizations	○	○	○	○	○	○
d. Supporting interdisciplinary and team-based work	○	○	○	○	○	○
e. Making organizational culture adjustments	○	○	○	○	○	○
f. Developing clinical guidelines for shared care	○	○	○	○	○	○
g. Improved mechanisms for follow-up after referral	○	○	○	○	○	○
h. Improving reimbursement policies	○	○	○	○	○	○
i. Transitioning to Alternative Payment model	○	○	○	○	○	○
j. Increased health information sharing between patients and providers	○	○	○	○	○	○
k. Increased health information sharing between settings	○	○	○	○	○	○

Resources and Capacity Building

The following questions are designed to further our understanding of resources, capacity building and technical assistance form the state.

2. Using the following scale, please indicate how important the following resources are to the success of your DSRIP project.

	Extremely Important	Very Important	Moderately Important	Slightly Important	Not at all Important
a. Staffing Infrastructure (enough staff in the right positions)	○	○	○	○	○
b. Financial Resources	○	○	○	○	○
c. Leadership from DHHS	○	○	○	○	○
d. Leadership within IDN	○	○	○	○	○
e. Involved and Dedicated Community Networks	○	○	○	○	○
f. HIT enhancements	○	○	○	○	○
g. Physical Infrastructure	○	○	○	○	○
h. Improving Clinical Knowledge of Providers	○	○	○	○	○

3. How helpful do you, your staff, and providers find the DSRIP Statewide Learning Collaborative meetings, which were conducted as part of the Demonstration?

Extremely Helpful	Very Helpful	Moderately Helpful	Slightly Helpful	Not at all helpful	Unsure
○	○	○	○	○	○

4. From your perspective, how valuable have the project implementation support and technical assistance (TA) provided by NH DHHS and its consultants been in supporting Demonstration activities?

Extremely Valuable	Very Valuable	Moderately Valuable	Slightly Valuable	Not at all valuable	Unsure
○	○	○	○	○	○

5. What have been the most effective types of technical assistance provided to your IDN?

6. What have been the least effective types of technical assistance provided to your IDN?

Sustainability and Impact
The last questions are designed to allow us to gauge if you think this project has an impact and how sustainable changes made will be.

7. In your view, is DSRIP changing the way that care is delivered in New Hampshire for people with behavioral health disorders?
   - o Yes
     - ▪ If yes, how?
   - o No

▪ If no, why do you think it has remained the same?

8. In your opinion, how likely is it that the implemented changes in HIT infrastructure will be sustained after the DSRIP Demonstration has ended?

Extremely Likely	Very Likely	Moderately Likely	Slightly Likely	Not at all likely	Unsure
○	○	○	○	○	○

9. Have you experienced any challenges as your IDN transitions to implementing Alternative Payment Models (APMs)?

- Yes
    - ▪ Please describe the challenges.
- No

10. As your IDN transitions to implementing Alternative Payment Models, do you see potential benefits of this transition?

- Yes
    - ▪ Please describe the potential benefits.
- No

11. In relation to the DSRIP project, what resources do you believe your IDN will need to sustain its work after the demonstration is over? (Finance-related, training, systems, etc.)

12. Is there anything else you would like to tell us about the DSRIP Demonstration from your view as an IDN administrator?

2021 IDN Administrator Survey

Care Integration

The following questions are designed to further our understanding of how you think Care Integration strategies impacted the DSRIP Demonstration.

1. Using the following scale, please rate whether you believe the following strategies were successful at <u>promoting care integration</u> under the DSRIP Demonstration. [very successful to not at all successful - 5 pt scale; unsure; not applicable]
   a. Striving for greater flexibility in provider roles
   b. Coordination of services across disciplines (e.g. medical, behavioral, community-based organizations)
   c. Policies to support information sharing between organizations
   d. Supporting interdisciplinary and team-based work
   e. Making organizational culture adjustments
   f. Developing clinical guidelines for shared care
   g. Improved mechanisms for follow-up after referral
   h. Improving reimbursement policies
   i. Transitioning to Alternative Payment Model
   j. Increased health information sharing between patients and providers
   k. Increased health information sharing between settings (i.e., between PCP and BH provider; or BH provider and hospital; social service / community organization)

Resources and Capacity Building

The following questions are designed to further our understanding of resources, capacity building and technical assistance from the state.

2. Using the following scale, please indicate how important the following resources were to the success of your DSRIP project. [very important to not at all important- 5 pt scale; unsure; not applicable]

   a. Staffing Infrastructure (having enough staff in the right positions)
   b. Financial Resources
   c. Leadership from DHHS
   d. Leadership within IDN
   e. Involved and Dedicated Community Networks
   f. HIT Enhancements
   g. Physical Infrastructure
   h. Improving Clinical Knowledge of Providers
   i. Cross-IDN Leadership Collaboration

3. How helpful did you, your staff, and providers find the DSRIP Statewide Learning Collaborative meetings, which were conducted as part of the Demonstration? (very helpful to not helpful at all- 5 point scale; unsure; not applicable)

4. From your perspective, how valuable has the project implementation support and technical assistance (TA) provided by NH DHHS and its consultants been in supporting Demonstration activities? (very valuable to not valuable at all- 5 point scale; unsure; not applicable)

Sustainability and Impact

These questions are designed to allow us to gauge your views on the impact of the Demonstration, and the sustainability of changes made during the Demonstration.

5. Rate your agreement with the following statements:

The DSRIP Demonstration has changed the way that care is delivered in New Hampshire for people with behavioral health disorders through:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Unsure
a. Increased access to care	○	○	○	○	○	○
b. Improved quality of care	○	○	○	○	○	○
c. Enhanced care integration	○	○	○	○	○	○
d. Greater coordination between providers	○	○	○	○	○	○
e. Improved follow-up and referral systems	○	○	○	○	○	○
f. Improved care transitions	○	○	○	○	○	○

6. Rate your agreement with the following statements about the sustainability of the DSRIP Demonstration efforts:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Unsure
a. Changes made to the HIT infrastructure during the Demonstration are still in place.	○	○	○	○	○	○
b. New staff such as mental health counselors, substance use counselors, community health workers, and nurses hired as part of the DSRIP have been retained.	○	○	○	○	○	○
c. Generally, improvements made to promote integration of physical and behavioral health care of Beneficiaries (e.g., coordination across providers, linking Beneficiaries with community supports) are sustainable.	○	○	○	○	○	○
d. Working partnerships within my IDN remain in place.	○	○	○	○	○	○
e. Coordination across participating IDN organizations still takes place.	○	○	○	○	○	○
f. The transition to Alternative Payment Models implemented as part of the DSRIP Demonstration is sustainable.	○	○	○	○	○	○

7. What, in your view, was the single most transformative element of the DSRIP Demonstration? (open-ended)

IDN Specific Questions
These questions are specific to the unique experiences, challenges, and successes of your IDN throughout the Demonstration.

8. How successful do you feel your IDN was at meeting the goals of the statewide Demonstration projects?
[Extremely successful, very successful, moderately successful, slightly successful, not at all successful]

9. How successful do you feel your IDN was at meeting the goals of your community specific Demonstration projects?
[Extremely successful, very successful, moderately successful, slightly successful, not at all successful]

10. How successful do you feel your IDN was at transitioning to Alternative Payment Models during the Demonstration?
[Extremely successful, very successful, moderately successful, slightly successful, not at all successful]

11. Did you experience any challenges with the implementation of Alternative Payment Models (APMs)? [Yes/no]

If yes, could you please indicate challenges your IDN experienced (check all that apply):

    a. Logistical issues
    b. Financial risk
    c. Infrastructure
    d. Performance target setting
    e. Reporting requirements
    f. Lack of real-time, accurate data
    g. Provider readiness and capability
    h. Organizational or provider resistance
    i. Insufficient number of enrollees
    j. Lack of guidance on transition
    k. Disruption due to 2020 pandemic
    l. Other _____

12. Are there additional resources or supports that could have aided the transition to APMs during the Demonstration? (open-ended)

COVID-19 Specific Questions
The COVID-19 pandemic has had a significant impact on healthcare systems and delivery; the following questions are designed to gather information on the impact of COVID-19 on Demonstration activities and IDN functioning.

13. Which, if any, factors related to the COVID-19 pandemic had an impact on IDN efforts and reaching milestones during the last year of the Demonstration? (Please select your top 3.)

   a. Program/institution's infrastructure limitations
   b. Staffing shortages
   c. Financial constraints
   d. Technology challenges (Please specify what challenges you've encountered) [free response]
   e. Service delivery changes
   f. Healthcare provider burnout
   g. Competing organizational priorities
   h. Competing clinical priorities
   i. State/Federal policy changes
   j. Other_____
   k. No Pandemic-Related Impacts

14. What, if any, successful policies or strategies did your IDN implement because of the pandemic that you would like to see continue? (open-ended)

15. Due to COVID-19, health care providers have rapidly expanded the use of telehealth. Please select which, if any, of the following barriers your IDN experienced using telehealth for Beneficiaries with behavioral health disorders during this time: (select all that apply)

   a. Program/institution's infrastructure
   b. Healthcare worker home-work environment/infrastructure
   c. Uncertainty regarding reimbursement
   d. Patient access (e.g., no smart phone or high-speed internet access)
   e. Patient is not tech-savvy
   f. Patient perception issues (e.g., strong preference for face-to-face care)
   g. Healthcare worker technology challenges
   h. Healthcare worker preference/policy
   i. Patient safety (treatment regimen not appropriate for telehealth)
   j. No barriers to telehealth
   k. We are not using telehealth
   l. Other_____

Closing

16. Is there anything else you would like to share with us about the DSRIP Demonstration from your view as an IDN Administrator? (open-ended)

2019 DSRIP HIT Stakeholder Survey

Background

1. Please identify the IDN you are affiliated with, and/or your participation in the state HIT workgroup, or how you have been involved in HIT infrastructure within the state since DSRIP began (select all that apply):

    o   IDN1 – Region 1 Integrated Delivery Network – Mary Hitchcock
    o   IDN2 – Region 2 IDN – Concord Hospital
    o   IDN3 – Greater Nashua IDN – Southern New Hampshire health
    o   IDN4 – Network4Health – Catholic Medical Center
    o   IDN5 – Region 5 IDN – Community Health Services Network
    o   IDN6 – Region 6 – Strafford County
    o   IDN7 – Region 7 IDN – North Country Health Consortium
    o   HIT Quality Work Group/ HIT Task Force etc. specific to DSRIP
    o   Other: _____

2. Using the following scale, please tell us how frequently you are engaged in the following activities for HIT-related activities for the IDN.

	Annually	Monthly	Bi-weekly	Weekly	Daily	Not engaged
a. Meetings	○	○	○	○	○	○
b. Planning sessions	○	○	○	○	○	○
c. Trainings	○	○	○	○	○	○
d. Strategic planning of workflows and protocols	○	○	○	○	○	○
e. Implementation of workflows and protocols	○	○	○	○	○	○

3. How have you been involved in the HIT work related to capturing, managing, sharing and storing patient data within the DSRIP IDNs? (Select all that apply)
    o   Planning system infrastructure changes
    o   Building system infrastructure
    o   Implementation of system
    o   Support of system
    o   I have not been involved

Software

The following questions are designed to determine your views and knowledge of software implementation and use throughout NH and within individual IDNs.

4. Using the following scale, please tell us the status of implementation of the following software packages at the applicable worksite(s) within your IDN association.

	Software Has Been Implemented	In the Process of Implementation	Planning to Implement	Not Implementing	Not Sure
a. Shared Care Plan Software	○	○	○	○	○
b. Direct Secure Messaging Software	○	○	○	○	○
c. Event Notification Services Software	○	○	○	○	○

5. Using the following scale, please share your personal assessment on the ease of implementing each software package, as applicable.

	Very easy	Easy	Neither Easy or Difficult	Difficult	Very Difficult
a. Shared Care Plan Software	○	○	○	○	○
b. Direct Secure Messaging Software	○	○	○	○	○
c. Event Notification Services Software	○	○	○	○	○

Workflow

The following questions are designed to determine your views on how HIT activities and enhancements have impacted clinical workflows and coordination of care.

6. Using the following scale, please rate whether you agree or disagree with the following statements.

Advances in HIT infrastructure within the IDNs are having a positive, direct impact on:	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Agree
a. Enhanced care coordination for persons with behavioral health diagnosis	○	○	○	○	○
b. Increased health information sharing between patient and provider(s)	○	○	○	○	○
c. Enhanced health information sharing between settings (i.e., between PCP and Behavioral Health provider; or BH provider and hospital)	○	○	○	○	○
d. Increased electronic monitoring of patient health by providers/ staff	○	○	○	○	○

7. As part of the DSRIP Demonstration, PCPs and Behavioral Health providers are required to report data for the Comprehensive Core Standardized Assessment (CCSA) within the IDN. Are you aware of any of the components of the CCSA?

   o   Yes
   o   No (if no, skip to question 9)

8. To your knowledge, what are the reasons(s) that an IDN may be under-reporting or not completing the CCSAs? (Choose all that apply)
   o   Data elements within the CCSA measure are not being collected
   o   Providers are unaware of the reporting requirement
   o   Providers do not fully understand the CCSA measure
   o   Current HIT infrastructure is not robust enough to support data collection points needed
   o   There are too many data collection points for the CCSA
   o   I don't know why there might be under-reporting or non-completion of the CCSA
   o   Other_____

9. Using the following scale, please indicate your agreement with the following statements about the implementation of strategies designed to enhance HIT infrastructure in NH.

	Strongly Agree	Agree	Neither Agree or	Disagree	Strongly Agree

			Disagree		
a. The use of electronic health records for data collection has been expanded.	○	○	○	○	○
b. Connection and active use of Direct Messaging, DH-Connect, and EHR vendor inter-vendor connectivity has occurred.	○	○	○	○	○
c. The Shared Care Plan has been successfully implemented.	○	○	○	○	○

10. Using the following scale, please rate whether you agree or disagree with the following statements.

The following factors have directly influenced the successful implementation of DSRIP HIT strategies:	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Agree
a. Patient needs	○	○	○	○	○
b. State/ DHHS policies	○	○	○	○	○
c. Organizational leadership within IDN	○	○	○	○	○
d. Provider buy-in	○	○	○	○	○
e. Adequate funding	○	○	○	○	○
f. Input from HIT Task Force, Work Groups, Committees, etc.	○	○	○	○	○

Open Ended

This final section is designed to gather further details about successes in HIT infrastructure development and ongoing challenges that need to be addressed in the future. Again, please think about the DSRIP Demonstration work while answering these questions.

11. What do you consider to be your greatest success(es) in DSRIP-related HIT infrastructure development?

12. Please briefly describe the biggest challenge(s) you faced while planning and/or implementing HIT systems. How did you overcome them?

13. If not indicated in your answer to question 12, have you experienced any challenges specifically related to data sharing? If yes, please explain.

14. What gaps still exist in the state's HIT ecosystem?

15. What legal or policy issues have been addressed as part of the IDN HIT enhancement activities?

16. Is there anything else you would like to share about the DSRIP efforts to enhance HIT infrastructure in New Hampshire?

2021 DSRIP HIT Stakeholder Survey

Background
The following questions are intended to provide us with background information about your role in IDN specific and/or DSRIP-related HIT activities.

1. **Please identify the IDN you are (or were) affiliated with, and/or your participation in the state HIT workgroup, or how you were involved in HIT infrastructure within the state during the DSRIP Demonstration (select all that apply):**
   - o IDN1 – Region 1 Integrated Delivery Network - Mary Hitchcock
   - o IDN2 – Region 2 IDN – Concord Hospital
   - o IDN3 – Greater Nashua IDN – Southern New Hampshire Health
   - o IDN4 – Network4Health – Catholic Medical Center
   - o IDN5 – Region 5 IDN – Community Health Services Network
   - o IDN6 – Region 6 Integrated Delivery Network – Strafford County
   - o IDN7 – Region 7 IDN – North Country Health Consortium
   - o HIT Quality Work Group/ HIT Task Force etc. specific to DSRIP
   - o Other: _____

2. **How were you involved in the HIT work related to capturing, managing, sharing and storing patient data within the DSRIP IDNs during the Demonstration period? (Select all that apply)**
   - o Planning system infrastructure changes (i.e., workflow, protocols, software selection)
   - o Building system infrastructure
   - o Implementation of system
   - o Support of system
   - o Trainings to support HIT implementation
   - o I was not involved

Software
The following questions are designed to determine your views and knowledge of software implementation and use throughout NH and within individual IDNs.

3. Using the following scale, **please tell us the implementation status by the end of the Demonstration of the following software packages at the applicable worksite(s) within your associated IDN.**					
	Software Implemented	In the Process of Implementation	Planning to Implement	Did Not Implement	Not Sure
a. Shared Care Plan Software	O	O	O	O	O
b. Direct Secure Messaging Software	O	O	O	O	O
c. Event Notification Services Software	O	O	O	O	O

4. Using the following scale, **please share your personal assessment on the ease of implementing each software package, as applicable.**

		Very Easy	Easy	Neither Easy or Difficult	Difficult	Very Difficult
a.	Shared Care Plan Software	O	O	O	O	O
b.	Direct Secure Messaging	O	O	O	O	O
c.	Event Notification Services Software	O	O	O	O	O

Workflow

The following questions are designed to determine your views on how HIT activities and enhancements have impacted clinical workflows and coordination of care.

5.	Using the following scale, please rate whether you agree or disagree with the following statements. **By the completion of the Demonstration, advances in HIT infrastructure within the IDNs had a positive, direct impact on …**					
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
a.	Enhanced care coordination for persons with behavioral health diagnosis	O	O	O	O	O
b.	Increased health information sharing between patient and provider(s)	O	O	O	O	O
c.	Enhanced health information sharing between settings (i.e., between PCP and Behavioral Health provider; or BH provider and hospital)	O	O	O	O	O
d.	Improved care transitions through enhanced follow-up and referrals	O	O	O	O	O
d.	Increased electronic monitoring of patient health by providers/ staff	O	O	O	O	O

6. As part of the DSRIP Demonstration, PCPs and Behavioral Health providers were required to report data for the Comprehensive Core Standardized Assessment (CCSA) within the IDN. Were you aware of any of the components of the CCSA?
   - o Yes
   - o No (if no, skip to question 8)

(if yes) 7. To your knowledge, what challenges did IDNs encounter that might have contributed to under-reporting or not completing the CCSAs over the course of the Demonstration? (Choose all that apply)

- o Data elements within the CCSA measure were not being collected
- o Providers were unaware of the reporting requirement
- o Providers did not fully understand the CCSA measure
- o HIT infrastructure was not robust enough to support data collection points needed
- o There were too many data collection points for the CCSA
- o I don't know why there may have been under-reporting or non-completion of the CCSA
- o Other_____

8.	Using the following scale, please indicate your agreement with the following statements about the Demonstration's strategies designed to enhance HIT infrastructure in NH. **By the end of the Demonstration…**					
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
a.	The use of electronic health records for data collection was expanded.	O	O	O	O	O
b.	Connection and active use of Direct Messaging, DH-Connect, and EHR vendor inter-vendor connectivity occurred.	O	O	O	O	O
c.	The Shared Care Plan was successfully implemented.	O	O	O	O	O

9. Using the following scale, please rate whether you agree or disagree with the following statements.

The following factors directly influenced the implementation of DSRIP HIT strategies over the course of the Demonstration:

		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
a.	Patient needs	O	O	O	O	O
b.	State/ DHHS policies	O	O	O	O	O
c.	Organizational leadership within IDN	O	O	O	O	O
d.	Provider buy-in	O	O	O	O	O
e.	Adequate funding	O	O	O	O	O
f.	Input from HIT Task Force, Work Groups, Committees, etc.	O	O	O	O	O

Open Ended

This final section is designed to gather further details about successes and challenges in improving the HIT infrastructure development during the Demonstration. **Again, please think about the DSRIP Demonstration work while answering these questions.**

10.   What do you consider to be the greatest success(es) in HIT infrastructure development that resulted from the DSRIP Demonstration?

11.   Please briefly describe the biggest challenge(s) you faced while planning and/or implementing HIT systems over the course of the Demonstration. How did you overcome them?

12.   Over the course of the Demonstration, did your IDN experience any challenges specifically related to data sharing?
- o   Yes
- o   No (if no, skip to question 14)

13. [IF YES] Can you briefly describe any challenges related to data sharing your IDN experienced over the course of the Demonstration?

14.   What gaps, if any, still exist in the state's HIT ecosystem?

15.   In your opinion, what legal or policy issues were successfully addressed as part of the IDN HIT enhancement activities implemented as part of the Demonstration?

16.   Did the COVID-19 pandemic have an impact on HIT-related activities during the last year of the Demonstration (2020)?
- o   Yes
- o   No (if no, skip to question 18)

[IF YES] 17. Can you briefly describe how the pandemic impacted HIT-related activities at your IDN?

18.   Is there anything else you would like to share about the DSRIP efforts to enhance HIT infrastructure in New Hampshire?

Thank you for your participation; we appreciate your feedback.

2019 DSRIP Provider Survey

Demographics

1. Please identify the IDN affiliate for which you are responding:
   - IDN1 – Region 1 Integrated Delivery Network – Mary Hitchcock
   - IDN2 – Region 2 IDN – Concord Hospital
   - IDN3 – Greater Nashua IDN – Southern New Hampshire health
   - IDN4 – Network4Health – Catholic Medical Center
   - IDN5 – Region 5 IDN – Community Health Services Network
   - IDN6 – Region 6 – Strafford County
   - IDN7 – Region 7 IDN – North Country Health Consortium

2. Select your age group
   - 18-30
   - 31-39
   - 40-49
   - 50-59
   - 60 or older

3. To which gender do you most identify?
   - Female
   - Male
   - Non-binary / third gender
   - Prefer not to answer
   - Prefer to self-describe (3a: please self-describe)

4. What sector do you work in?
   - Health Care
   - Social Service
   - Government
   - Other (4a: please describe the sector you work in)

5. What is your current role within your organization?
   - MD
   - DO
   - RN
   - NP
   - Social Worker
   - Behavioral Health Care Provider
   - Medical Assistant
   - Administrative Staff
   - Director (e.g. Executive, Practice, Program)
   - Program Manager
   - Other (5a: please describe your current role)

6. What is your job title?

7. How many years have you worked in your position?
   - ○ 0-1
   - ○ 1-3
   - ○ 4-10
   - ○ More than 10

8. Do you have any certifications or licenses relevant to your current role? (list up to 3)

9. In relation to DSRIP, are you a part of a multidisciplinary care team?
   - ○ Yes
   - ○ No

Care Integration

10. Using the following scale, please rate whether the following strategies have been successful at promoting care integration under the DSRIP demonstration.

	Not at all successful	Not very successful	Neutral	Successful	Very Successful	Not applicable
a. Striving for greater flexibility in provider roles	○	○	○	○	○	○
b. Coordination of services across sectors	○	○	○	○	○	○
c. Policies to support information sharing between organizations	○	○	○	○	○	○
d. Supporting interdisciplinary and team-based work	○	○	○	○	○	○
e. Making organizational culture adjustments	○	○	○	○	○	○
f. Developing clinical guidelines for shared care	○	○	○	○	○	○
g. Improved mechanisms for follow-up after referral	○	○	○	○	○	○
h. Improving reimbursement policies	○	○	○	○	○	○
i. Transitioning to Alternative Payment Model	○	○	○	○	○	○
j. Increased health information sharing	○	○	○	○	○	○

between patients and providers		
k. increased health information sharing between settings	○ ○ ○ ○ ○ ○	

11. To your knowledge, have there been challenges associated with promoting care integration within your IDN?
    - ○ Yes
    - ○ No

12. Using the following scale, please rate whether you agree or disagree with the following statements:

Barriers to behavioral health care integration that I continue to experience/have experienced under the DSRIP demonstration include:						
	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
a. Insufficient budget or lack of financial resources	○	○	○	○	○	○
b. Difficulties with reimbursement	○	○	○	○	○	○
c. Insufficient training for providers	○	○	○	○	○	○
d. Time constraints on patient visits	○	○	○	○	○	○
e. Insufficient time for administrative tasks	○	○	○	○	○	○
f. Long appointment wait times for patients	○	○	○	○	○	○
g. Unmotivated providers and staff	○	○	○	○	○	○
h. High staff turnover rates	○	○	○	○	○	○
i. Limited relationships with community partners	○	○	○	○	○	○
j. Long physical distances between providers	○	○	○	○	○	○
k. Lack of collaboration between providers	○	○	○	○	○	○
l. lack of data sharing between providers, organizations, and community partners	○	○	○	○	○	○
m. Issues with databases and registries	○	○	○	○	○	○
n. Lack of policies and guidelines to support care integration	○	○	○	○	○	○

13. What do you think is the primary barrier to care integration in your IDN?

14. What do you think is the primary facilitator to care integration in your IDN?

15. Overall how would you rate the current level of care integration for patients with behavioral health conditions within your IDN?
    1 is "totally uncoordinated care" and 10 is "perfectly coordinated care"

1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○

Information Sharing

16. Using the following scale, please rate whether you agree or disagree with the following statements about the strategies implemented to facilitate information sharing as a part of the DSRIP demonstration.

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
a. Enhancements to HIT infrastructure improves communication across organizations	○	○	○	○	○	○
b. Systems deliver information reliably between providers	○	○	○	○	○	○
c. Use of HIT promotes timely communications to patients	○	○	○	○	○	○

17. Are there any additional factors that have facilitated information sharing as a part of the DSRIP Demonstration? If so, please describe.

18. To your knowledge, have there been challenges associated with enhancing mechanisms for information sharing under the DSRIP Demonstration?
   - ○ Yes
   - ○ No

19. Using the following scale, please rate whether you agree or disagree with the following statements.

Major barriers to information-sharing between providers that I continue to experience under the DSRIP demonstration include:						
	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
a. Lack of time	○	○	○	○	○	○
b. Perceived lack of benefit	○	○	○	○	○	○
c. Not knowing whom to contact	○	○	○	○	○	○
d. Uncommon goals	○	○	○	○	○	○
e. Lack of understanding about professional roles	○	○	○	○	○	○
f. Perceived medical hierarchy	○	○	○	○	○	○
g. Quality of discharge summary	○	○	○	○	○	○
h. Systems for delivering information reliably between providers	○	○	○	○	○	○

20. Are you currently experiencing any additional barriers around information-sharing between providers? If so, please describe.

21. Are you currently utilizing any of the following programs as part of the enhanced Health Information Technology (HIT) system under the DSRIP Demonstration? (Select all that apply.)
    ○ Shared Care Plan Software
    ○ Direct Secure Messaging Software
    ○ Notification Software

22. For programs checked in the previous question, please share your personal assessment on the ease of utilizing each software package.

	N/A	Very Easy	Easy	Neutral	Difficult	Very Difficult
a. Shared Care Plan Software	○	○	○	○	○	○
b. Direct Secure Messaging Software	○	○	○	○	○	○
c. Notification Software	○	○	○	○	○	○

23. As part of the DSRIP Demonstration, Primary Care and/or Behavioral Health provider partners must complete a Comprehensive Core Specialized Assessment (CCSA) for Medicaid patients age 12 and older. Are you completing the CCSA for these patients? (*The CCSA asks about demographics, medical history, substance use [including tobacco use and SBIRT screening]), housing, family & support services [e.g. home health aides, community services, legal services], education, employment, functional status [e.g. transportation assistance, housekeeping, meals], pediatric developmental screening, and depression screening.*)
    ○ Yes
    ○ No
    ○ Not applicable because I am not a primary care or behavioral health provider

24. To your knowledge, have there been challenges associated with implementing the CCSA?
    ○ Yes
    ○ No

25. What have been the challenges for providers in implementing CCSA? (Choose all that apply)
    ○ Data elements cannot be collected from patients due to time constraint
    ○ There are too many data collection points on the CCSAs
    ○ Providers do not fully understand the CCSA measure
    ○ Providers are unaware of the reporting requirement
    ○ Providers do not see the utility of the CCSA data
    ○ Current HIT infrastructure in not robust enough to support data collection points needed
    ○ Other (25a: please describe)

Resources

26. Please select the top three resources you believe providers need in order to implement evidence-based care for patients with behavioral health disorders. (choose only 3)

- - Less regulatory/reimbursement constraints
  - Simplified billing process
  - Additional training and education opportunities
  - Enhanced workforce capacity
  - Data-compatible systems to support information sharing
  - Organizational supports for providers
  - Peer supports for providers
  - Other (26a: please describe)

Open-Ended Questions

27. What has been your greatest success in relation to promoting care integration and/or information sharing over the past year?

28. What has been the primary challenge to promoting care integration and/or information sharing over the past year?

29. Is there anything else you would like to share about the DSRIP efforts?

2021 DSRIP Provider Survey

Demographics

1. Please identify the IDN affiliate for which you are responding:
   - IDN1 – Region 1 Integrated Delivery Network – Mary Hitchcock
   - IDN2 – Region 2 IDN – Concord Hospital
   - IDN3 – Greater Nashua IDN – Southern New Hampshire health
   - IDN4 – Network4Health – Catholic Medical Center
   - IDN5 – Region 5 IDN – Community Health Services Network
   - IDN6 – Region 6 – Strafford County
   - IDN7 – Region 7 IDN – North Country Health Consortium

2. Select your age group
   - 18-30
   - 31-39
   - 40-49
   - 50-59
   - 60 or older

3. To which gender do you most identify?
   - Female
   - Male
   - Non-binary / third gender
   - Prefer not to answer
   - Prefer to self-describe (3a: please self-describe)

4. What sector do you work in?
   - Health Care
   - Social Service
   - Government
   - Other (4a: please describe the sector you work in)

5. What is your current role within your organization?
   - MD
   - DO
   - RN
   - NP
   - Social Worker
   - Behavioral Health Care Provider
   - Medical Assistant
   - Administrative Staff
   - Director (e.g. Executive, Practice, Program)
   - Program Manager
   - Other (5a: please describe your current role)

6. What was your role during the DSRIP Demonstration? Please indicate your job role(s) between 2016 and 2020, and if you had any role specific to the Demonstration.

7. How many years have you worked in your position?
    - ○ 0-1
    - ○ 1-3
    - ○ 4-10
    - ○ More than 10

8. Do you have any certifications or licenses relevant to your current role? (list up to 3)

9. Thinking of your work as it related to and/or intersected with the DSRIP Demonstration, were you a part of a multidisciplinary care team?
    - ○ Yes
    - ○ No

Care Integration

10. Using the following scale, please rate whether the following strategies have been successful at promoting care integration under the DSRIP demonstration.
    (Select N/A if you are unaware of this strategy and/or due to your role, you are not able to assess its success at all.)

	Not at all successful	Not very successful	Neutral	Successful	Very Successful	N/A
a. Striving for greater flexibility in provider roles	○	○	○	○	○	○
b. Coordination of services across sectors	○	○	○	○	○	○
c. Policies to support information sharing between organizations	○	○	○	○	○	○
d. Supporting interdisciplinary and team-based work	○	○	○	○	○	○
e. Making organizational culture adjustments	○	○	○	○	○	○
f. Developing clinical guidelines for shared care	○	○	○	○	○	○
g. Improved mechanisms for follow-up after referral	○	○	○	○	○	○
h. Improving reimbursement policies	○	○	○	○	○	○
i. Transitioning to	○	○	○	○	○	○

Alternative Payment Model						
j. Increased health information sharing between patients and providers	○	○	○	○	○	○
k. increased health information sharing between settings	○	○	○	○	○	○

11. What do you think was the most successful strategy for increasing care integration in your IDN during the DSRIP Demonstration?

12. To your knowledge, have there been challenges associated with promoting care integration within your IDN?
    ○ Yes
    ○ No

13. Using the following scale, please rate whether you agree or disagree with the following statements:

Barriers to behavioral health care integration that I experienced under the DSRIP demonstration include:						
	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
a. Insufficient budget or lack of financial resources	○	○	○	○	○	○
b. Difficulties with reimbursement	○	○	○	○	○	○
c. Insufficient training for providers	○	○	○	○	○	○
d. Time constraints on patient visits	○	○	○	○	○	○
e. Insufficient time for administrative tasks	○	○	○	○	○	○
f. Long appointment wait times for patients	○	○	○	○	○	○
g. Unmotivated providers and staff	○	○	○	○	○	○
h. High staff turnover rates	○	○	○	○	○	○
i. Limited relationships with community partners	○	○	○	○	○	○
j. Long physical distances between providers	○	○	○	○	○	○
k. Lack of collaboration between providers	○	○	○	○	○	○
l. lack of data sharing between providers, organizations and	○	○	○	○	○	○

community partners

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
m. Issues with databases and registries	○	○	○	○	○	○
n. Lack of policies and guidelines to support care integration	○	○	○	○	○	○

14. What do you think was the biggest barrier to increasing or enhancing care integration in your IDN during the DSRIP Demonstration?

15. Overall, how would you rate the <u>current level</u> of care integration for patients with behavioral health conditions within your IDN?
1 being *totally uncoordinated care* and 10 being *perfectly coordinated care*

1	2	3	4	5	6	7	8	9	10
○	○	○	○	○	○	○	○	○	○

16. Are there activities or workflows to support care integration implemented under the DSRIP Demonstration that you continue to use in your practice?

    o   Yes (please specify):
    o   No

Information Sharing

17. Using the following scale, please rate whether you agree or disagree with the following statements about the strategies implemented to facilitate information sharing as a part of the DSRIP demonstration.

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
a. Enhancements to HIT infrastructure improves communication across organizations	○	○	○	○	○	○
b. Systems deliver information reliably between providers	○	○	○	○	○	○
c. Use of HIT promotes timely communications to patients	○	○	○	○	○	○

18. Were there any additional factors that helped facilitate information sharing that were implemented as a part of the DSRIP Demonstration? If so, please describe.

19. Did you experience any challenges and/or barriers around information sharing between providers that were not resolved during the DSRIP Demonstration?

- o Yes
- o No

20. Using the following scale, please rate whether you agree or disagree with the following statements.

Major barriers to information sharing between providers that were not resolved under the DSRIP Demonstration include:	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Unsure
a. Lack of time	○	○	○	○	○	○
b. Perceived lack of benefit	○	○	○	○	○	○
c. Not knowing whom to contact	○	○	○	○	○	○
d. Uncommon goals	○	○	○	○	○	○
e. Lack of understanding about professional roles	○	○	○	○	○	○
f. Perceived medical hierarchy	○	○	○	○	○	○
g. Quality of discharge summary	○	○	○	○	○	○
h. Systems for delivering information reliably between providers	○	○	○	○	○	○

21. Indicate below if you were or are using any of the following programs as part of the enhanced HIT system under the DSRIP Demonstration.

	Currently Using	No Longer Using	Never Used	N/A to my role
a. Shared Care Plan Software	○	○	○	○
b. Direct Secure Messaging Software	○	○	○	○
c. Event Notification Software	○	○	○	○

22. For programs checked in the previous question, please share your personal assessment on the ease of utilizing each software package.

	Very Difficult	Difficult	Neutral	Easy	Very Easy	N/A
a. Shared Care Plan Software	○	○	○	○	○	○
b. Direct Secure Messaging Software	○	○	○	○	○	○
c. Event Notification Software	○	○	○	○	○	○

23. As part of the DSRIP Demonstration, Primary Care and/or Behavioral Health provider partners must complete a Comprehensive Core Specialized Assessment (CCSA) for Medicaid patients age 12 and older. Did you complete the CCSA for these patients?

The CCSA asks about demographics, medical history, substance use (including tobacco use and SBIRT screening), housing, family & support services (e.g. home health aides, community services, legal services), education, employment, functional status (e.g. transportation assistance, housekeeping, meals), pediatric developmental screening, and depression screening.
- ○ Yes
- ○ No
- ○ Not applicable because I am not a primary care or behavioral health provider

24. To your knowledge, were there challenges associated with providers completing the CCSA?
- ○ Yes
- ○ No

25. What have been the challenges for providers in implementing CCSA? (Choose all that apply)
- ○ Data elements cannot be collected from patients due to time constraint
- ○ There are too many data collection points on the CCSAs
- ○ Providers do not fully understand the CCSA measure
- ○ Providers are unaware of the reporting requirement
- ○ Providers do not see the utility of the CCSA data
- ○ Current HIT infrastructure in not robust enough to support data collection points needed
- ○ Other (25a: please describe)

Resources

26. Please select the top three resources you believe providers need in order to implement evidence-based care for patients with behavioral health disorders. (choose only 3)
- ○ Less regulatory/reimbursement constraints
- ○ Simplified billing process
- ○ Additional training and education opportunities
- ○ Enhanced workforce capacity
- ○ Data-compatible systems to support information sharing
- ○ Organizational supports for providers
- ○ Peer supports for providers
- ○ Other (26a: please describe)

Open-Ended Questions

27. What was your greatest success in relation to promoting care integration and/or information sharing over the course of the DSRIP Demonstration (2016-2020)?

28. What was the primary challenge to promoting care integration and/or information sharing over the course of the DSRIP Demonstration (2016-2020)?

29. Did the COVID pandemic impact health care delivery over the past eighteen months?

- ○ Yes
- ○ No

30. How did the COVID pandemic impact health care delivery over the past eighteen months?

31. Did the COVID pandemic impact <u>care integration</u> over the past eighteen months?

   o Yes
   o No

32. How did the COVID pandemic impact <u>care integration</u> over the past eighteen months?

33. Is there anything else you would like to share about the DSRIP Demonstration?

2019, 2020 New Hampshire DSRIP Beneficiary Survey

> Please answer each question by marking the box to the left of your answer.
>
> You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:
>
> 1 [✓] Yes → If *Yes*, go to #1
> 2 [ ] No

Your Health Care in the Last 12 Months

These questions ask about **your own** health care. Do **not** include care you got when you stayed overnight in a hospital. Do **not** include the times you went for dental care visits.

1. In the last 12 months, did you have an illness, injury, or condition that **needed care right away** in a clinic, emergency room, or doctor's office?

   1 [ ] Yes
   2 [ ] No → If *No*, go to #3

2. In the last 12 months, when you **needed care right away**, how often did you get care as soon as you needed?

   1 [ ] Never
   2 [ ] Sometimes
   3 [ ] Usually
   4 [ ] Always

3. In the last 12 months, did you make any appointments for a **check-up or routine care** at a doctor's office or clinic?

   1 [ ] Yes
   2 [ ] No → If *No*, go to #5

4. In the last 12 months, how often did you get an appointment for a **check-up or routine care** at a doctor's office or clinic as soon as you needed?

   1 [ ] Never
   2 [ ] Sometimes
   3 [ ] Usually
   4 [ ] Always

5. In the last 12 months, **not** counting the times you went to an emergency room, how many times did you go to a doctor's office or clinic to get health care for yourself?

   1 [ ] None → If *None*, go to #8
   2 [ ] 1 time
   3 [ ] 2
   4 [ ] 3
   5 [ ] 4
   6 [ ] 5 to 9
   7 [ ] 10 or more times

6. Using any number from 0 to 10, where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate all your health care in the last 12 months?

   00 [ ] 0 Worst health care possible
   01 [ ] 1
   02 [ ] 2
   03 [ ] 3
   04 [ ] 4
   05 [ ] 5
   06 [ ] 6
   07 [ ] 7
   08 [ ] 8
   09 [ ] 9
   10 [ ] 10 Best health care possible

7. In the last 12 months, how often was it easy to get the care, tests, or treatment you needed?

   1 [ ] Never
   2 [ ] Sometimes
   3 [ ] Usually
   4 [ ] Always

Your Personal Doctor

8. A personal doctor is the one you would see if you need a check-up, want advice about a health problem, or get sick or hurt. Do you have a personal doctor?

    1☐ Yes
    2☐ No → If *No*, go to #26 on Page 3

9. In the last 12 months, how many times did you visit your personal doctor to get care for yourself?

    1☐ None → If *None*, go to #26
    2☐ 1 time
    3☐ 2
    4☐ 3
    5☐ 4
    6☐ 5 to 9
    7☐ 10 or more times

10. In the last 12 months, when you visited your personal doctor, how often did he or she have your medical records or other information about your care?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

11. In the last 12 months, did your personal doctor order a blood test, x-ray, or other test for you?

    1☐ Yes
    2☐ No → If *No*, go to #14

12. In the last 12 months, when your personal doctor ordered a blood test, x-ray, or other test for you, how often did someone from your personal doctor's office follow up to give you those results?

    1☐ Never → If *Never*, go to #14
    2☐ Sometimes
    3☐ Usually
    4☐ Always

13. In the last 12 months, when your personal doctor ordered a blood test, x-ray, or other test for you, how often did you get those results as soon as you needed them?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

14. Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and other doctors who specialize in one area of health care. In the last 12 months, did you see a specialist for a particular health problem?

    1☐ Yes
    2☐ No → If *No*, go to #16

15. In the last 12 months, how often did your personal doctor seem informed and up-to-date about the care you got from specialists?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

16. In the last 12 months, did you make any appointments to see a specialist?

    1☐ Yes
    2☐ No → If *No*, go to #18

17. In the last 12 months, how often did you get an appointment to see a specialist as soon as you needed?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

18. In the last 12 months, did you take any prescription medicine?

    1☐ Yes
    2☐ No → If *No*, go to #20

19. In the last 12 months, how often did you and someone from your personal doctor's office talk about all the prescription medicines you were taking?

   1☐ Never
   2☐ Sometimes
   3☐ Usually
   4☐ Always

20. In the last 12 months, did you get care from more than one kind of health care provider or use more than one kind of health care service?

   1☐ Yes
   2☐ No → **If *No*, go to #23**

21. In the last 12 months, did you need help from anyone in your personal doctor's office to manage your care among these different providers and services?

   1☐ Yes
   2☐ No → **If *No*, go to #23**

22. In the last 12 months, how often **did you get the help that you needed** from your personal doctor's office to manage your care among these different providers and services?

   1☐ Never
   2☐ Sometimes
   3☐ Usually
   4☐ Always

23. In the last 12 months, did anyone in your personal doctor's office ask you if there was a period of time when you felt sad, empty or depressed?

   1☐ Yes
   2☐ No

24. In the last 12 months, did you and anyone in your personal doctor's office talk about things in your life that worry you or cause you stress?

   1☐ Yes
   2☐ No

25. In the last 12 months, did you and anyone in your personal doctor's office talk about a personal problem, family problem, alcohol use, drug use, or a mental or emotional illness?

   1☐ Yes
   2☐ No

About You

26. In general, how would you rate your overall health?

   1☐ Excellent
   2☐ Very good
   3☐ Good
   4☐ Fair
   5☐ Poor

27. In general, how would you rate your overall **mental or emotional** health?

   1☐ Excellent
   2☐ Very good
   3☐ Good
   4☐ Fair
   5☐ Poor

28. What is your age?

   1☐ 18 to 24
   2☐ 25 to 34
   3☐ 35 to 44
   4☐ 45 to 54
   5☐ 55 to 64
   6☐ 65 to 74
   7☐ 75 or older

29. Are you male or female?

   1☐ Male
   2☐ Female

30. What is the highest grade or level of school that you have completed?

   1☐ 8th grade or less
   2☐ Some high school, but did not graduate
   3☐ High school graduate or GED
   4☐ Some college or 2-year degree
   5☐ 4-year college graduate
   6☐ More than 4-year college degree

31. Are you of Hispanic or Latino origin or descent?

   1☐ Yes, Hispanic or Latino
   2☐ No, not Hispanic or Latino

32. What is your race? Mark one or more.

   1☐ White
   2☐ Black or African American
   3☐ Asian
   4☐ Native Hawaiian or Other Pacific Islander
   5☐ American Indian or Alaska Native
   6☐ Other

33. Did someone help you complete this survey?

   1☐ Yes
   2☐ No → If *No,* Go to END

34. How did that person help you? Mark one or more.

   1☐ Read the questions to me
   2☐ Wrote down the answers I gave
   3☐ Answered the questions for me
   4☐ Translated the questions into my language
   5☐ Helped in some other way

END: *Thank you! Please return the completed survey in the postage-paid envelope to:*

Office of Survey Research
University of Massachusetts Medical School
333 South Street
Shrewsbury, MA 01545-9803

If you have any questions, please call this toll-free number: 1-888-368-7157.

2021 New Hampshire DSRIP Beneficiary Survey

> Please answer each question by marking the box to the left of your answer.
>
> You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:
>
> 1 ☑ Yes → If *Yes*, go to #1
> 2 ☐ No

Your Health Care in the Last 12 Months

These questions ask about **your own** health care. Do **not** include care you got when you stayed overnight in a hospital. Do **not** include the times you went for dental care visits.

*Note: Because of the COVID-19 pandemic, many doctors' offices and clinics offered phone or video visits in place of in-person visits. For the following questions, please think of **phone, video and in-person visits**.*

1. In the last 12 months, did you have an illness, injury, or condition that **needed care right away** in a clinic, emergency room, or doctor's office?

   1 ☐ Yes
   2 ☐ No → If *No*, go to #3

2. In the last 12 months, when you **needed care right away**, how often did you get care as soon as you needed?

   1 ☐ Never
   2 ☐ Sometimes
   3 ☐ Usually
   4 ☐ Always

3. In the last 12 months, did you make any appointments for a **check-up or routine care** at a doctor's office or clinic? *Please include any appointments for phone, video, or in-person visits.*

   1 ☐ Yes
   2 ☐ No → If *No*, go to #5

4. In the last 12 months, how often did you get an appointment for a **check-up or routine care** at a doctor's office or clinic as soon as you needed?

   1 ☐ Never
   2 ☐ Sometimes
   3 ☐ Usually
   4 ☐ Always

5. In the last 12 months, not counting the times you went to an emergency room, how many times did you get health care for yourself from a doctor's office or clinic? *Please include phone, video and in-person visits.*

   1 ☐ None → If *None*, go to #8 on Page 2
   2 ☐ 1 time
   3 ☐ 2
   4 ☐ 3
   5 ☐ 4
   6 ☐ 5 to 9
   7 ☐ 10 or more times

6. Using any number from 0 to 10, where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate all your health care in the last 12 months?

   00 ☐ 0 Worst health care possible
   01 ☐ 1
   02 ☐ 2
   03 ☐ 3
   04 ☐ 4
   05 ☐ 5
   06 ☐ 6
   07 ☐ 7
   08 ☐ 8
   09 ☐ 9
   10 ☐ 10 Best health care possible

7. In the last 12 months, how often was it easy to get the care, tests, or treatment you needed?

   1☐ Never
   2☐ Sometimes
   3☐ Usually
   4☐ Always

Your Personal Doctor

8. A personal doctor is the one you would see if you need a check-up, want advice about a health problem, or get sick or hurt. Do you have a personal doctor?

   1☐ Yes
   2☐ No → **If *No*, go to #26 on Page 3**

9. In the last 12 months, how many times did you get care for yourself from your personal doctor? *Please include phone, video and in-person visits.*

   1☐ None → **If *None*, go to #26**
   2☐ 1 time
   3☐ 2
   4☐ 3
   5☐ 4
   6☐ 5 to 9
   7☐ 10 or more times

10. In the last 12 months, when you visited your personal doctor, how often did he or she have your medical records or other information about your care?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

11. In the last 12 months, did your personal doctor order a blood test, x-ray, or other test for you?

    1☐ Yes
    2☐ No → **If *No*, go to #14**

12. In the last 12 months, when your personal doctor ordered a blood test, x-ray, or other test for you, how often did someone from your personal doctor's office follow up to give you those results?

    1☐ Never → **If *Never*, go to #14**
    2☐ Sometimes
    3☐ Usually
    4☐ Always

13. In the last 12 months, when your personal doctor ordered a blood test, x-ray, or other test for you, how often did you get those results as soon as you needed them?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

14. Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and other doctors who specialize in one area of health care. In the last 12 months, did you get care from a specialist for a particular health problem? *Please include phone, video and in-person visits.*

    1☐ Yes
    2☐ No → **If *No*, go to #16**

15. In the last 12 months, how often did your personal doctor seem informed and up-to-date about the care you got from specialists?

    1☐ Never
    2☐ Sometimes
    3☐ Usually
    4☐ Always

16. In the last 12 months, did you make any appointments to see a specialist? *Please include any appointments for phone, video, or in-person visits.*

    1☐ Yes
    2☐ No → **If *No,* go to #18**

17. In the last 12 months, how often did you get an appointment to see a specialist as soon as you needed?

    1 ☐ Never
    2 ☐ Sometimes
    3 ☐ Usually
    4 ☐ Always

18. In the last 12 months, did you take any prescription medicine?

    1 ☐ Yes
    2 ☐ No → **If *No*, go to #20 on Page 3**

19. In the last 12 months, how often did you and someone from your personal doctor's office talk about all the prescription medicines you were taking?

    1 ☐ Never
    2 ☐ Sometimes
    3 ☐ Usually
    4 ☐ Always

20. In the last 12 months, did you get care from more than one kind of health care provider or use more than one kind of health care service?

    1 ☐ Yes
    2 ☐ No → **If *No*, go to #23**

21. In the last 12 months, did you need help from anyone in your personal doctor's office to manage your care among these different providers and services?

    1 ☐ Yes
    2 ☐ No → **If *No*, go to #23**

22. In the last 12 months, how often **did you get the help that you needed** from your personal doctor's office to manage your care among these different providers and services?

    1 ☐ Never
    2 ☐ Sometimes
    3 ☐ Usually
    4 ☐ Always

23. In the last 12 months, did anyone in your personal doctor's office ask you if there was a period of time when you felt sad, empty or depressed?

    1 ☐ Yes
    2 ☐ No

24. In the last 12 months, did you and anyone in your personal doctor's office talk about things in your life that worry you or cause you stress?

    1 ☐ Yes
    2 ☐ No

25. In the last 12 months, did you and anyone in your personal doctor's office talk about a personal problem, family problem, alcohol use, drug use, or a mental or emotional illness?

    1 ☐ Yes
    2 ☐ No

About You

26. In general, how would you rate your overall health?

    1 ☐ Excellent
    2 ☐ Very good
    3 ☐ Good
    4 ☐ Fair
    5 ☐ Poor

27. In general, how would you rate your overall **mental or emotional** health?

    1 ☐ Excellent
    2 ☐ Very good
    3 ☐ Good
    4 ☐ Fair
    5 ☐ Poor

28. What is your age?

    1 ☐ 18 to 24
    2 ☐ 25 to 34
    3 ☐ 35 to 44
    4 ☐ 45 to 54
    5 ☐ 55 to 64

6 ☐ 65 to 74

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Shrewsbury, MA 01545-9803

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APPENDIX

C. 2019 & 2021 Interview Guides

2019 IDN Administrator Interview Guide

1. Could you briefly describe your role as the IDN administrator?

    PROBE: Does it differ from other IDNs?

Now, we want to ask you about your general experience with implementing the IDN in your region.

2. In your opinion, what is the IDN doing well at this point in the demonstration?

    PROBE: If you had to pick your number one success so far, what would it be?

3. Given your experience, what is the IDN not doing well (if anything)?

    PROBE: What has been the most significant challenge that you have encountered?

Now we're going to talk about how the DSRIP demonstration has impacted care integration. When we talk about care integration, we are talking about integrating physical health care, behavioral health services including substance use disorder (SUD) treatment, and community or social services.

4. What changes related to care integration have been implemented under the DSRIP demonstration, either at the practice-level or across providers within your region?

    PROBE: CCSA (Comprehensive Core Standardized Assessment), addressing social determinants of health, using multidisciplinary care teams, closed loop referrals

5. What does the multidisciplinary care team look like in your IDN (e.g. structure, who is included)?

6. How have multidisciplinary care teams changed the way you work in your region, if at all?

7. How is your IDN using technology to promote care integration across disciplines as well as sectors (e.g., health care, government, legal, policy, finance)?

    PROBE: Monitor population health, identify target populations

8. What have been successful strategies for facilitating or improving collaboration across IDNs?

    PROBE: Learning collaborative, resources, infrastructure, outreach activities, policy

Next, we'd like to ask you a few questions about strategies you've implemented to build capacity throughout your region to support the demonstration.

9. How has your IDN been able to build capacity to support increased access to mental health treatment and substance use disorder (SUD) treatment?

    PROBE: Successes and challenges with maintaining or growing workforce/ infrastructure; strategies to overcome challenges

10. What is your IDN doing differently than what you were doing 5 years ago prior to the implementation of the Demonstration?

    PROBE: How have strategies you implemented in your region had to evolve over the course of the Demonstration?

11. How are you utilizing HIT strategies to improve capacity within your IDN?

    PROBE: Health care delivery and integration; information sharing; care integration and delivery

Our next set of questions will focus on transitioning to and implementing Alternative Payment Models (APMs).

12. At what stage in transitioning to alternative payment models is your IDN in?

    PROBE: Challenges or successes related to implementing APMs

13. As the IDN administrator, what are you doing to support the transition to alternative payment models in your region?

    PROBE: Working with MCOs (Managed Care Organizations) to implement APMs
    PROBE: Supporting community partners' transition to APMs

We would like to finish our discussion by asking you a few questions on your plans for program sustainability.

14. What strategies or practices related to care integration do you see as contributing to the sustainability of this project?

    PROBE: Example of a promising practice

15. From what you have learned thus far, do you have any recommendations for how to expand / spread successful strategies (promising practices) within and across IDNs?

16. Is there anything else you would like to share with me that I might have missed?

2021 IDN Administrator Interview Guide

1. Could you briefly describe your role as the IDN administrator, and if/how you are transitioning out of this role post-Demonstration?

Implementation Challenges & Strategies

Now, we want to ask you about your general experience with the IDN during DSRIP.

2. In your opinion, what went well during the DSRIP Demonstration?

   PROBE: If you had to pick your number one success, what would it be?

3. What was the most significant challenge that you encountered during the Demonstration?

   PROBE: Were you able to overcome this challenge?
   IF YES: What strategies did you use to successfully overcome this challenge?
   IF NO: Were there specific barriers that made finding a solution difficult?

Care Integration

Now we're going to talk about impacts the DSRIP demonstration has had on care integration. When we talk about care integration, we are talking about integrating physical health care, behavioral health services including substance use disorder (SUD) treatment, and community or social services.

4. What <u>sustainable</u> changes related to care integration were implemented under the DSRIP Demonstration, either at the practice level or across providers within your region?

5. In your opinion, were there any strategies or changes that were implemented as part of the Demonstration to support care integration that will <u>not</u> be sustainable?

   IF YES: Can you briefly describe these changes and why you believe they are not sustainable?

6. Did multidisciplinary care teams change the way work was/is done and support a greater level of care integration within your IDN during the Demonstration?

   IF YES: Can you briefly describe how using multidisciplinary teams enhanced care integration efforts?
   IF NO: Can you briefly describe why you do not believe using multidisciplinary teams had an impact on care integration within your IDN?

7. How did your IDN use technology to promote care integration across disciplines as well as sectors (e.g., health care, government, legal, policy, finance)?

   PROBE: Monitor population health, identify target populations

Capacity Building

Next, we would like to ask you a few questions about strategies implemented to build capacity throughout your region.

8. What were the most successful strategies for advancing or improving collaboration across IDNs as well as other providers and/or organizations in your region?

9. How was your IDN able to build capacity to support increased access to mental health treatment and substance use disorder (SUD) treatment?

   PROBE: Successes and challenges with maintaining or growing workforce/infrastructure; strategies to overcome challenges.

Alternative Payment Models

Our next set of questions will focus on transitioning to and implementing Alternative Payment Models (APMs) as required by the Demonstration goals.

10. In your opinion, how well did transitioning to APMs work during this Demonstration?

    PROBE: What was your greatest success related to implementing APMs during the Demonstration?

    PROBE: What was the biggest challenge you faced while working to transition to APMs during the Demonstration?

Transformation

We would like to finish our discussion by asking you a few questions on the transformative impacts of this Demonstration.

11. Can you provide an example of something being done now by the providers in your region as an outcome of DSRIP that was not being done 5 years ago prior to the implementation of the Demonstration?

    PROBE: Do you see this continuing?

12. What strategies or practices related to this Demonstration do you think will contribute to sustainability post-Demonstration?

    PROBE: Relationships built, permanent HIT infrastructure/ practice changes, increased provider capacity, example of a promising practice

13. I'd like to give you an opportunity to discuss what you feel was the most transformative part of this Demonstration, whether for beneficiaries, providers, systems, or all of the above. What are your thoughts?

COVID/ Additional Information

Before we wrap up today, we wanted to give you an opportunity to say more about the impact of the pandemic on your work during the demonstration, if we haven't discussed it yet.

14. We'd like to hear about the pandemic's effect on the last year of the Demonstration. What would have been different in 2020 had there not been a global pandemic?

    PROBE: Challenges brought about by COVID-19 pandemic

15. Is there anything else you would like to share with me that I might have missed?

2019 HIT Stakeholder Interview Guide

1. How have you been involved in the HIT work related to the NH DSRIP Demonstration?

2. What organizational characteristics of your IDN had the most influence, positive or negative, on the ability to implement HIT strategies at your IDN?

   PROBE: membership characteristics, leadership support, partner organizations

3. What has been your experience with...?
   a. Shared Care Plan Software
   b. Direct Secure Messaging Software
   c. Event Notification Services Software
   d. Quality Reporting / Securely Capturing Data

4. What strategies to improve HIT infrastructure have you been most successful in implementing? Why?

5. Have you encountered difficulties in developing and implementing strategies to enhance HIT under the DSRIP Demonstration?
   IF YES: How did you overcome challenges or barriers?
   PROBE: provider reluctance, contract processes, data sharing, etc.

6. How have you collaborated with HIT staff at other IDNs to share best practices and resolve issues?

7. To your knowledge, how have improvements to the HIT system supported...?
   a. Health care delivery
      PROBE: Successful/challenging strategies
   b. Information sharing
      PROBE: Successful/challenging strategies
   c. Care integration and delivery
      PROBE: Successful/challenging strategies
   d. Care management and coordination for persons with behavioral health diagnosis/diagnoses
      PROBE: Successful/challenging strategies

8. How are community-specific needs being addressed through improvements to your IDN's HIT system?

   PROBE: Health care delivery and integration, information sharing, care integration and delivery, care management and coordination for the behavioral health population

9. To your knowledge, how are DSRIP HIT strategies addressing the integration of behavioral health care with medical care?

   PROBE: Policy, legal, financial, business operations

10. Thinking about enhancements to the HIT system for DSRIP and usability, what is going well as far as utilizing the new system(s) in place?

11. What factors, both positive and negative, may be influencing utilization of the enhanced system?

    PROBE: What are some of the barriers to using the enhanced HIT system? Are those barriers different among IDNs and providers?

12. What are some notable successes to expanding the state's HIT infrastructure?

13. What are some notable challenges to expanding the state's HIT infrastructure?

14. Are there gaps in the state's Health IT system?

15. (IF YES TO #14)
    a. Can you briefly discuss current gaps in the Health IT system?
    b. In your opinion, what improvements to the state's Health IT system are still needed to reduce these gaps?

16. Is there anything else you would like to tell me that I might have missed?

2021 HIT Stakeholder Interview Guide

Overview

1. Can you describe your role working on implementing HIT enhancements as part of the DSRIP Demonstration - and how your role has or has not changed now that the Demonstration has ended?

   PROBE: Are you doing any work towards sustaining any of the changes that were made?

Enhanced Health IT Implementation Experience

We are going to start with your experience specific to your IDN and the DSRIP Demonstration.

2. In your opinion, what strategies implemented as part of the Demonstration had the greatest impact on enhancing the state's HIT infrastructure? Why?

3. What do you think were the biggest challenges to enhancing the state's HIT infrastructure under the DSRIP Demonstration?

   PROBE: What strategies did you use to overcome those challenges?

4. Where there barriers to enhancing the state's HIT infrastructure that you were not able to address over the course of the demonstration?

   PROBE: provider reluctance, contract processes, legality of data sharing, policies / regulations etc.

Impact of Enhanced Health IT Structure

Now we'd like to ask a few questions about the impact of the DSRIP HIT implementation.

5. To your knowledge, how did improvements made under the Demonstration to the HIT system impact:
   a. Health care delivery?
        PROBE: Successful/challenging strategies
   b. Information sharing?
        PROBE: Successful/challenging strategies
   c. Care integration and delivery?
        PROBE: Successful/challenging strategies
   d. Care management and coordination for persons with behavioral health diagnosis/diagnoses?
        PROBE: Successful/challenging strategies

6. In your opinion, what community-specific needs were addressed through improvements made during the Demonstration to your IDN's HIT system?

   PROBE: Were certain needs addressed more successfully than others? (information sharing, delivery of health care etc)

7. Are these changes sustainable? Why/Why not?

8. Did the DSRIP HIT work improve the integration of behavioral health care with medical care for persons with behavioral health diagnosis/diagnoses?

   IF YES: How so/ can you provide an example? Is this sustainable?

Utilization of Enhanced Health IT

These next questions are about your opinions on the usability of the enhanced system, and how sustainable the DSRIP HIT strategies are going forward.

9. Thinking about the enhancements to the HIT system implemented as part of DSRIP, what components have been utilized the most?
   PROBE: event notification, direct secure messaging, shared care plan, data reporting

10. What factors, both positive and negative, influenced utilization of the enhanced system?
    PROBE:
    - What are some of the ongoing barriers to using the enhanced IT system?
    - Do you think these those barriers differ among IDNs and providers?

11. What HIT system enhancements do you believe will be sustained now that the Demonstration has been completed? Why?

12. Are there HIT system enhancements that you believe will <u>not</u> be sustained because the Demonstration has been completed?

    IF YES: What are those systems and what are factors that you believe will impact sustainability?

Statewide HIT Infrastructure

We'd like to hear about how the DSRIP Demonstration has impacted the state's HIT infrastructure.

13. What HIT infrastructure enhancement implemented as part of the Demonstration had the greatest impact on enhancing the state's HIT infrastructure?

14. Are there still gaps in the state's Health IT system?
    IF YES:
    a. Can you briefly discuss current gaps in the Health IT system?
    b. In your opinion, what improvements to the state's Health IT system are still needed to reduce these gaps?

COVID/Additional Information

Wrapping up, we'd like to ask about the impact of the pandemic on HIT-related DSRIP work in 2020 and get your final thoughts.

15. How did COVID-19 pandemic impact the HIT activities in the last year of the Demonstration?

16. Is there anything else you would like to tell me that I might have missed?

2019 Provider Interview Guide

1. In general, what has been your experience with the DSRIP demonstration so far? PROBE: working with the IDN, NH DHHS.

2. What challenges have you encountered implementing the DSRIP Demonstration strategies?

3. Could you briefly describe how you managed and/or overcome these challenges?

Thank you for that information. Now, we will talk about how you think the DSRIP demonstration has impacted care integration for individuals receiving services.

4. To your knowledge, has the DSRIP demonstration changed integration and communication between providers who deliver physical health care, behavioral health care treatment, and community services?
   IF YES:
   a. Can you briefly describe these changes?
   b. What strategies, if any, have been successful in promoting care integration for individuals diagnosed with behavioral health disorders?
   PROBE: resources, infrastructure, outreach activities, policy, workflows

5. Over the past twelve months, have you observed any improvements in care integration for individuals with behavioral health diagnosis/es? If so, can you provide examples?

6. Have you experienced any barriers to improving care integration for individuals with behavioral health disorders?

   PROBE: information-sharing between providers

7. Do you have any recommendations for what providers need in order to improve care integration?

   PROBE: Resources, infrastructure, outreach activities, policy, workflows

We're now going to talk about the usability and utility of the enhanced Health Information Technology (HIT) system.

8. Do you utilize any of the following programs:
   a. Shared Care Plan Software
   b. Direct Secure Messaging Software
   c. Notification Services Software
   d. Quality Reporting/ Securely Captured Data
   IF YES: What has been your experience with the enhanced HIT system?
   IF NO: If you are not using any of these programs, what have been some of the barriers to using the enhanced health IT system?

9. Have you noticed any gaps within the current HIT infrastructure?
   IF YES:
   a. If so, what are the gaps?

   b.   Do you have any recommendations to address these gaps?

10. Are the HIT improvements implemented by IDN addressing your specific needs?

   PROBE: information sharing, care integration and delivery, care management and integration for BH population

11. Are you engaging your patients through outreach activities as a result of your participation in the DSRIP demonstration?
   IF YES:
      a.   What have been the most effective outreach activities?
      b.   What outreach activities have been least effective?

12. How have changes-- if any- to care integration and delivery impacted your patients' care?

   PROBE: seamless care delivery, warm hand offs or referrals, improved patient access to services.

13. What resources do providers need in order to implement evidenced-based care for behavioral health?

   PROBE: examples of evidence-based care: cognitive behavioral therapy, family therapy, 12 step programs, medication-assisted treatment, etc.

14. How has the transition to Alternative Payment Models (APMs) been going?

15. As a provider, where have you experienced challenges and successes in entering into APMs with the IDN?

   PROBE: impact on workload

16. Is there anything else you would like to tell me that I might have missed?

2021 Provider Interview Guide

Role Overview

1. Can you briefly explain your experience with the DSRIP Demonstration?
    PROBE: committee work, working with the IDN, NH DHHS, improving workflows in clinical settings, etc.

DSRIP Successes, Challenges, and Impact

We'd like to talk about the successes, challenges, and impacts of the DSRIP Demonstration, from the provider perspective.

2. What do you consider the greatest success of the DSRIP Demonstration?
    PROBE: is this success sustainable?

3. What was the greatest challenge encountered implementing the DSRIP Demonstration strategies?
    PROBE: how challenges were managed or overcome

4. Can you provide an example of something being done now by the providers in your region as a result of the DSRIP Demonstration that was not being done 5 years ago prior to the implementation of the Demonstration?
    PROBE: Do you see this continuing? Why or why not?

Practice and Provider Experiences of Care Integration

Thank you for that information. Now, we will talk about how you think the DSRIP Demonstration has affected care integration at the provider level.

5. To your knowledge, did the DSRIP Demonstration change integration and communication between providers who deliver physical health care, behavioral health care treatment, and community services in the state?

   IF YES:
    a. Can you briefly describe these changes?
    b. What strategies were most successful in promoting care integration for individuals diagnosed with behavioral health disorders?
        a. PROBE: how were DSRIP resources used to increase: infrastructure, outreach activities, policy changes, workflows

6. Were there barriers to improving care integration for individuals with behavioral health disorders during the DSRIP Demonstration?

    IF YES,

    PROBE: information-sharing between providers/ data use agreements, communications between providers, communications with state

Beneficiary Experience

Now we'd like to hear your perception on beneficiary experience, and how the Demonstration has improved or impacted patient care from your point of view.

7. In your opinion, did the Demonstration's strategies improve the delivery of care to your patients?

    If YES: what strategies do you think were most successful in improving care delivery?

    - PROBE: seamless delivery from patient perspective, warm hand offs or referrals, improved patient access to services through increased provider communications

8. Over the course of the Demonstration, did you personally observe any improvements in care integration for individuals with behavioral health diagnosis/es?
    IF YES:
    Can you provide examples?
    Do you feel these improvements were a result of the DSRIP Demonstration?

9. Thinking about the beneficiary or patient experience, what do you think was the most sustainable change brought forth by this Demonstration?
    PROBE: more access to social services, improved continuum of care, seamless care delivery

Usability and Utility of Enhanced Health Information Technology (HIT) System

We're now going to talk about the usability and utility of the enhanced Health Information Technology (HIT) system which was one of the tenets of the DSRIP Demonstration.

10. Do you or did you utilize any of the following programs, either now or during the DSRIP Demonstration:
    a. Shared Care Plan software
    b. Direct Secure Messaging software
    c. Notification Services software
    d. Quality Reporting / Securely Capturing Data? *(population management, and/or metrics)*

    IF YES: What was your experience with the enhanced HIT system?
    IF NO: If you are not using any of these programs, why not? (*note: probe to see if they never used, and why/why not vs. if they used during Demonstration but have stopped using post-Demonstration, & why*)

11. Do you believe that HIT improvements implemented by the IDN helped address needs around information sharing and assisting with care integration and delivery?

    - PROBE: care management specific to BH population

12. What HIT enhancements from the DSRIP Demonstration will be sustainable? (If you are unsure, what HIT enhancements *should* be made sustainable going forward, and why?)

APMs

We have a question about Alternative Payment Models (APMs), which were planned as part of the DSRIP Demonstration. In your role, you may or may not have been involved with APMs.

13. Were you aware of the work done to transition to APMs during the Demonstration?
    IF YES: Did it affect your role as a provider? How?

COVID/ Additional Information

Before we wrap up today, we want to give you an opportunity to say more about the impact of the COVID-19 pandemic on your work during the Demonstration.

14. We'd like to hear about the pandemic's effects on the last year of the Demonstration. What would have been different in 2020 had there not been a global pandemic?
    PROBE: Challenges brought about by COVID-19 pandemic, opportunities created, etc.

15. Is there anything else you would like to tell me about your experience with the DSRIP Demonstration that I did not ask about?

2019 Beneficiary Interview Guide

The first few questions focus on getting your point of view about the services you've been receiving over the past 12 months from your primary care provider for medical care.

1. Within the last twelve months, have you had any difficulty or challenges in getting the help or treatment you need from your primary care provider (PCP)?

2. Is your primary care provider aware of your mental health needs and/or substance use disorder?
   IF YES: Does your primary care provider communicate with your other providers?
   PROBE: How do you know this is happening?

3. Thinking back in the last year, when you see your PCP or any of your behavioral health providers, have they talked to you about the following?
   IF YES, PROBE: who asked, did they make referral?
   a. Your medical history
   b. Tobacco use and/or substance use
   c. Housing: where you live, and/or if you live in a safe place
   d. Employment
   e. Education
   f. Depression and/or anxiety; feelings of despair\
   g. Help you might need for day-to-day activities such as transportation, preparing meals, housekeeping, getting dressed, and personal hygiene
   h. Available support services for you and your family such as home health aides, community services, legal services

The next few questions focus on your experience in receiving mental health treatment and/or substance use disorder services over the past 12 months.

4. How were you referred to treatment for your mental health needs and/or substance use disorder?
   PROBE: Warm transfer (someone called for you)
   PROBE: Were you given a name/number?

5. Where do you go to get the help or treatment you need for your mental health needs and/or substance use disorder?
   PROBE: Is it your PCP or elsewhere?

6. What has been your experience in getting the help or treatment you need for your mental health needs and/or substance use disorder in the past twelve months? PROBE: Location, hours of availability, wait times or wait lists for appointment, not meeting with qualified staff, provider not accepting new patients

7. How do you feel about the quality of the care you receive for your mental health needs and/or substance use disorder?

8. Have you been seeing a provider for mental health services and/or substance use disorder for over a year?
   IF YES: Have you noticed any changes in the way that you have received services over time?

PROBE: For example, in the last year, have you been referred to a new provider or started seeing someone new, or has someone helped you organize your health care?

9. If you have been receiving services for your mental health needs and/or a substance use disorder for more than twelve months, have you noticed any improvement(s) in your ability to get help or treatment over time?
PROBE: Can you contact your provider/ provider's office any time of day/after hours care/ contact via email or phone. Timing of shift in care.

The next question will focus on your use of technology when communicating with your provider(s).

10. Does your primary care / medical provider use the internet, such as a web portal, as a way of communicating with you?
PROBE: Examples of other solutions
IF YES: Do you use these resources? What do you use these resources for? PROBE: Scheduling or cancelling appointments, getting lab results, getting referrals to other providers, communicating with your provider.
IF YES: How have they impacted your communications with your primary care provider and the management of your health?
IF NO: Would this be something you would use if available to you?

Before we finish up today, I want to ask if you have any recommendations on how health care organizations and/or providers might improve care for individuals who need treatment for mental health issues and/or substance use disorders. I especially want you to think about how providers can listen to, inform and involve patients in their own care.

11. Do you have any suggestions on how the services you receive for your mental health treatment and/or substance use disorder could be improved?

12. Is there anything else you would like to tell me about the services you receive for your mental health treatment and/or substance use disorder?

13. Is there anything else you would like to tell me that I might have missed?

2021 Beneficiary Interview Guide

Access to Care

Because of the COVID-19 pandemic, many doctors' offices and clinics offered phone or video visits in place of in-person visits. For the following questions, please think of phone, video and in-person visits.

1. In the <u>last 12 months</u>, have you received care from a provider?
WHAT I MEAN BY PROVIDER IS MEDICAL HEALTH, BEHAVIORAL HEALTH, CASE MANAGER, COUNSELOR, or SOCIAL WORKER

   (IF YES) What types of providers and for what?

2. Of the providers you've mentioned, who do you consider to be your primary provider?
WHAT I MEAN BY PRIMARY PROVIDER IS WHO YOU SEE THE MOST FREQUENTLY. (if named, get provider type)

*The next few questions focus on getting your point of view about the services you've been receiving over the <u>last 12 months</u> from a **medical care provider** for your **physical health**.*

3. In the <u>last 12 months</u>, have you had any difficulty or challenges in getting the help or treatment you need from your medical care provider?

4. Do you have any mental health or substance use service needs that are being addressed by any of the providers you mentioned earlier in our conversation?

   IF NO- GO TO Q5.

   (IF YES) Is your <u>medical care doctor or provider</u> aware of your mental health and/or substance use needs?

   (IF YES) Does your medical doctor/provider communicate with your other providers?

   PROBES: How do you know this communication is happening?

5. Thinking back in the <u>last 12 months</u>, when you have received care from your medical care provider or any of your behavioral health providers, have they talked to you about the following? (ASK EVERY BULLET) *(IF YES, probe: who asked, did they make a referral?)*

   ➢ Your medical history
   ➢ Tobacco use and/or substance use
   ➢ Housing: where you live, and/or if you live in a safe place
   ➢ Employment
   ➢ Education
   ➢ Depression and/or anxiety; feelings of despair
   ➢ Help you might need for day-to-day activities such as transportation, preparing meals, housekeeping, getting dressed, and personal hygiene
   ➢ Available support services for you and your family such as home health aides, community services, legal services

Experience of Accessing Care

IF "YES" TO QUESTION 4, ASK THESE QUESTIONS:

The next few questions focus on your experience in receiving mental health and/or substance use services over the <u>past 12 months</u>.

6. How were you referred to (who told you about) treatment for your mental health and/or substance use needs?

   PROBE: Warm transfer (someone called for you)

   PROBE: Were you given a name/number?

7. Where do you go to get the help or treatment you need for your mental health and/or substance use needs?

   PROBE: Is it your PCP or elsewhere?

8. What has been your experience in getting the help or treatment you need for your mental health and/or substance use needs in the past 12 months?

   PROBE: Telehealth, location, hours of availability, wait times or wait lists for appointment, not meeting with qualified staff, provider not accepting new patients

IF "NO" TO QUESTION 4, ASK THESE QUESTIONS: (no intro language)

9. If you needed to seek treatment for mental health and/or substance use needs, where would you go?

   PROBE: Who would you ask for help? Would it be your medical provider or elsewhere?

10. If you needed to seek treatment for mental health and/or substance use needs, would it be hard to get the help you need?

    PROBE: Why do you think that?

Patient Experiences of Care

These next few questions are about your thoughts on the quality of care you are receiving from your health care providers.

11. How do you feel about the quality of the care you have received in the <u>past 12 months</u>? Think about care that works for you, and if you're receiving it.

    PROBE: Mental health, physical health, SUD

12. In the <u>past 12 months</u>, have you noticed any changes in the way that you have received services?

    PROBE: For example, in the last year, have you been referred to a new provider or started seeing someone new, or has someone helped you manage your health care?

    PROBE: Mental health, physical health, SUD

13. In the <u>past 12 months</u>, have you noticed any improvement(s) in your ability to get help or treatment?

   PROBE: Can you contact your provider/ provider's office any time of day/ after-hours care/ contact via email or phone. Timing of shift in care.

   PROBE: Mental health, physical health, SUD

Patient Experiences of Care: Health IT Ecosystem

The next question will focus on your use of technology when communicating with your provider(s).

14. In the <u>past 12 months</u> have you used the telephone or internet to get care from your providers?
   IF YES: Is this more than you normally would have before the pandemic? Has it been helpful and why? Has it been challenging and why?

15. Do any of your providers use the internet, such as a web portal, as a way of communicating with you?

   PROBE: Which providers?

   (IF YES) Do you use these resources? How do you use them?

      PROBE: Participating in appointments, scheduling or cancelling appointments, getting lab results, getting referrals to other providers, communicating with your provider.

   (IF YES) How have they changed how you interact with your primary care provider and the management of your health?

   (IF NO) Would this be something you would use if available to you?

Improve Patient-Centered Care

I want to ask if you have any suggestions on how health care organizations and/or providers might improve care for individuals who need treatment for physical health, mental health and/or substance use needs. I ask that you think about how providers can listen to, inform, and involve patients in their own care.

16. Do you have any suggestions on how the services you receive for physical, mental health and/or substance use needs could be improved?

   PROBE: Communication, time to ask providers the questions you have, shared decision making, the provider asking your opinions and listening to your concerns.

COVID/ Wrap Up

17. Before we finish, I wanted to give you an opportunity to talk about receiving your health care over the last year during the COVID-19 pandemic. Is there anything else you would like to tell me about getting health care over the last year that may not have come up in our discussion today?

APPENDIX

D. Qualitative Codebook

IDN Administrator Interview Codebook

Parent Node	Child Node	Definition
Access to Care		The ease with which an individual can obtain needed medical services
Cost of Care		To providers: the expense incurred to deliver health care services to patients To payers: the amount they pay to providers for services rendered To patients: the amount they pay out-of-pocket for health care services
Infrastructure		The resources, staffing and workforce, HIT, alternate payment models needed/desired for Demonstration and positive health outcomes
Integration of Care		The systematic coordination of general and behavioral healthcare, characterized by a high degree of collaboration and communication among health professionals
Population Health		The health outcomes of a group of individuals, including the distribution of such outcomes within the group
Quality of Care		The extent to which health care services provided to individuals and patient populations improve desired health outcomes. "In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered." (WHO)
Service Utilization		Quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis
APM Transition		Training, education, or communication with partners about the alternative payment model (APM)
	APM Status	Status of community partners implementing an APM
	Other	APM transition information that does not fall under the other child nodes
Building Infrastructure		Any mention of infrastructure building that supports services provided, services used, how services are provided (i.e., integration of physical and behavioral health, care coordination)
	Care Coordination	Ways care has been coordinated for individuals with mental health needs and/or SUD and the impact on members
	Expanded Services/Service Utilization	Service use and/or expansion of services (i.e., care coordination for SUD, providing services in new locations, new treatment programs)
	Integrating Physical and Behavioral Health	Ways that physical and behavioral health are being integrated (i.e., facilitation of relationships between primary care and behavioral health partners, new and existing programs, impact on members)

Parent Node	Child Node	Definition
	Other	Building infrastructure information that does not fall under the other child nodes
Challenges		Challenges identified regarding implementation of the IDN and work with community partners
	Late Start	
	Other	Challenges that do not fall under the other child nodes
Collaboration		Partnerships and relationship building activities between IDNs, between IDNs and partners, and between partner organization
	IDN and Partner Collaborations	Demonstration of how the IDN and community partners collaborate (or not) on IDN goals (i.e., examples of collaboration such as development of universal consent and authorization forms)
	Other	Collaboration information that does not fall under the other child nodes
	Partner Collaborations	Demonstration of how community partners collaborate and interact with each other (i.e., communication, communication, examples of collaboration)
	Relationships with Other IDNs	Interaction with other IDNs
Community Projects		Any mention of the IDN community projects
Context		Factors that have influenced the implementation of DSRIP (IDN and/or community partners) (i.e., implementation of EMR during launch of DSRIP)
	Existing Models	The extent to which IDNs are implementing DSRIP in the context of existing care models and/or are building off these models to implement DSRIP (i.e., Collaborative Care Model)
	Other	Context information that does not fall under the other child nodes
	State-level Policies and Laws	State-level policies and laws that may influence DSRIP implementation (i.e., data sharing, reimbursement rate for providers, confidentiality issues)
COVID		Discussion related to COVID-19 pandemic (March 2020-current)
	Barriers	Barriers to care, access, quality etc. as related to COVID-19 pandemic
	Facilitators	Facilitators to care, access, quality etc. as related to COVID-19 pandemic
Education and Training		Education and training for partners on government requirements and guidance (i.e., APM)
Establishing New Workflows		Mention of new workflows within or across organizations to support care coordination and care transitions (i.e., development/ implementation of comprehensive core standardized assessment, development of the shared care plan)
Governance Structure		How the IDN is structured in relationship to the community partners

Parent Node	Child Node	Definition
	IDN Staffing	Staffing structure of IDN (i.e., organization location and role of IDN lead, other IDN staff)
	Operations Team/Board	Description of the IDN operations team and/or board
	Other	Governance structure information that does not fall under the other child nodes
HIT		Any mention of HIT-related issues for the IDN and/or partners related to care coordination, integration, or patient monitoring
	Data sharing	Ways that data sharing is occurring to support care coordination, integration, or patient monitoring (i.e., event notification allows community providers to monitor patient panels, direct secure messaging supports secure communication, no queue portal allows for secure messaging, quality aggregation service to calculate and report clinical quality measures, partner hesitation in sharing data)
	Enhanced HIT System	Description of the enhanced HIT system to support delivery system and payment reform
	Other	HIT information that does not fall under the other child nodes
Involvement of the State		Relationship of the IDN and the State (i.e. communications, interactions, perceptions)
Quotes		Text from an individual that succinctly and powerfully captures a thought, an issue, or a success related to the provider experience within the DSRIP implementation
Stakeholder engagement		Building relationships with community partners
	IDN and Community Partner Relationships	Status of relationship between IDN and community partners (i.e., communication, understanding of goals/expectations, level of commitment and engagement)
	Other	Stakeholder engagement information that does not fall under the other child nodes
	Partner Characteristics	Size of organizations (i.e., large hospitals, small organizations), staffing issues at partner organizations, prior experience with APMs
State Guidance		Guidance or clarity from the state about DSRIP-related issues such as legal concerns about sharing data.
Successes		Positive feedback about implementation of the IDN and work with community partners
Sustainability		IDN program sustainability - financial support and structure for DSRIP-related activities (i.e., payments to providers, sustainability after the waiver ends)
Unsure		Relevant and pertinent information that does not easily fall under one of the nodes listed

Parent Node	Child Node	Definition
Workforce		Any mention of workforce issues in the state/regionally (i.e., primary care providers, behavioral and mental health providers, SUD providers)
	Capacity Building	Ways to support workforce development (i.e., provider trainings, advanced licensure, contracting for quality coaches, cross training for PCPs around behavioral health, incentives)
	Other	Workforce information that does not fall under the other child nodes
	Provider Supply	Any mention of provider availability (i.e., new providers to support service use and/or expanded services, lack of providers, challenges in retaining providers, recruitment)
Workload of Demonstration		IDN experience of the NH DSRIP in terms of workload and activities to implement the initiative (IDN planning, implementation, operation)
	Coordinating Community Partners	IDN experience with coordinating meetings and commitment of partners to attend
	Data Reporting	
	Funding	Funding for IDN activities (including IDN staffing)
	IDN Operations	Administrative activities of the IDN: Reporting requirements (i.e., learning curve, time involved); Contracting with community partners; Hiring staff; Time involved for IDN administration
	Other	Workload information that does not fall under the other child nodes

HIT Stakeholder Interview Codebook

Parent Node	Child Node	Definition
Access to Care		The ease with which an individual can obtain needed medical services.
Cost of Care		To providers: the expense incurred to deliver health care services to patients. To payers: the amount they pay to providers for services rendered. To patients: the amount they pay out-of-pocket for health care services.
Infrastructure		The resources, staffing and workforce, HIT, alternate payment models needed/desired for Demonstration and positive health outcomes
Integration of Care		The systematic coordination of general and behavioral healthcare, characterized by a high degree of collaboration and communication among health professionals
Population Health		The health outcomes of a group of individuals, including the distribution of such outcomes within the group
Quality of Care		The extent to which health care services provided to individuals and patient populations improve desired health outcomes. "In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered." (WHO)
Service Utilization		Quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis.
Challenges		Things that have not worked well in the project or that have hindered progress
	Clinical/IT divide	The disconnection between the clinical teams and the IT teams
	Legal Issues/Concerns	Uncertainty and/or concerns about certain laws and regulations impacting NH DSRIP implementation of strategies i.e., 42CFR Part 2 (confidentiality of SUD patient records)
	Other	Challenges that do not fall under the other child nodes
	Similar Overlapping Systems	Various requirements for different projects that overlap but are not the same
Collaboration with IDNs		The ways in which the IDNs work with each other on HIT-related issues
COVID		Discussion related to COVID-19 pandemic (March 2020-current).
	Barriers	Barriers to care, access, quality etc. as related to COVID-19 pandemic
	Facilitators	Facilitators to care, access, quality etc. as related to COVID-19 pandemic

Parent Node	Child Node	Definition
Direct Secure Messaging		Information related to direct secure messaging (DSM) system in which providers communicate with patients and each other. This includes the software components and organizations' use of the technology
	Implementation	Status of implementation of the Direct Secure Messaging by partner organizations
	Other	Information related to the Direct Secure Messaging that does not fall under the other child nodes
	Utilization	Level of utilization of the Direct Secure Messaging by partner organizations
Event Notification		Information related to the use and adoption of the Events Notification System (ENS), which is used amongst organizations. This includes the CMT software component
	Implementation	Status of implementation of the Event Notification System by partner organizations
	Other	Information related to the Event Notification System that does not fall under the other child nodes
	Utilization	Level of utilization of the Event Notification System by partner organizations
HIT Approaches with Partners		How the IDN has worked with partners on HIT projects and issues
	One-on-one Support	Examples of HIT IDN staff providing support on an individual basis, including one-on-one support with a partner organization
	Other	HIT Approaches with Partners that do not fall under the other child nodes
	Training/Education	Ways that the IDN has provided training/education to partner organization, including topics covered (i.e., legal requirements related to sharing data, importance of data collected/reported)
HIT Lead Involvement		How interviewee was involved in DSRIP
Improvements in Care		Ways in which clinical care has advanced
	Care Integration	Ways that patient care has been integrated or coordinated between organizations/providers (i.e., behavioral health and medical care)
	Community-specific Needs	Ways in which the program is able to address the individual and specific needs of the community they serve
	Healthcare Delivery	Ways in which the HIT has improved the care that patients receive and that clinicians can offer
	Information Sharing	Ways in which the information on a patient has been shared between stakeholders including providers and community service organizations within the IDN
	Other	Improvements in care that do not fall under the other child nodes

Parent Node	Child Node	Definition
Interoperability		Enables secure exchange of electronic health information within systems without special effort on the part of the user
Organizational Characteristics		Internal IDN Context including partner organizations
	Buy-In	Level of engagement/buy-in of partner organizations
	EMR-related	Factors related to Electronic Medical Records
	HIT Capacity	The level of information technology expertise within partner organizations, including HIT knowledge, HIT staffing, and HIT resources (i.e., software)
	Leadership	Leadership qualities (positive/negative) of IDN and partnership organizations, including level of buy-in
	Organizational Size	Organizational size of partner organizations (i.e., small agency, large hospital, etc.)
	Other	Organizational characteristics that do not fall under the other child nodes
	Paper-based	Methods for communicating that are paper based, such as mail, paper records, fax, etc.
	Partner Ownership/Merger	Partner organization ownership/relationship with other organizations i.e., some facilities joining together
	Rural/Urban	The geographic characteristics of the IDN's populations that are served (i.e. densely populated or sparsely populated and spread out)
Quality Reporting/Data		Information related to the reporting requirements for the program (e.g., quality measures). This could include the data aggregator, MaHec
	Implementation	Status of implementation of Quality Reporting/Data by partner organizations
	Measures Definition	The way the clinical quality measures are defined and specified in the requirements
	Needs Assessment	Experience related to implementing the needs assessment as part of NH DSRIP
	Other	Quality Reporting/Data information that does not fall under the other child nodes
	Utilization	Level of utilization of the Quality Reporting/Data by partner organizations
Quotes		Text from an individual that succinctly and powerfully captures a thought, an issue, or a success related to the IDN's HIT implementation or utilization
Shared Care Plan		Information related to the creation and adoption of the Shared Care Plan, including the CMT software component
	Implementation	Status of implementation of the Shared Care Plan by partner organizations
	Other	Information related to the Shared Care Plan that does not fall under the other child nodes
	Utilization	Level of utilization of the Shared Care Plan by partner

Parent Node	Child Node	Definition
		organizations
State Guidance		Guidance or clarity from the state about DSRIP-related issues such as legal concerns about sharing data.
State HIT		The information technology and infrastructure of the State
	Expansion Challenges	Things that have impeded the expansion of the State's HIT system
	Expansion Successes	Ways in which the State has been able to expand their HIT infrastructure
	Gaps in State's HIT System	Inconsistencies or lack of HIT infrastructure/support at the State level
	Other	State HIT-related items that do not fall under the other child notes
Successes		Things that have worked well in the project
Sustainability		IDN program sustainability - financial support and structure for DSRIP-related activities (i.e. payments to providers, sustainability after the waiver ends)
Unsure		Relevant and pertinent information that does not easily fall under one of the nodes listed

Provider Stakeholder Interview Codebook

Parent Node	Child Node	Definition
Access to Care		The ease with which an individual can obtain needed medical services.
Cost of Care		To providers: the expense incurred to deliver health care services to patients. To payers: the amount they pay to providers for services rendered. To patients: the amount they pay out-of-pocket for health care services.
Infrastructure		The resources, staffing and workforce, HIT, alternate payment models needed/desired for Demonstration and positive health outcomes
Integration of Care		The systematic coordination of general and behavioral healthcare, characterized by a high degree of collaboration and communication among health professionals
Population Health		The health outcomes of a group of individuals, including the distribution of such outcomes within the group
Quality of Care		The extent to which health care services provided to individuals and patient populations improve desired health outcomes. "In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered." (WHO)
Service Utilization		Quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis.
APM Transition		Training, education, or communication with partners about the alternative payment model (APM)
Challenges		Challenges identified regarding implementation of the IDN and work with community partners
Collaboration_Providers		Partnerships, communication, and relationship building activities between providers and across agencies (includes warm hand-offs, referrals, etc.)
Comprehensive Assessment		
Context		Information regarding the provider's role within IDN, their background, further clarification on their personal and professional experiences
COVID		Discussion related to COVID-19 pandemic (March 2020-current).
	Barriers	Barriers to care, access, quality etc. as related to COVID-19 pandemic
	Facilitators	Facilitators to care, access, quality etc. as related to COVID-19 pandemic

Parent Node	Child Node	Definition
HIT		Any mention of HIT-related issues for the IDN and/or partners related to care coordination, integration, or patient monitoring
	Other	HIT information that does not fall under the other child nodes
	Barriers to Using the Enhanced System	Challenges associated with the HIT software implemented as a part of the IDN. For example, EHR systems.
	Direct Secure Messaging	Information related to direct secure messaging (DSM) system in which providers communicate with patients and each other. This includes the software components and organizations' use of the technology
	Event Notification	Information related to the use and adoption of the Events Notification System (ENS), which is used amongst organizations. This includes the CMT software component
	Gaps in the Current HIT System	Provider opinions on where HIT system can improve, whether system wide or statewide. Include recommendations here.
	Securely Capturing Data/Reporting	Information related to the reporting requirements for the program (e.g. quality measures). This could include the data aggregator, MaHec
	Shared Care Planning	Information related to the adoption of the Shared Care Plan, including the CMT software component
	Telehealth	Receiving or providing services via internet or telephone (ie, in lieu of in-person visit with provider)
Patient Engagement		Providers doing outreach activities and communicating with their patients
Quotes		Text from an individual that succinctly and powerfully captures a thought, an issue, or a success related to the provider experience within the DSRIP implementation.
Resources for Providers		Concrete tools for providers such as training, education, software (also code software to HIT node)
State or IDN Guidance		Guidance or clarity from the state and/or IDN about DSRIP-related issues such as legal concerns about sharing data, how to implement DSRIP goals, etc.
Successes		Positive feedback about implementation of the IDN and work with community partners
Sustainability		Information on what is sustainable post-Demonstration, what isn't, why/ why not
Unsure		Relevant and pertinent information that does not easily fall under one of the nodes listed
Workflows		
Workforce		Any mention of workforce issues in the state/regionally (i.e. primary care providers, behavioral and mental health providers, SUD providers)
	Other	Workforce information that does not fall under the other child nodes

Parent Node	Child Node	Definition
	Capacity Building	Ways to support workforce development (i.e. provider trainings, advanced licensure, contracting for quality coaches, cross training for PCPs around behavioral health, incentives)
	Provider Supply	Any mention of provider availability (i.e. new providers to support service use and/or expanded services, lack of providers, challenges in retaining providers, recruitment)

Beneficiary Interview Codebook

Parent Node	Child Node	Definition
Access to Care		The ease with which an individual can obtain needed medical services.
Cost of Care	MH/SUD	The ease with which an individual can obtain needed medical services for mental health and/or SUD services.
	Physical	The ease with which an individual can obtain needed medical services for physical health.
Cost of Care		To providers: the expense incurred to deliver health care services to patients. To payers: the amount they pay to providers for services rendered. To patients: the amount they pay out-of-pocket for health care services.
Infrastructure		The resources, staffing and workforce, HIT, alternate payment models needed/desired for Demonstration and positive health outcomes
Integration of Care		The systematic coordination of general and behavioral healthcare, characterized by a high degree of collaboration and communication among health professionals
	Changes_MH/SUD	Changes in BH care as it relates to integration with other aspects of health care, over the last 12 months
	Changes_Physical	Changes in collaboration/ communication between physical care and BH care in last 12 months
	No Changes	No reported changes from interviewee re: care integration in the last 12 months
Population Health		The health outcomes of a group of individuals, including the distribution of such outcomes within the group
Quality of Care		The extent to which health care services provided to individuals and patient populations improve desired health outcomes. "In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered." (WHO)
Service Utilization		Quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis.
Barriers to Care		Difficulties in receiving quality health care services in a timely manner, for reasons such as lack of providers, proximity to care, confusing systems, expense etc.
CCSA Screening		Comprehensive Core Standardized Assessment, a screening of patients that is a requirement under DSRIP; answers beyond tallying Y/N if they have been asked about the components within CCSA.
COVID		Discussion related to COVID-19 pandemic (March 2020-current).

Parent Node	Child Node	Definition
	Barriers	Barriers to care, access, quality etc. as related to COVID-19 pandemic
	Facilitators	Facilitators to care, access, quality etc. as related to COVID-19 pandemic
HIT		If & how interviewee utilizes technology (patient portal, etc.) to communicate with providers and health system and stay informed and involved in health care
Identified Primary Provider		Refers to the provider type that the interviewee identified as primary for purposes of this interview
Provider Last 12 months		All interviewees had to respond positively to seeing a provider in last 12 months; child nodes delineate provider types.
	Identified Primary Provider	Refers to the provider type that the interviewee identified as primary for purposes of this interview
	Provider Type	Types of provider(s) that interviewee has seen over the last 12 months
Quotes		Text from an individual that succinctly and powerfully captures a thought, an issue, or a success related to the provider experience within the DSRIP implementation.
Recommendations/ Patient-Centered Care		Interviewee recommendations on how to improve or enhance patient-centered care
Referrals		How/when/who referred; experiences w/ referrals
Source of Help/Treatment		Where patient goes if they need treatment or help with any type of medical care
	Hypothetical	Interviewee ideas on what they would do if they need to seek care in the future
	Real Experience	Experiences of interviewee in finding care they need
Tally: no self-reported current MH/SUD		Tracking how many interviewees self-reported no current MH/SUD diagnoses
Unsure		Relevant and pertinent information that does not easily fall under one of the nodes listed

APPENDIX

E. Summary of Changes from CMS Approved Evaluation Plan

Deviations from CMS Approved Plan

Time Line Changes

Substantial changes to the original CMS-approved Evaluation Plan projected timeline have occurred. Work plans and data collection timelines were significantly revised to reflect the CMS Interim and Final Summative Report deadlines, as stated in New Hampshire's STC for the Independent Evaluator.

Changes Due to COVID-19 Pandemic in 2020, Demonstration Final Year

In November 2021, NH DHHS received CMS guidance to hold the quantitative findings from the final Demonstration Year (DY 5, CY 2020) separate from the other post-Demonstration years due to the preliminary analysis showing that the public health emergency may have had a significant impact on utilization rates (lower), particularly for physical health metrics of interest that were included in the evaluation plan, impacting trends in the data over time. Discussing a separate data point within the report is a significant change from the evaluation plan and one the Independent Evaluator tried to balance while showing pre/post findings.

Furthermore, data collection was delayed into 2021 and protocols and surveys were updated to both accommodate and gather data on the impacts the pandemic had on the Demonstration's final year and its stakeholders.

Hypotheses Removed from Interim Report

As indicated in the Changes to Measures table below, three measures removed from the evaluation were the single measure under one hypothesis each; consequently removing their corresponding hypothesis. The hypotheses removed are:

Hypothesis 1.7: Rate of Medicaid beneficiaries waiting for inpatient psychiatric care will decrease over the course of the Demonstration regardless of IDN, geographic location, or market area.

Hypothesis 1.9: Average wait times for outpatient appointments at community mental health centers will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.

Hypothesis 1.10: The number of referrals and follow-up plans from primary care and other non- psychiatric providers to appropriate services will increase during the Demonstration regardless of IDN, geographic location, or market area.

Changes to Measures

The following table indicates which measures were updated from the CMS approved Evaluation Plan.

Table E1. Changes to Measures			
Measure ID	Measure Name	Change	Note
1.1.12	Cervical Cancer Screening	Data Source	Because of long look back period preceding claims data availability, using NH BRFSS data
1.1.13	Breast Cancer Screening	Specification Updated	Identifies two eligible populations: with and without BH disorders
1.1.14	Colorectal Cancer Screening	Data Source	Because of long look back period preceding claims data availability, using NH BRFSS data
1.1.15	USPSTF: Cholesterol Screening	Removed	Cholesterol screening no longer a recommendation of the USPSTF
1.1.16	Adolescent Well-Care Visit	Specification Updated	Identifies two eligible populations: with and without BH disorders
1.1.17	Smoking/Tobacco Cessation Counseling	Removed	Data not available; data will be gathered from BRFSS in measure 1.3.2 Improvements in Population Health
1.1.18	Emergency Department (ED) Visits	Specification Updated	Identifies two eligible populations: with and without BH disorders
1.1.19	Potentially Preventable Emergency Department (ED) Visits	Specification Updated	Identifies two eligible populations: with and without BH disorders
1.1.20	Opioid Dosage for People Without Cancer	Removed/ Replaced	Removed and replaced with HEDIS UOD measure: Use of Opioids at High Dosage. This replacement measure, similar to others in the evaluation, Identifies two eligible populations: with and without BH disorders
1.2.2	Access to Care (Smoking/Tobacco Cessation)	Removed	Tobacco/Smoking Cessation- see measure 1.1.17- data not available; data gathered from BRFSS in measure 1.3.2 Improvements in Population Health
1.2.3	Annual Primary Care Visit (Adult and 12-19)	Specification Updated	Identifies two eligible populations: with and without BH disorders
1.2.5	Substance Use Treatment Services	Specification Updated	Changed to adhere to HEDIS specification of AOD as denominator
1.2.6	Adolescent Well care Visit	Moved	Moved from Hypothesis 1.1 (quality of care) to Hypothesis 1.2 (access to care)
1.2.6	Adolescent Well-Care Visit	Specification Updated	Identifies two eligible populations: with and without BH disorders
1.5.1	Hospital Re-Admission for Any Cause	Specification Updated	No risk adjustment applies because there was no risk adjustment for Medicaid prior to 2018
1.7.1	Rate of Individuals Waiting for Inpatient Psychiatric	Removed	The EHR data to calculate this measure was unavailable. **This removes Hypothesis**

Table E1. Changes to Measures			
Measure ID	Measure Name	Change	Note
	Care		1.7 from the evaluation, as it was its only measure.
1.9.1	Community Mental Health Center (CMHC) Referral or New Patient Appointment	Removed	Removed measure at NH's request; CMCH EMR data does not go back to the 2013 baseline period, and large number of dually eligible individuals and services that are not billed make data unreliable. **This removes Hypothesis 1.9 from the evaluation as it was its only measure**
1.10.1	Referrals and Follow-Up Plans from Primary care and other Non-Psychiatric Providers to Appropriate Services	Removed	Unable to gather this data from claims or EHR to calculate this measure. **This removes Hypothesis 1.10 from the evaluation, as it was its only measure.**
2.1.2	Transmission of Records	Removed	The EHR data to calculate this measure was unavailable.
2.1.3	Alcohol/Drug Abuse Screening and Follow-Up	Removed	The EHR data to calculate this measure was unavailable.
2.1.4	Substance Use and Depression Screening	Removed	The EHR data to calculate this measure was unavailable.
2.1.11	Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)	Specification Updated	Use HEDIS measure FUM
2.1.14	Alcohol/Drug Dependency Emergency Department (ED) Visit Follow-Up (30 days)	Specification Updated	Use HEDIS measure FUA

Changes to the Comparison Group Methodology

Given that the providers and provider relationships created by the IDN structures did not exist during the pre-Demonstration period, and the ability to recreate these provider structures would be burdensomely difficult (if not impossible), IDN attribution in the pre-periods 2013 and 2014 were based on geographic location. IDN attribution for 2015-2020 uses the NH beneficiary attribution files provided by NH DHHS. Additionally, this methodology was applied to members that were not enrolled as of the last day of a calendar year, as these members were also not assigned in the attribution process. Identifying beneficiaries for the pre-Demonstration and for those in the post demonstration periods (2015-2020) who were not identified in the attribution file period with a behavioral health disorder applied the same claims-based algorithm used by NH DHHS in their attribution algorithm.

Three criteria are used:

    1.   Beneficiaries receiving care at community mental health centers, or

2.   Beneficiaries with a primary diagnosis code for a behavioral health disorder as defined by NH DHHS; or

3.   Beneficiaries with a prescription for a therapeutic medication for a behavioral health disorder as defined by NH DHHS.

Members who meet one or more of the eligibility criteria were considered to have a behavioral health disorder and considered to be part of the study group. The analysis also included a comparison group for falsification tests that was comprised of Beneficiaries who have had no behavioral health disorders, as this population was not expected to be impacted by the Demonstration. Similar to the study group, these individuals were identified through claims and eligibility data. The specific eligibility criteria are outlined in more detail below in Table E2.

Table E2: Claims-based Behavioral Health Disorder Criteria for Identification of 2013 and 2014 Comparison Group

Criteria 1: Beneficiaries receiving care at a community mental health center

Members who are indicated as eligible recipients of behavioral health care received at Community Mental Health Centers (CMHC). Members meeting this criterion were identified based on the assignment of one of the following codes in the Medicaid Management Information System (MMIS; Medicaid claims and encounter data).

Codes are based on CMHC submission to Managed Care Organizations or paid fee-for-service claims with the following modifiers:

- U1 - Severe/Persistent Mental Illness (SPMI)
- U2 - Severe Mental Illness (SMI)
- U5 - Low Utilizer of Mental Health Services
- U6 - Serious Emotionally Disturbed Child
- U7 - Emotion Disturb Child/Interagency

Criteria 2:Beneficiaries with a primary diagnosis code for a behavioral health disorder as defined by NH DHHS

Members who have a Medicaid claim on which the primary diagnosis code is for a behavioral health disorder. The following ICD-10 codes identify members with mental health disorders:

- F20-F29 Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
- F30-F34 Mood (affective) disorders
- F41-F44 Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders
- F53 Puerperal psychosis
- F60 Specific personality disorders
- F63 Impulse disorders
- F68 Other disorders of adult personality and behavior
- F84.0 Autistic disorder
- F84.9 Pervasive developmental disorders, unspecified
- F90 Attention-deficit hyperactivity disorders
- F91 Conduct disorders
- F93 Emotional disorders with onset specific to childhood
- F94 Disorders of social functioning with onset specific to childhood and adolescence

The following ICD-10 codes identify members with SUDs:

- F10 Alcohol related disorders (excluded: F10.21 Alcohol dependence,
- F15 Other stimulant related disorders (excluded: F15.21 Other stimulant

- in remission)
- F11 Opioid related disorders (excluded: F11.21 Opioid dependence, in remission)
- F12 Cannabis related disorders (excluded F12.21 Cannabis dependence, in remission)
- F13 Sedative, hypnotic, or anxiolytic related disorders (excluded: F13.21 Sedative, hypnotic, or anxiolytic dependence, in remission)
- F14 Cocaine related disorders (excluded: F14.21 Cocaine dependence, in remission)

- dependence, in remission)
- F16 Hallucinogen related disorders (excluded: F16.21 Hallucinogen dependence, in remission)
- F18 Inhalant related disorders (excluded: F18.21 Inhalant dependence, in remission)
- F19 Other psychoactive substance related disorders (excluded: F19.21 Other psychoactive substance dependence, in remission)
- F55 Abuse of non-psychoactive substances
- K29.2 Alcoholic gastritis
- K70.1 Alcoholic hepatitis

Criteria 3: Beneficiaries with a prescription for a therapeutic medication for a behavioral health disorder as defined by NH DHHS.

Members who have a Medicaid pharmacy claim for a behavioral health disorder. The following specific therapeutic class codes identify these members:

- H2D Barbiturates
- H2E Non-Barbiturates, Sedative-Hypnotic
- H2F Anti-Anxiety Drugs
- H2G Anti-Psychotics, Phenothiazines
- H2H Monoamine Oxidase (MAO) Inhibitors
- H2M Bipolar Disorder Drugs
- H2S Serotonin Specific Reuptake Inhibitor(SSRI)
- H2U Tricyclic Antidepressant & Related Non-Selective Reuptake Inhibitor
- H2V Anti-Narcolepsy/Anti-Hyperkinesis
- H2W Tricyclic Antidepressant/Phenothiazine Combination
- H2X Tricyclic Antidepressant/Benzodiazepine Combination
- H7B Alpha-2 Receptor Antagonists Antidepressant
- H7C Serotonin-Norepinephrine Reuptake-Inhibitor (SNRIs)
- H7D Norepinephrine & Dopamine Reuptake Inhibitors (NDRIs)
- H7E Serotonin-2 Antagonist/Reuptake Inhibitor (SARIs)
- H7J Monoamine Oxidase (Mao) Inhibitors -Non-Selective & Irreversible
- H7O Antipsychotic, Dopamine

- H7X Antipsychotic, Atypical, D 2 Partial Agonist/Serotonin Mix
- H7Y Treatment For Attention Deficit Hyperactivity Disorder, Norepinephrine Reuptake Inhibitor Type
- H7Z Serotonin Specific Reuptake Inhibitor (SSRIs)/Antipsychotic, Atypical, Dopamine & Serotonin Antagonist Combination
- H8B Hypnotics, Melatonin Receptor Agonists
- H8D Hypnotics, Melatonin & Herb Combination
- H8F Hypnotics, Melatonin Combination Other
- H8G Sedative-Hypnotic, Non-Barbiturate/Dietary Supplement
- H8H Serotonin-2 Antagonist, Reuptake Inhibitor/Dietary Supplement Combinations
- H8I Selective Serotonin Reuptake Inhibitor (SSRIs)/Dietary Supplement Combinations
- H8M Treatment For Attention Deficit Hyperactivity Disorder -Selective Alpha-2 Adrenergic Receptor Agonist
- H8P Serotonin Specific Reuptake Inhibitor (SSRI) & 5Ht1A Partial Agonist Antidepressant
- H8Q Narcolepsy/Sleep Disorder Agents

- Antagonist, Butyrophenones
- H7P Antipsychotic, Dopamine Antagonist, Thioxanthenes
- H7R Antipsychotic, Dopamine Antagonist, Diphenylbutylpiperidines
- H7S Antipsychotic, Dopamine Antagonist, Dihydroindolones
- H7T Antipsychotic, Atypical, Dopamine, & Serotonin, Antagonists
- H7U Antipsychotic, Dopamine & Serotonin Antagonist
- H8T Serotonin Specific Reuptake Inhibitor (SSRI) & Serotonin Receptor Modifier Antidepressant
- H8W Antipsychotic-Atypical, D3
- J5B Adrenergic, Aromatic, Non-Catecholamine
- COD Anti-alcoholic Preparations
- H3T Narcotic Antagonists
- H3W Narcotic Withdrawal Therapy Agents

APPENDIX

F. Chronic Conditions Simple Regression Data

Measure 1.2.3 – Primary Care Visits - Adults

	Non-Behavioral Health Population			Behavioral Health Population		
	Estimate	n	p-value	Estimate	n	p-value
Asthma						
Pre	93.6%	322		99.1%	1,284	
Post	93.9%	1,282	0.828	98.4%	3,999	0.064
Pandemic	94.0%	484	0.8225	98.2%	1,495	**0.0452**
COPD						
Pre	97.4%	3391		99.5%	7441	
Post	97.0%	5650	0.3104	99.1%	12367	**0.0049**
Pandemic	95.9%	1660	**0.0046**	98.5%	3246	**<.0001**
CVD						
Pre	89.60%	4628		98.60%	5482	
Post	91.30%	6941	**0.0009**	98.30%	8397	0.1365
Pandemic	79.40%	2060	**<.0001**	97.50%	2440	**0.0005**
Diabetes						
Pre	92.60%	7432		98.90%	11414	
Post	93.80%	12806	**0.0006**	98.80%	19412	0.436
Pandemic	78.60%	3898	**<.0001**	974%	5653	**<.0001**

Measure 1.1.3 – Follow-Up After Hospitalization (30 Days)

	Behavioral Health Population		
	Estimate	n	p-value
Asthma			
Pre	79.7%	68	
Post	71.1%	159	0.516
Pandemic	79.4%	55	0.8047
COPD			
Pre	76.5%	303	
Post	72.9%	407	0.4423
Pandemic	71.3%	116	0.406
CVD			
Pre	73.8%	127	
Post	64.0%	179	0.3419
Pandemic	60.4%	57	0.5245
Diabetes			
Pre	76.9%	474	
Post	71.6%	622	0.3408
Pandemic	75.5%	188	0.7837

Measure 1.1.18 – Emergency Department Visits (non-Mental Health or Chemical Dependency Services)

	Non-Behavioral Health Population			Behavioral Health Population		
	Estimate	n	p-value	Estimate	n	p-value
Asthma						
Pre	12.0%	422		20.0%	728	
Post	11.9%	658	0.8679	20.9%	1549	0.2636
Pandemic	11.0%	162	0.2957	21.4%	507	0.188
COPD						
Pre	19.4%	763		33.4%	2717	
Post	18.3%	1168	0.1915	30.5%	4100	**<.0001**
Pandemic	14.3%	256	**<.0001**	25.6%	874	**<.0001**
CVD						
Pre	11.5%	673		26.5%	1634	
Post	12.2%	1015	0.2017	26.1%	2435	0.5055
Pandemic	8.7%	232	**<.0001**	23.0%	598	0.0004
Diabetes						
Pre	11.5%	1074		24.9%	3203	
Post	11.3%	1756	0.5435	23.1%	5006	0.0001
Pandemic	7.6%	404	**<.0001**	19.0%	1163	**<.0001**

Measure 1.1.18 – Emergency Department Visits (non-Mental Health or Chemical Dependency Services)

	Behavioral Health Population		
	Estimate	n	p-value
Asthma			
Pre	1.5%	56	
Post	1.7%	122	0.6694
Pandemic	1.9%	44	0.3453
COPD			
Pre	3.4%	277	
Post	3.1%	417	0.2280
Pandemic	2.3%	80	**0.0028**
CVD			
Pre	1.6%	100	
Post	1.7%	158	0.7509
Pandemic	1.6%	41	0.8620
Diabetes			
Pre	2.2%	276	
Post	2.0%	442	0.4908
Pandemic	1.4%	85	**0.0004**

Measure 1.1.19 - Potentially Preventable ED Visits per 1,000 member months

	Non-Behavioral Health Population			Behavioral Health Population		
	Estimate	n	p-value	Estimate	n	p-value
Asthma						
Pre	39.4	3504		66.1	3639	
Post	42	5517	0.1532	71.7	7404	**0.0338**
Pandemic	32.8	1473	**0.0056**	70.4	2368	0.2171
COPD						
Pre	56.2	3943		103.13	8145	
Post	64.7	6376	**<.0001**	108.33	13442	**0.0326**
Pandemic	53.1	1792	0.2437	92.59	3418	**0.0013**
CVD						
Pre	28.4	5846		71.8	6156	
Post	30.5	8307	0.0934	73.8	9343	0.3955
Pandemic	23.9	2668	**0.0041**	63.9	2606	**0.0139**
Diabetes						
Pre	29.4	9319		71.2	12852	
Post	27.6	15578	0.0626	67	21687	**0.0109**
Pandemic	20.2	5334	**<0.0001**	53.7	6108	**<0.0001**

Measure 1.5.1 - Hospital Readmission for Any Cause Within 30 days

	Non-Behavioral Health Population			Behavioral Health Population		
	Estimate	n	p-value	Estimate	n	p-value
Asthma						
Pre	13.3%	15		2.9%	116	
Post	0.0%	41	0.9622	5.5%	363	0.0757
Pandemic	0.0%	14	0.9747	6.7%	127	**0.0268**
COPD						
Pre	2.3%	1072		6.7%	2728	
Post	2.7%	1562	0.2153	6.3%	4268	0.1076
Pandemic	3.20%	434	0.0656	7.2%	1041	**0.009**
CVD						
Pre	2.2%	1234		5.8%	6156	
Post	2.7%	1757	0.1271	6.5%	9343	**0.001**
Pandemic	2.8%	509	0.1174	7.6%	2606	**0.0001**
Diabetes						
Pre	2.7%	1315		6.6%	2947	
Post	2.8%	2048	0.275	6.4%	4681	0.07
Pandemic	2.7%	544	0.3571	6.0%	1256	0.3321

Measure 1.5.2 - Hospital Readmission for Behavioral Health Disorder Within 30 days

	Behavioral Health Population		
	Estimate	n	p-value
Asthma			
Pre	5.1%	33	
Post	7.7%	115	0.4548
Pandemic	7.0%	49	0.2283
COPD			
Pre	11.6%	358	
Post	10.7%	610	0.9744
Pandemic	12.9%	191	0.3228
CVD			
Pre	9.6%	178	
Post	11.5%	278	0.4294
Pandemic	12.9%	119	0.3686
Diabetes			
Pre	9.9%	434	
Post	10.5%	652	0.5143
Pandemic	11.4%	240	0.1896

Measure 1.6.1 - ACS Admissions Composite Scores
Ambulatory care sensitive admissions - Overall Composite (PQI #90)

	Behavioral Health Population		
	Estimate	n	p-value
Asthma			
Pre	6.3	3639	
Post	5.0	7404	0.4422
Pandemic	4.6	2368	0.4506
COPD			
Pre	179.5	8145	
Post	151	13422	<.0001
Pandemic	107.4	3418	<.0001
CVD			
Pre	160.3314	6156	
Post	136.5728	9343	0.0033
Pandemic	113.584	2606	<.0001
Diabetes			
Pre	111.3445	12852	
Post	101.5355	21687	0.043
Pandemic	75.6385	6108	<.0001

Ambulatory Care Sensitive Admissions - Acute Composite (PQI #91)

	Behavioral Health Population		
	Estimate	n	p-value
Asthma			
Pre	1.64	3639	
Post	1.08	7404	0.4616
Pandemic	3.37	2368	0.7207
COPD			
Pre	53.2	8145	
Post	36.2	13422	**<.0001**
Pandemic	29.3	3418	**<.0001**
CVD			
Pre	50.3574	6156	
Post	29.8619	9343	**<.0001**
Pandemic	25.3262	2606	**<.0001**
Diabetes			
Pre	28.4002	12852	
Post	20.7959	21687	**<.0001**
Pandemic	12.1153	6108	**<.0001**

Ambulatory Care Sensitive Admissions - Chronic Composite (PQI #92)

	Behavioral Health Population		
	Estimate	n	p-value
Asthma			
Pre	4.67	3639	
Post	3.91	7404	0.6265
Pandemic	3.37	2368	0.5059
COPD			
Pre	126.2	8145	
Post	114.8	13422	0.0648
Pandemic	78.1	3418	**<.0001**
CVD			
Pre	109.974	6156	
Post	106.7109	9343	0.6070
Pandemic	88.2579	2606	**0.0210**
Diabetes			
Pre	82.9443	12852	
Post	80.7396	21687	0.5906
Pandemic	63.5232	6108	**0.0007**

Measure 2.1.1: Fragmented Care (No PCP visit)

	Non-Behavioral Health Population			Behavioral Health Population		
	Estimate	n	p-value	Estimate	n	p-value
Asthma						
Pre	7.2%	253		3.5%	126	
Post	15.0%	830	<.0001	12.5%	928	<.0001
Pandemic	12.1%	178	<.0001	5.6%	133	<.0001
COPD						
Pre	3.2%	127		1.3%	105	
Post	12.9%	824	<.0001	9.3%	1250	<.0001
Pandemic	4.1%	73	0.1035	1.8%	61	0.0419
CVD						
Pre	6.9%	402		1.5%	95	
Post	14.6%	1215	<.0001	9.1%	849	<.0001
Pandemic	21.6%	577	<.0001	3.0%	77	<.0001
Diabetes						
Pre	5.1%	476		2.2%	287	
Post	18.1%	2815	<.0001	11.3%	2441	<.0001
Pandemic	22.1%	1181	<.0001	4.2%	257	<.0001

Measure 2.1.1: Fragmented Care

	Non-Behavioral Health Population			Behavioral Health Population		
	Estimate	n	p-value	Estimate	n	p-value
Asthma						
Pre	23.1%	751		27.9%	981	
Post	30.2%	1414	<.0001	38.0%	2461	<.0001
Pandemic	39.0%	505	<.0001	42.6%	953	<.0001
COPD						
Pre	37.8%	1442		47.4%	3813	
Post	42.8%	2375	<.0001	49.6%	6049	0.0023
Pandemic	47.6%	819	<.0001	53.0%	1778	<.0001
CVD						
Pre	33.8%	1842		46.7%	2833	
Post	38.4%	2720	<.0001	51.1%	4339	<.0001
Pandemic	44.8%	937	<.0001	52.9%	1337	<.0001
Diabetes						
Pre	32.1%	2836		41.0%	5152	
Post	36.1%	4608	<.0001	45.8%	8817	<.0001
Pandemic	41.8%	1737	<.0001	48.3%	2823	<.0001

Measure 1.4.1: Total Cost of All Care (Per Member per Month)

	Non-Behavioral Health Population		Behavioral Health Population	
	Estimate	p-value	Estimate	p-value
Asthma				
Pre	$409.46		$1,228.81	
Post	$472.28	0.4051	$1,206.95	0.7948
Pandemic	$415.82	0.9532	$1,042.04	0.0884
COPD				
Pre	$1,464.18		$2,017.50	
Post	$1,341.92	0.0017	$2,024.18	0.8471
Pandemic	$1,167.91	<.0001	$1,755.80	<.0001
CVD				
Pre	$2,205.35		$2,672.09	
Post	$1,824.33	<.0001	$2,555.30	0.0164
Pandemic	$1,043.22	<.0001	$2,024.89	<.0001
Diabetes				
Pre	$1,798.70		$2,312.90	
Post	$1,522.66	<.0001	$2,222.68	0.0046
Pandemic	$1,018.77	<.0001	$1,933.37	<.0001

APPENDIX

G. Hypothesis and Measure Interpretation

Waiver Goal: Improve Access to Care, Quality of Care, and Health Outcomes while Reducing Health Care Costs

Results support waiver goal

Hypothesis 1.1: Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.

3 measures support hypothesis

7 measures partially support hypothesis

8 measures do not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)			
					Medicaid Claims			
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group	*BRFSS*
1.1.1	Experiences of Health Care with DSRIP	Partially Supported	Beneficiary Interviews	Qualitative data collected from Beneficiaries indicate overall satisfaction with their quality of care both during and after the Demonstration, with a perception of marked increase in access via telehealth during 2020, and no decrease in reported access to care and quality of care during the pandemic.	N/A	N/A	N/A	N/A

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)			
				Interpretation	*Medicaid Claims*			*BRFSS*
					GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group	
1.1.2	Antidepressant Medication Management	Partially Supported	Medicaid Claims & Encounters	N/A	Acute Phase: Pandemic period only Continuous Phase: Pandemic period only	N/A	N/A	N/A
1.1.3	Follow-Up After Hospitalization for Mental Illness[29]	Partially Supported	Medicaid Claims & Encounters, NH Hospital for non-claim discharges	N/A	7 Days: Pandemic period only 30 Days: Pandemic period only	N/A	N/A	N/A
1.1.4	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	Partially Supported	Medicaid Claims & Encounters	N/A	Ages 13-17 14 Days: No significant changes 30 Days: No significant changes Ages 18+ 14 Days: Pandemic period only 30 Days:	N/A	N/A	N/A

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[29] There were significantly fewer follow-ups after hospitalization for mental illness in the Post period.

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)				
					Medicaid Claims				BRFSS
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group		
					Post and Pandemic periods				
1.1.5	Adherence to Antipsychotic Medications for Individuals with Schizophrenia	Partially Supported	Medicaid Claims & Encounters	N/A	Pandemic period only	N/A	N/A		N/A
1.1.6	Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications[30]	No	Medicaid Claims & Encounters	N/A	No significant improvement	N/A	N/A		N/A
1.1.7	Diabetes Monitoring for People with Diabetes and Schizophrenia[31]	No	Medicaid Claims & Encounters	N/A	No significant improvement	N/A	N/A		N/A
1.1.8	Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia	No	Medicaid Claims & Encounters	N/A	No significant changes	N/A	N/A		N/A

[30] There were significantly fewer diabetes screenings for people with schizophrenia or bipolar disorder who were using antipsychotic medications in the Pandemic period.

[31] There was significantly less diabetes monitoring for people with diabetes and schizophrenia in the Post and Pandemic periods.

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)			
				Interpretation	Medicaid Claims			BRFSS
					GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group	
1.1.9	Follow-up Care for Children Prescribed ADHD Medication	Partially Supported	Medicaid Claims & Encounters	N/A	Initiation: No significant changes Continuation & Management: Post period only	N/A	N/A	N/A
1.1.10	Metabolic Monitoring for Children and Adolescents on Antipsychotics	No	Medicaid Claims & Encounters	N/A	No	N/A	N/A	N/A
1.1.11	Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics[32]	No	Medicaid Claims & Encounters	N/A	No significant improvement	N/A	N/A	N/A
1.1.12	USPSTF: Cervical Cancer Screening	No	NH BRFSS	N/A	N/A	N/A	N/A	No significant changes
1.1.13	Breast Cancer Screening[33]	No	Medicaid Claims & Encounters	N/A	N/A	No significant changes	No significant improvement	N/A
1.1.14	USPSTF: Colorectal Cancer Screening	No	NH BRFSS	N/A	N/A	N/A	N/A	No significant changes
1.1.16	Adolescent Well	Yes	Medicaid	N/A	N/A	Post and	No	N/A

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[32] Use of first-line psychosocial care for children and adolescents on antipsychotics was significantly less in the Pandemic period.
[33] There were significantly fewer breast cancer screenings for the most at risk Beneficiaries (unmatched BH group) in the Pandemic period.

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)			
					Medicaid Claims			BRFSS
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group	
	Care Visit		Claims & Encounters			Pandemic periods	significant changes	
1.1.18	Emergency Department (ED) Visits	Yes	Medicaid Claims & Encounters	N/A	N/A	No significant changes	Post and Pandemic periods	N/A
1.1.19	Potentially Preventable Emergency Department (ED) Visits	Yes	Medicaid Claims & Encounters	N/A	N/A	No significant changes	Post and Pandemic periods	N/A
1.1.20	Use of Opioids at High Dosage	Partially Supported	Medicaid Claims & Encounters	N/A	N/A	No significant changes	Post period only	N/A

Hypothesis 1.2: Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area.

  1 measure supports hypothesis

  3 measures partially support hypothesis

  1 measure does not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
					Medicaid Claims		
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
1.2.1	Member Experiences of Accessing Care	Partially Supported	Beneficiary Interviews	Qualitative data collected from Beneficiaries indicate overall satisfaction with their quality of care during and after the Demonstration, with a perception of marked increase in access via telehealth during 2020 (pandemic period), and no decrease in reported access to care and quality of care during the pandemic.	N/A	N/A	N/A
1.2.3	Annual Primary Care Visit	Partially Supported	Medicaid Claims & Encounters	N/A	N/A	Post and Pandemic periods	No
1.2.4	Behavioral Health Care Visits	No	Medicaid Claims & Encounters	N/A	No significant improvement	N/A	N/A
1.2.5	Substance Use Treatment	Yes	Medicaid Claims &	N/A	Post and Pandemic	N/A	N/A

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
					Medicaid Claims		
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
	Services		Encounters		periods		
1.2.6	Adolescent Well Care Visit	Partially Supported	Medicaid Claims & Encounters	N/A	N/A	Post and Pandemic periods	No significant changes

Hypothesis 1.3: Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.

        1 measure supports hypothesis

        1 measure does not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)
				Interpretation	BRFSS
1.3.1	Strategies to Improve Population Health	Yes	Administrative Interviews & Provider Interviews	Data from provider, administrator interviews indicated the perception that the Demonstration made IDNs and partner organizations more responsive to population health needs through improved capacity related to integration of care, care transitions, and comprehensive screening.	N/A
1.3.2	Improvements in Population Health	No	NH BRFSS	N/A	No significant changes for the Medicaid respondents for the broad population health indicators. Among respondents with a Behavioral Health Flag: General Health "fair or poor": No Physical Health "not good": Yes Poor Physical or Mental Health – No Exercise: No Weight: No Tobacco Use: No E-Cigarettes: No Alcohol Use: No Injuries: N/A

Hypothesis 1.4: The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs regardless of IDN, geographic location, or market area.

      1 measure supports hypothesis

      1 measure partially supports hypothesis

      6 measures do not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
				Medicaid Claims		
				GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
1.4.1	Total Cost of All Care[34]	No	Medicaid Claims & Encounters	N/A	No significant improvement	Pandemic period only
1.4.2	Total Cost of All Inpatient Care	No	Medicaid Claims & Encounters	N/A	No	Pandemic period only
1.4.3	Total Cost of All Outpatient Care	Partially Supported	Medicaid Claims & Encounters	N/A	Post and Pandemic periods	Pandemic period only
1.4.4	Total Cost of Emergency Department (ED) Care	Yes	Medicaid Claims & Encounters	N/A	Post and Pandemic periods	Pandemic period only (post period was almost significant (p=0.0530)
1.4.5	Total Cost of Behavioral Health Care[35]	No	Medicaid Claims & Encounters	Pandemic period only	N/A	N/A
1.4.6	Total Cost of Inpatient Behavioral Health Care	No	Medicaid Claims & Encounters	Pandemic period only	N/A	N/A
1.4.7	Total Cost of Outpatient Behavioral Health Care[36]	No	Medicaid Claims & Encounters	Pandemic period only	N/A	N/A

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[34] The total cost of care for the behavioral health group was significantly higher compared to the non-behavioral health in the Post and Pandemic periods.
[35] Total cost of behavioral health care was significantly more in the Post period.

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
				Medicaid Claims		
				GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
1.4.8	Total Cost of Emergency Department (ED) Behavioral Health Care	No	Medicaid Claims & Encounters	Pandemic period only	N/A	N/A

[36] Total cost of outpatient behavioral health care was significantly higher in the Post period.

Hypothesis 1.5: The rate of avoidable hospital re-admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.

2 measures do not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
				Medicaid Claims		
				GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
1.5.1	Hospital Readmission for Behavioral Health Disorder	No	Medicaid Claims & Encounters, NH Hospital for non-claim discharges	No significant changes	N/A	N/A
1.5.2	Hospital Readmission for Any Cause	No	Medicaid Claims & Encounters, NH Hospital for non-claim discharges	N/A	No significant changes	No significant changes

Hypothesis 1.6: The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.

   1 measure partially supports hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
				Medicaid Claims		
				GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
1.6.1	Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders	Partially Supported	Medicaid Claims & Encounters	N/A	Overall: No Acute: No Chronic: No	Overall: Post and Pandemic periods Acute: Post and Pandemic periods Chronic: Pandemic period only

Hypothesis 1.8: Average length of stay for inpatient psychiatric care at New Hampshire Hospital (NHH, NH's state run psychiatric facility) will be lower at the end of the Demonstration than prior to the Demonstration, as options for community-based care increase regardless of IDN, geographic location, or market area.

1 measure does not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
				Medicaid Claims		
				GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
1.8.1	Length of Stay for Inpatient Psychiatric Care	No	NH DHHS Hospital Discharge	No significant improvements	N/A	N/A

Waiver Goal: Improve Health Care Integration and Coordination for Beneficiaries

Results support waiver goal

Hypothesis 2.1: Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.

4 measures support hypothesis

8 measures partially support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
					Medicaid Claims		
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
2.1.1	Fragmented Care	Partially Supported	Medicaid Claims & Encounters	N/A	N/A	Post and pandemic periods	No significant improvement
2.1.5	Receipt of Necessary Care Composite Score	Partially Supported	Beneficiary Surveys	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic).	N/A	N/A	N/A
2.1.6	Timely Receipt of Necessary Care Composite Score	Partially Supported			N/A	N/A	N/A
2.1.7	Care Coordination Composite Score	Partially Supported			N/A	N/A	N/A
2.1.8	Behavioral Health	Partially Supported			N/A	N/A	N/A

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
					Medicaid Claims		
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
	Composite Score						
2.1.9	Mental Health Hospitalization Follow-Up (7-days)	Partially Supported	Medicaid Claims & Encounters, NH Hospital for non-claim discharges	N/A	Pandemic period only	N/A	N/A
2.1.10	Mental Health Hospitalization Follow-Up (30 days)[37]	Partially Supported	Medicaid Claims & Encounters, NH Hospital for non-claim discharges	N/A	Pandemic period only	N/A	N/A
2.1.11	Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)	Yes	Medicaid Claims & Encounters	N/A	Post period only	N/A	N/A
2.1.12	Alcohol/Drug Dependence Emergency Department (ED) Visit Follow-Up 30 days)	Yes	Medicaid Claims & Encounters	N/A	Post and Pandemic periods	N/A	N/A

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[37] In the post-Demonstration period, there were significantly fewer mental health hospitalization follow-up visits within 30 days after being discharged.

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
					Medicaid Claims		
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
2.1.13	Ratings of Improvement in Care Coordination and Integration	Yes	Provider & HIT surveys, and all Interviews	Provider survey respondents indicated positive perceptions of successful care integration strategies and decreased barriers around information sharing, with the level of perceived successes and decreased barriers increasing in post-Demonstration vs. pre. Increased coordination and communication reported from Beneficiaries specific to HIT/ telehealth during the pandemic period 2020.	N/A	N/A	N/A
2.1.14	Patient Experiences of Care Integration and Coordination	Partially Supported	Beneficiary Interviews	Qualitative data collected from Beneficiaries indicate mixed perceptions of integration and coordination of their care both during and after the Demonstration, often reporting that they had no indication there was a change in their service delivery and/or they were satisfied, and nothing needed to change. There were some indications of increased coordination and communication via HIT during the pandemic period 2020, and no decrease in reported access to care and quality of care in post-Demonstration	N/A	N/A	N/A

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis	Quantitative Analyses Supporting Hypothesis (Significant Findings)		
					Medicaid Claims		
				Interpretation	GLM (BH Population Only)	GLM - Matched Population (BH vs. Non-BH Time Interaction)	Unmatched BH Group
				interviews.			
2.1.15	Practice and Provider Experiences of Care Integration and Coordination	Yes	Administrator & Provider Interviews and Surveys	Thematic analysis of interviews showed both Administrators' and Providers' perception of improved care coordination and integration for Beneficiaries with behavioral health disorder(s) throughout the Demonstration; this was further quantified by survey data indicating increased perceptions of care integration and coordination from these stakeholder groups from 2019 to 2021 surveys.	N/A	N/A	N/A

Waiver Goal: Improve Capacity of the State's Behavioral Health Workforce

Results support waiver goal

Hypothesis 3.1: Capacity to deliver evidenced-based behavioral health treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.

1 measure supports hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Qualitative Analysis Supporting Hypothesis
				Interpretation
3.1.1	Size and Training of Provider Network	Yes	IDN Reports, Provider & Administrator Surveys and Provider & Administrator Interviews	IDN documents indicate extensive training and retention activities throughout the Demonstration, and sustainability of increased workforce capacity to deliver evidence-based behavioral health treatment. This was further substantiated by interview and survey data.

Waiver Goal: Improve New Hampshire's' Health IT Ecosystem

Results support waiver goal

Hypothesis 4.1: Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.

  2 measures support hypothesis

  1 measure partially support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Analysis of Measure Supporting Hypothesis
				Interpretation
4.1.1	Enhancements to IT System (HIT survey, IDN reports)	Yes	HIT Surveys & Administrative Data (IDN Reports)	HIT survey and IDN reports indicate improvements in HIT infrastructure due to Demonstration initiatives and activities, with varying degrees of success and penetration within and among the IDN partners.
4.1.2	Perceptions of the Enhanced IT System	Yes	All Interviews	Wide agreement that the Demonstration had lofty goals and intensive work plan for increasing and improving HIT capacity; many goals were partially realized. Even if all these goals were not fully met, the work done pushed siloed organizations to connect and innovate to share information for patients with behavioral health that had not been done before.
4.1.3	Perceptions of the Usability and Utility of Enhanced IT System	Partially Supported	Administrator & Provider Surveys, All Interviews, HIT Surveys	While there were successes within each IDN of adaption of the enhanced HIT systems, stakeholders believed that state coordination and interoperability of HIT needed to be prioritized earlier and in a more ongoing, sustainable manner. There were mixed perceptions on the future utility of some of the enhancements made due to interoperability and funding issues.

Hypothesis 4.2: Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.

> 1 measure supports hypothesis

> 2 measures partially support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Analysis of Measure Supporting Hypothesis
				Interpretation
4.2.1	Care Coordination Composite Score	Partially Supported	Beneficiary Surveys	There was an improvement from Wave 1 to Wave 2, however there was a slight decrease in Wave 3 of the survey (likely from to changes in health care due to the COVID-19 pandemic).
4.2.2	Ratings of Improvement in Care Coordination and Integration	Yes	Beneficiary Surveys & Provider Surveys and Interviews	See Measure 4.2.1 for CAHPS composite result; provider interviews indicated that for those systems using the HIT enhancements, there was improvement in information exchange (particularly across provider types) during the Demonstration particularly for the most at-risk patients with behavioral health diagnosis/es.
4.2.3	Perceptions of Improved Information Exchange (all interviews)	Partially Supported	All Interviews	According to interviews across stakeholders (administrators, providers, HIT staff, Beneficiaries), there was perceived improvement in patient/provider as well as provider-to-provider information exchange due to Demonstration activities, with some examples of enhanced care management especially around event notification system. Beneficiaries perceived this most acutely in 2020 during the pandemic with telehealth, but enhanced care management related to HIT was largely invisible at the patient level.

Waiver Goal: Transition to Alternative Payment Models

Results do not support waiver goal

Hypothesis 5.1: DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.

    1 measure partially supports hypothesis

    1 measure does not support hypothesis

Measure ID	Measure Description	Measure Supports Hypothesis	Data Source	Analysis of Measure Supporting Hypothesis
				Interpretation
5.1.1	Transitioning to Alternative Payment Models	Partially Supported	IDN & Program Reporting	Diverse engagement and training activities of multiple partner types enhanced knowledge of strategies to increase needed organizational capacity for APM transitions. Lack of robust guidance, billing code activation, and necessary data infrastructure hindered advancements.
5.1.2	Experiences Transitioning and Implementing APMS	No	Provider & Administrator Interviews	Administrator and provider perspectives indicate that there were several opportunities missed to better engage IDNs with MCOs and better educate systems and providers about alternative payment models. Majority felt the pandemic period of 2020 halted most of this work, which was perceived as already behind in 2019, the 4th year of the Demonstration.

ATTACHMENT

I. CMS Approved Evaluation Plan

NEW HAMPSHIRE BUILDING CAPACITY FOR TRANSFORMATION - *DELIVERY SYSTEM REFORM INCENTIVE PAYMENT (DSRIP) DEMONSTRATION WAIVER*

EVALUATION DESIGN

August 2017

NH Department of Health and Human Services
Office of Quality Assurance and Improvement

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1. OVERVIEW

A. Synopsis of the New Hampshire Delivery System Reform Incentive Payment Demonstration Program

On January 5, 2016, the Centers for Medicare and Medicaid Services (CMS) approved New Hampshire's request for expenditure authority to operate its section 1115(a) Medicaid demonstration entitled Building Capacity for Transformation, a Delivery System Reform Incentive Payment (DSRIP) program (hereinafter "DSRIP Demonstration"). The NH DSRIP Demonstration aims to transform the way physical and behavioral health care are delivered to Medicaid beneficiaries with behavioral health disorders, and/or substance use disorders (SUDs) and/or substance misuse (hereinafter "behavioral health disorders"). Specifically, the DSRIP Demonstration will work to improve health care quality, population health, and reduce avoidable hospital use, while lowering health care costs.

Under the DSRIP Demonstration, the state will make performance-based funding available to seven regionally-based Integrated Delivery Networks (IDNs) that serve Medicaid beneficiaries with behavioral health needs. The IDNs will: (1) deliver integrated physical and behavioral health care that better addresses the full range of individuals' needs, (2) expand capacity to address emerging and ongoing behavioral health needs in an appropriate setting, and (3) reduce gaps in care during transitions across care settings by improving coordination across providers and linking Medicaid beneficiaries with community supports. The demonstration is approved through December 31, 2020.

Through the course of the demonstration period, each IDN is required to implement six projects to address the needs of Medicaid beneficiaries with behavioral health disorders. For each project, the IDN will develop detailed plans and focused milestones. Project performance will be measured by IDNs based on milestones and metrics that track project planning, implementation progress, clinical quality and utilization indicators, and progress toward transition to Alternative Payment Models (APMs). Details on the development and measurement of these milestones and metrics as well as progress toward transition to APMs is detailed in NH DSRIP Project and Metrics Specification Guide.[1]

The IDN projects include:

1. **Statewide Projects**

Each IDN will be required to implement two Statewide Projects designed to address the following critical elements of New Hampshire's vision for transformation:

- **Behavioral Health Work Force Capacity Development Project** - to develop a workforce equipped to provide high-quality, integrated care throughout the state; and

- **Health Information Technology Planning and Development Project** - to establish an HIT infrastructure that allows for the exchange of information among providers and supports a robust care management approach for beneficiaries with behavioral health disorders.

2. Integrated Behavioral Health and Primary Care Competency Project Core Competency Project

Each IDN will be required to implement an Integrated Behavioral Health and Primary Care Competency Project to ensure that behavioral health disorders are routinely and systematically addressed in the primary care setting and that primary care issues are routinely addressed in behavioral health setting. Through this project, primary care providers and behavioral health providers will partner to implement an integrated care model that reflects the highest possible levels of collaboration and integration as defined within the Substance Abuse and Mental Health Services Administration (SAMHSA) Levels of Integrated health care. Implementing this model will better enable providers to prevent and quickly detect, diagnose, treat and manage behavioral and medical disorders using standards of care that include:

- Core standardized assessment framework that includes evidence-based universal screening for depression and substance use disorders,

- Health promotion,

- Integrated electronic medical records,

- Multi-disciplinary care teams that provide care management, care coordination and care transition support,

- Electronic assessment, care planning and management tool that enables information sharing among providers.

3. Community Driven Projects

Each IDN is required to select three community-driven projects from a project menu established by the state. The IDN Community Driven menu of projects gives IDNs the flexibility to undertake work reflective of community-specific priorities identified through a behavioral health needs assessment and community engagement, to change the way that care is provided in a variety of care delivery settings and at various stages of treatment and recovery for sub-populations, and to use a variety of approaches to change the way care is delivered. IDNs will be required to conduct a behavioral needs assessment as part of development of the IDN Project Plans. The IDN project menu is divided into three categories; IDNs will select one project within each of the following categories:

- **Care Transitions Projects:** Support beneficiaries with transitions from institutional setting to community.

- **Capacity Building Projects:** Expand availability and accessibility of evidence supported programs across the state and supplement existing workforce with additional staff and training.

- **Integration Projects:** Promote collaboration between primary care and behavioral health care.

These projects are designed to facilitate the attainment of NH DSRIP Demonstration goals and objectives. The goal is to employ these services across the state to ensure a full spectrum of care is accessible for individuals with active behavioral health disorders and those who are undiagnosed or at risk. Details regarding the project specifications and metrics can be found in the NH DSRIP Project and Metrics Specification Guide, previously submitted to CMS.

B. Goals, Objectives, and Key Components

The goal of the NH DSRIP Demonstration is to support the development and maintenance of an integrated care delivery system (IDNs) to improve the physical and behavioral health of Medicaid beneficiaries with behavioral health needs and reduce the total cost of care of that population. To achieve that goal, the NH DSRIP Demonstration will deploy a number of strategies. These include:

1. **Workforce Building**: Increase community-based behavioral health service workforce capacity through the education, recruitment, and training of a professional, allied health, and peer workforce with knowledge and skills to provide and coordinate the full continuum of substance use and mental health services.

2. **Access**: Increase access to behavioral health care and appropriate community-based social support services throughout all of NH's regions by establishing IDNs.

3. **Technology**: Establish robust technology solutions to support care planning and management and information sharing among providers and community-based social support service agencies.

4. **Incentives**: Incentivize the provision of high-need services, such as medication-assisted treatment for SUD, substance misuse, peer support, and recovery services.

5. **Recovery Models**: Increase the state's use of SAMHSA-recommended recovery models that will reduce unnecessary use of inpatient and emergency department (ED) services, hospital readmissions, the cycling of justice-involved individuals between jail and the community due to untreated behavioral health disorders, and wait times for services.

6. **Integration**: Promote the integration of physical and behavioral health provider services in a manner that breaks down silos of care among primary care and behavioral health providers, following existing standards (i.e., State Innovation Model (SIM) planning process; SAMHSA-defined standards for Levels of Integrated health care).

7. **Care Transitions**: Enable coordinated care transitions for all members of the target population regardless of care setting (e.g., Community Mental Health Centers (CMHC), primary care, inpatient hospital, corrections facility, SUDs clinic, crisis stabilization unit) to ensure that the intensity level and duration of transition services are fully aligned with an individual's documented care plan.

8. **Alternative Payment Models** (APMs): Ensure that IDNs participate in APMs that move Medicaid payment from primarily volume-based to primarily value-based payment over the course of the demonstration period.

Figure 1: NH DSRIP Logic Model below illustrates the relationship between the NH DSRIP Demonstration goals and the strategic objectives, identifies the expected outcomes of the Demonstration, and provides a framework for the development of the evaluation.

FIGURE 1: NH DSRIP LOGIC MODEL

DSRIP Activities	Short-Term Outcomes	Intermediate Outcomes	Long-Term Outcomes	Impact
Establish Health Information Technology to support care planning, management and information sharing	Increased behavioral health workforce	Increased access to behavioral health care and community based social services throughout the state	Reduction in the unnecessary use of inpatient and ED services, hospital readmissions, and the cycling of justice-involved individuals between jail and the community	Improved physical and behavioral health of Medicaid beneficiaries with behavioral health disorders
Establish Integrated Delivery Networks	Implementation of integrated care models among physical, mental and behavioral health providers and care settings	Expanded capacity to address behavioral health needs in appropriate settings	Breakdown of silos of care among primary care, SUD and mental health providers	Reduced rate of growth in the total cost of care for Medicaid beneficiaries with behavioral health disorders
Recruit and train an allied health and peer workforce to provide and coordinate the full continuum of substance use and mental health services	Implementation of standard assessment, treatment, management and referral protocols	Coordinated care transitions occur regardless of care setting	Reduction in gaps in care during transitions across care settings for individuals with behavioral health disorders	Reduction in adverse consequences due to gaps in care
Provide incentives for high-need services	Implementation of effective community based behavioral health prevention, treatment and recovery models	Full range of beneficiaries' physical and behavioral needs are met	Reductions in cost	
Adopt SAMHSA-defined Levels of Integrated Healthcare	Improved communication between and among providers	Medicaid payment moves from primarily volume-based to primarily value-based		
		Reduction in wait times for services		
		Adoption of Alternative Payment Models		

New Hampshire Department of Health and Human Services
New Hampshire Delivery System Reform Incentive Payment (DSRIP) Program Evaluation Design

4

2. EVALUATION DESIGN

A. Purpose

The NH DSRIP Demonstration Evaluation Design, prepared as required by the CMS Special Terms and Conditions (STCs)[2] and subject to CMS approval, describes the methods that will be used by the NH Department of Health and Human Services (NH DHHS) to evaluate the extent to which the NH DSRIP Demonstration achieved its intended goals and objectives. The specific aims of the NH DSRIP Demonstration evaluation are to:

- Assess the implementation of the IDN statewide and site specific projects;

- Examine how DSRIP activities have enhanced the state's infrastructure including: increasing behavioral health workforce capacity, enhancing health IT solutions, and transitioning APMs;

- Evaluate the impact of the Demonstration on the cost efficiency and quality of care provided to Medicaid beneficiaries with behavioral health disorders;

- Examine how Demonstration activities and the IDNs influence access to care for Medicaid beneficiaries with behavioral health disorders; and

- Assess how IDNs impact the physical and behavioral health outcomes of Medicaid beneficiaries with behavioral health disorders.

As described above, the NH DSRIP Demonstration strategy involves the creation of IDNs across the state and the implementation of specific evidence-supported projects and statewide planning efforts completed by the IDNs that will lead toward an increase in capacity for the treatment of behavioral health disorders, improved integration of physical and behavioral care, and improved transitions of care across settings. In addition, the IDNs will engage in a phased transition to APMs to transform the Medicaid system by building relationships between all types of health care providers and improve health information technology.

B. Overview of Study Methodology

Implementation of a multilevel, multi-sector project to build capacity to transform health care delivery systems and payment models is challenging and requires significant engagement from a diverse group of stakeholders, as well as coordination among numerous activities across multiple settings. To ensure a robust and multi-dimensional understanding of the IDNs' implementation strategies and corresponding impact on delivery systems and patient outcomes, the proposed evaluation plan is designed to systematically examine the resources, activities, and processes affecting access to behavioral health care and social supports, treatment integration, and care coordination.

The evaluation of the DSRIP Demonstration will employ a rigorous mixed-methods design that incorporates both quantitative and qualitative measurement, including secondary administrative and electronic health data, stakeholder interviews and surveys, and document review. The evaluation includes a quasi-experimental, one-group pretest-posttest design, as well as qualitative thematic analysis, to:

- Provide feedback to IDNs for improvement in access and delivery of physical and

behavioral health care in their region; and

- Provide a summative assessment of the implementation experience and success of the intervention strategies implemented by the IDNs.

The evaluation design focuses on examining the impact of IDNs on the health outcomes of Medicaid beneficiaries with behavioral health disorders and the factors external and internal to the IDNs that may have influenced implementation. The latter will include documenting and comparing implementation tactics within and across IDN sites and evaluating strategies used to overcome barriers to delivering integrated care, enhancing capacity to address behavioral health, and enhancing care coordination across care settings. Evaluation activities will also focus on documenting and tracking the impact of strategies aimed at improving state infrastructure, including increasing behavioral health workforce capacity; enhancing information technology solutions to support care ongoing care planning, management, and coordination; and the transition to and implementation of APMs.

C. Research Questions, Hypotheses, and Measures

The DSRIP Demonstration evaluation design focuses on five research questions and corresponding hypotheses that explore and describe the effectiveness and impact of the demonstration through a set of short-term and intermediary performance measures collected at appropriate times throughout the demonstration period. Each research question and corresponding hypothesis, described below, includes one or more evaluation measures. The methods used to test the hypotheses and answer the research questions are described in Section F. The source of data and technical specifications for the measures are described in Appendix A.

Research Question 1: Was the DSRIP Demonstration effective in achieving the goals of better care for individuals (including access to care, quality of care, health outcomes), better health for the population, or lower cost through improvement? Was there any variation between IDNs/geographic regions/market areas? To what degree can improvements be attributed to the activities undertaken under DSRIP?

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*Hypothesis 1.1***:** *Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.*

Process measures: Experiences of Health Care with DSRIP: Beneficiaries Perceptions of Quality of Care; Providers Opinions of How IDN Activities have Improved Care Delivery; IDN Administrators Perceptions of the Implementation Experience and Views on How the IDNs and Project Activities have Impacted the Quality of Care, Plans, Payment Structures and Delivery Expenditures

Outcome measures: Experiences of Health Care with DSRIP, Antidepressant Medication Management, Follow-Up After Hospitalization for Mental Illness, Alcohol/Drug Dependence Treatment, Initiation and Engagement of Alcohol and Other Drug Dependence Treatment, Adherence to Antipsychotic Medications for Individuals with Schizophrenia, Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications,

Diabetes Screening for People with Diabetes and Schizophrenia, Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia, Follow-up Care for Children Prescribed ADHD Medication, Metabolic Monitoring for Children and Adolescents on Antipsychotics, Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics, Intimate Partner Violence Screening, Hypertension Screening, Obesity Screening and Referral (Adult and Children), Tobacco Use Screening and Intervention, Cholesterol Screening, Adolescent Well Care Visit, Smoking/Tobacco Cessation Counseling, Emergency Department (ED) Visits, Potentially Preventable Emergency Department (ED) Visits, Opioid Dosage for People Without Cancer

Hypothesis 1.2: *Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the demonstration regardless of IDN, geographic location, or market area.*

Process measures: Member Experiences of Accessing Care: Beneficiaries Perceptions and Experiences Accessing Care

Outcome measures: Timely Access to Care, Number of Primary Care Visits, Number of Behavioral Health Care Visits, Percent Beneficiaries with One or More Annual Primary Care Visit, Percent with Annual Behavioral Health Care Visits, Percent Beneficiaries who received SUD Treatment Services, Percent of Adolescent Beneficiaries with Well-Care Visits.

Hypothesis 1.3: *Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.*

Process measures: Strategies to Improve Population Health: Necessary Resources, Infrastructure Development, Outreach Efforts, Factors Contributing to Successful Intervention Strategies, Challenges Encountered

Outcome measures: Changes in Self-Reported Health Status, Health Related Quality of Life, Tobacco Use, Alcohol Consumption.

Hypothesis 1.4: *The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs are operating regardless of IDN, geographic location, or market area.*

Outcome measures: The primary outcome will be average costs for attributed individuals; total costs will be further broken apart to examine specific costs expected to be impacted by the demonstration. The following costs will be calculated for analysis: Total Cost of All Care, Total Cost of All Inpatient Care, Total Cost of All Outpatient Care, Total Cost of Emergency Department (ED) Care, Total Cost of Behavioral Health Care, Total Cost of Outpatient Behavioral Health Care, Total Cost of Inpatient Behavioral Health Care, Total Cost of Emergency Department (ED) Behavioral Health Care

Hypothesis 1.5: *The rate of avoidable hospital re-admissions for individuals within IDNs with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the demonstration than prior to the regardless of IDN, geographic location, or market area.*

Outcome measures: Hospital Re-Admission for Any Cause for Individuals with Behavioral Health Disorders, Hospital Re-Admission for Behavioral Health Disorder

Hypothesis 1.6: *The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the demonstration than prior to the regardless of IDN, geographic location, or market area.*

Outcome measures: Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders.

Hypothesis 1.7: *The rate of Medicaid beneficiaries waiting for inpatient psychiatric care will decrease over the course of the Demonstration regardless of IDN, geographic location, or market area.*

Outcome measures: Rate of Individuals Waiting for Inpatient Psychiatric Care

Hypothesis 1.8: *The average length of stay for inpatient psychiatric care at New Hampshire Hospital (NHH, NH's state run psychiatric facility) will be lower at the end of the Demonstration than prior to the Demonstration, as options for community-based care increase regardless of IDN, geographic location, or market area.*

Outcome measures: Length of Stay for NHH Inpatient Psychiatric Care

Hypothesis 1.9: *The average wait times for outpatient appointments at a community mental health center will be lower at the end of the demonstration than prior to the regardless of IDN, geographic location, or market area.*

Outcome measures*:* Community Mental Health Center Referral or New Patient Appointment (Timeliness)

Hypothesis 1.10: *The number of referrals and follow-up plans from primary care and other non-psychiatric providers to appropriate services will increase during the regardless of IDN, geographic location, or market area.*

Outcome measures: Number of primary care/other provider referrals, number of follow-up plans.

Research Question 2: To what extent has the DSRIP Demonstration improved integration and coordination between providers? To what extent has the DSRIP Demonstration fostered the bi-directional and integrated delivery of physical health services, behavioral health services, SUD services, transitional care, and alignment of care coordination to serve the whole person? Was there any variation between IDNs/geographic regions/market areas?

Hypothesis 2.1: *Integration and coordination between providers within the IDNs will improve as a result of implementation of the DSRIP regardless of IDN, geographic location, or market area.*

Outcome measures: Fragmented Care, Transmission of Records, Alcohol/Drug Abuse Screening, Substance Use and Depression Screening, Receipt of Necessary Care Composite Score, Timely Receipt of Health Care Composite Score, Care Coordination Composite Score, Behavioral Health Composite Score, Mental Illness Hospitalization Visit Follow-up, Mental Illness ED Visit Follow-Up, Alcohol/Drug Dependence ED Visit Follow-Up, Ratings of Improvement in Care Coordination and Integration

Process measures: Patient Experiences of Care Integration and Coordination: Successes Resulting from Integration and Coordination Strategies, Barriers to Integration and Care Coordination, Information Sharing, Policies Supporting Coordination, Provider and Patient Experiences of Improved Care; Practice and Provider Experiences of Care Integration and Coordination: Integration and Coordination Strategies, Barriers to Integration, Information Sharing, Policies Supporting Coordination, Provider Experiences with Integration

Research Question 3: To what extent has the DSRIP Demonstration improved the capacity of the state's behavioral health workforce to provide quality, evidence-based, integrated care?

Hypothesis 3.1: *Capacity to deliver evidenced-based behavioral health and/or SUD treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.*

Outcome measures: Size and Training of the Provider Network: Number of MSWs, APRNs, and psychologists in the workforce to do integrated care and addiction care; Number of SUD peers trained in Intentional Peer Support and Mental Health First Aid; Number of Trainings Provided; Number of New Provider Certification or Licensure; Number of New Hires

Research Question 4: To what extent has the DSRIP Demonstration enhanced the state's health IT ecosystem to support delivery system and payment reform? Have changes to the IT ecosystem brought about by the DSRIP Demonstration specifically enhanced the IDNs in regard to the following four key areas: governance, financing, policy/legal issues and business operations?

Hypothesis 4.1: *Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.*

Outcome measures: Enhancements to the IT System, Perceptions of the Enhanced IT System, Perceptions of the Usability and Utility of the Enhanced IT System

Process measures: Stakeholder Perceptions of Governance Challenges and Successes, Financing Structures, Business Operations Implementation, Policy and Legal Issues

Hypothesis 4.2: *Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.*

Outcome measures: Care Coordination Composite Score, Ratings of Improvement in Care Coordination and Integration, Perceptions of Improved Information Exchange, CAHPS Information Technology Item Set

Process measures: Information Sharing, How IT Infrastructure has Helped Coordinate Care, Barriers to Using Health IT for Care Coordination, Leveraging Health IT for Care Management

Research Question 5: To what extent has the DSRIP Demonstration improved IDNs' readiness to transition to or implement Alternative Payment Models (APMs)? Are IDNs making adequate preparations in data infrastructure, financial infrastructure, and other required changes needed to achieve the goal of 50% of Medicaid provider payments to providers using APMs by the end of the demonstration period? Have the IDNs engaged with the state and managed care plans in support of that goal?

Hypothesis 5.1: *DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.*

Outcome measures: Number of IDNs transitioned to/implementing APMs, Projected percentage of payments made to providers under APM

Process measures: IDN Perceived Challenges Associated with Implementing APMs, IDN Perceived Benefits of Implementing APMs

D. Study Population

The population under study for this evaluation includes all Medicaid beneficiaries of all ages with behavioral health disorders or co-occurring physical and behavioral health disorders with full Medicaid benefits. Behavioral health disorders range from moderate depression and anxiety to substance use and severe mental illness.

Study Group

The study group for this evaluation will include all New Hampshire Medicaid fee-for-service and Medicaid Care Management Program beneficiaries, both children and adults, and adults receiving care through New Hampshire's Premium Assistance section 1115 demonstration, who have a behavioral health disorder and are served by an IDN during the Demonstration period (all beneficiaries residing in-state are served by IDNs). Because of the differences in financing and cost-sharing for Premium Assistance Program enrollees, the evaluation will also include a series of analyses that examine the Premium Assistance Program separately from traditional Medicaid. Individuals who do not have an eligible behavioral health disorder will be excluded from the study population. This other group will be used as a control for any overarching policy and clinical practice environmental changes occurring within the state and its Medicaid program over the course of the evaluation period.

Behavioral health disorders will be defined based on three criteria: beneficiaries receiving care at community mental health centers, or who have a primary diagnosis code for a behavioral health disorder, or who have therapeutic medication for a behavioral health disorder. Members who meet one or more of the eligibility criteria are considered to have a behavioral health disorder. Members who meet one or more of these criteria at any time during the Demonstration, from the date of first qualification to the end of the Demonstration, will be considered part of the study group.

The eligibility criteria include:

1. Members who are indicated as eligible recipients of behavioral health care received at Community Mental Health Centers (CMHC). Members meeting this criterion can be identified based on the assignment of one of the following codes in the Medicaid Management Information System (MMIS; Medicaid claims and encounter data). Codes are based on CMHC submission to Managed Care Organizations or paid fee-for-service claims.

   - U1 - Severe/Persistent Mental Illness (SPMI)
   - U2 - Severe Mental Illness (SMI)
   - U5 - Low Utilizer of Mental Health Services
   - U6 - Serious Emotionally Disturbed Child
   - U7 - Emotion Disturb Child/Interagency

2. Members who have a Medicaid claim on which the primary diagnosis code is for a behavioral health disorder.

   The following ICD-10 codes will be used to identify members with mental health disorders:

- F20-F29 Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
- F30-F34 Mood (affective) disorders
- F41-F44 Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders
- F53 Puerperal psychosis
- F60 Specific personality disorders
- F63 Impulse disorders
- F68 Other disorders of adult personality and behavior
- F84.0 Autistic disorder
- F84.9 Pervasive developmental disorders, unspecified
- F90 Attention-deficit hyperactivity disorders
- F91 Conduct disorders
- F93 Emotional disorders with onset specific to childhood
- F94 Disorders of social functioning with onset specific to childhood and adolescence

The following ICD-10 codes identify members with SUDs.

- F10 Alcohol related disorders (excluded: F10.21 Alcohol dependence, in remission)
- F11 Opioid related disorders (excluded: F11.21 Opioid dependence, in remission)
- F12 Cannabis related disorders (excluded F12.21 Cannabis dependence, in remission)
- F13 Sedative, hypnotic, or anxiolytic related disorders (excluded: F13.21 Sedative, hypnotic, or anxiolytic dependence, in remission)
- F14 Cocaine related disorders (excluded: F14.21 Cocaine dependence, in remission)
- F15 Other stimulant related disorders (excluded: F15.21 Other stimulant dependence, in remission)
- F16 Hallucinogen related disorders (excluded: F16.21 Hallucinogen dependence, in remission)
- F18 Inhalant related disorders (excluded: F18.21 Inhalant dependence, in remission)
- F19 Other psychoactive substance related disorders (excluded: F19.21 Other psychoactive substance dependence, in remission)
- F55 Abuse of non-psychoactive substances
- K29.2 Alcoholic gastritis
- K70.1 Alcoholic hepatitis

3. Members who have a Medicaid pharmacy claim for a behavioral health disorder. The following specific therapeutic class codes identify these members.

- H2D Barbiturates
- H2E Non-Barbiturates, Sedative-Hypnotic
- H2F Anti-Anxiety Drugs
- H2G Anti-Psychotics, Phenothiazines
- H2H Monoamine Oxidase (MAO) Inhibitors
- H2M Bipolar Disorder Drugs
- H2S Serotonin Specific Reuptake Inhibitor(SSRI)
- H2U Tricyclic Antidepressant & Related Non-Selective Reuptake Inhibitor
- H2V Anti-Narcolepsy/Anti-Hyperkinesis
- H2W Tricyclic Antidepressant/Phenothiazine Combination
- H2X Tricyclic Antidepressant/Benzodiazepine Combination
- H7B Alpha-2 Receptor Antagonists Antidepressant
- H7C Serotonin-Norepinephrine Reuptake-Inhibitor (SNRIs)
- H7D Norepinephrine & Dopamine Reuptake Inhibitors (NDRIs)
- H7E Serotonin-2 Antagonist/Reuptake Inhibitor (SARIs)
- H7J Monoamine Oxidase (Mao) Inhibitors -Non-Selective & Irreversible
- H7O Antipsychotic, Dopamine Antagonist, Butyrophenones
- H7P Antipsychotic, Dopamine Antagonist, Thioxanthenes
- H7R Antipsychotic, Dopamine Antagonist, Diphenylbutylpiperidines
- H7S Antipsychotic, Dopamine Antagonist, Dihydroindolones
- H7T Antipsychotic, Atypical, Dopamine, & Serotonin, Antagonists
- H7U Antipsychotic, Dopamine & Serotonin Antagonist
- H7X Antipsychotic, Atypical, D 2 Partial Agonist/Serotonin Mix
- H7Y Treatment For Attention Deficit Hyperactivity Disorder, Norepinephrine Reuptake Inhibitor Type
- H7Z Serotonin Specific Reuptake Inhibitor (SSRIs)/Antipsychotic, Atypical, Dopamine & Serotonin Antagonist Combination
- H8B Hypnotics, Melatonin Receptor Agonists
- H8D Hypnotics, Melatonin & Herb Combination
- H8F Hypnotics, Melatonin Combination Other

- H8G Sedative-Hypnotic, Non-Barbiturate/Dietary Supplement

- H8H Serotonin-2 Antagonist, Reuptake Inhibitor/Dietary Supplement Combinations

- H8I Selective Serotonin Reuptake Inhibitor (SSRIs)/Dietary Supplement Combinations

- H8M Treatment For Attention Deficit Hyperactivity Disorder -Selective Alpha-2 Adrenergic Receptor Agonist

- H8P Serotonin Specific Reuptake Inhibitor (SSRI) & 5Ht1A Partial Agonist Antidepressant

- H8Q Narcolepsy/Sleep Disorder Agents

- H8T Serotonin Specific Reuptake Inhibitor (SSRI) & Serotonin Receptor Modifier Antidepressant

- H8W Antipsychotic-Atypical, D3

- J5B Adrenergic, Aromatic, Non-Catecholamine

- C0D Anti-alcoholic Preparations

- H3T Narcotic Antagonists

- H3W Narcotic Withdrawal Therapy Agents

Subpopulation Group

Outcomes for a subpopulation of beneficiaries with co-occurring physical and behavioral health disorders will also be analyzed as part of this evaluation. The subpopulation will include beneficiaries in the study group who also have a primary or secondary diagnosis for one of the following physical health conditions that commonly co-occur in individuals with behavioral health disorders: diabetes, asthma, chronic obstructive pulmonary disease, and cardiovascular disease. Subpopulation group members will be identified through claims using HEDIS 2017 value sets inclusion and exclusion criteria. Beneficiaries who do not have a qualifying behavioral health disorder and eligible co-occurring physical health condition will be excluded from the subpopulation group.

Comparison Groups

The entire population of the state falls within the catchment areas of the IDNs. Since Medicaid beneficiaries with behavioral health disorders are required to seek care within their IDN, there is no direct comparison group available for this evaluation. In designing the evaluation plan a variety of potential comparison groups were considered including the creation of a point in time comparison group of individuals with new behavioral health or substance use disorders. The creation of a comparison group of new diagnosis is not feasible for a number of reasons including:

- Using claims data to determine a new diagnosis is problematic as identifying individuals with a truly new diagnosis requires complete medical histories on individuals; and

- The sample size of members with new diagnoses will likely be substantially smaller than the study group, making it difficult to examine statistical differences between the two groups.

Therefore, the state is proposing a one-group quasi-experimental pretest-posttest design with multiple observation points. Given the lack of a feasible control group, a pre-posttest design is the most appropriate and robust study design. However, the state will work with the independent evaluator to further explore the possibility of identifying the most appropriate comparison group.

The pre-intervention comparison group will be selected based on the same eligibility requirements as the study group. Each eligible pre-intervention comparison group member will be attributed to an IDN using the same method used for attribution during the study period based on claims/encounters and member residence geography. Below is a description of the attribution steps, in hierarchical order:

1. Member has a recent relationship with a Nursing Facility in an IDN based on claims.
2. Member has a recent relationship with a Community Mental Health Center in an IDN, based on MCO reported CMHC association and claims for non-MCO members.
3. Member has a recent relationship with a primary care provider in an IDN, based on claims/encounters.
4. Member has a recent relationship with a behavioral health provider in an IDN, based on claims/encounters.
5. Member is attributed to an IDN based on the relationship between the member's current residence and the IDN defined geographic region/market area.

The analysis will also include a comparison group for falsification tests that will be comprised of beneficiaries who have no behavioral health disorders, as this population is not expected to be impacted by the Demonstration. The individuals within this group will be identified using eligibility and claims data. The study group and the comparison groups will be examined for differences in outcomes, effectiveness of care, utilization, and cost of care. For a more detailed description of the proposed falsification tests refer to the Research Methods and Data Analysis Section.

E. Data Sources and Collection Plan

The evaluation will include multiple sources and forms of qualitative and quantitative research methods and data to comprehensively evaluate the DSRIP Demonstration research hypotheses. These data include administrative data (e.g., Medicaid claims and encounter data), survey and in-depth interview data collected specifically for this evaluation, and documentation provided by the IDNs and in quarterly operational reports.

A summary of the data sources, samples, and analytic methods for this evaluation is contained in the table below, followed by a detailed description of the proposed data sources and data collection activities.

Table 1. Summary of Data Strategy and Analysis Plan, by Data Source

Data Source for Measurement	Sample	Analysis Method
Behavioral Risk Factor Surveillance System (BRFSS)	Medicaid beneficiaries ≥18	Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and regression annually
Data from Non-Claim Discharges from New Hampshire Hospital	Medicaid beneficiaries of all ages who have a behavioral health disorders	Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and regression annually
HEDIS Measures	Medicaid beneficiaries of all ages who have a behavioral health disorders	Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and regression annually
Medical Management Information System (MMIS) – Medicaid Claims and Encounter data	Medicaid beneficiaries of all ages who have a behavioral health disorders	Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and regression annually
Premium Assistance Program Encounter data	Medicaid beneficiaries of all ages who have behavioral health disorders	Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and regression annually
IDN Documents	All Documents related to the IDN workforce size and training	Document review
IDN Electronic Health Records	Medicaid beneficiaries of all ages who have a behavioral health disorders	Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and regression annually
Stakeholder Interviews	1. Medicaid beneficiaries ≥18 who have a behavioral health disorder and had at least 1 visit in the previous 12 months	1. Thematic analysis
	2. Medical and community providers in IDNs who treat beneficiaries with a behavioral health disorders	2. Thematic analysis
	3. Medicaid administrator(s), NH DHHS administrator(s), Medicaid and NH DHHS legal staff, managed care organization administrators, IDN administrators	3. Thematic analysis
Stakeholder Surveys	1. Medicaid beneficiaries ≥18 who have a behavioral health disorder and had at least 1 visit in the previous 12 months	1. Mann-Whitney U-test, pre-DSRIP vs. post-DSRIP and annually
	2. Medical and community providers in	2. Mann-Whitney U-test,

	IDNs who treat beneficiaries with a behavioral health disorder	pre-DSRIP vs. post-DSRIP and annually
	3. IDN and Medicaid stakeholders who are knowledgeable about the health information technology system	3. Pre-DSRIP vs. post-DSRIP comparison

Administrative Data

The DSRIP Demonstration evaluation will synthesize information from several sources of administrative data to assess the impact of the demonstration on health and health care outcomes and address evaluation hypotheses 1.1-1.5. These data sources are: Medicaid claims and encounter data, IDN electronic health record (EHR) data, non-claim discharges from New Hampshire Hospital, and HEDIS data. Appendix A lists each of the research hypotheses, data sources, and associated outcome and process measures. The Independent Evaluator will have access to a unique identification number for each person that is linked across the administrative data sets.

Use of fee-for-service claims and managed care encounters will be limited to final, paid status claims/encounters. Interim transaction and voided records will be excluded as these types of records introduce a level of uncertainty that can impact reported rates.

Medicaid Management Information System

Claims and Encounter Data - The Medicaid Management Information System (MMIS) is the repository for all state-based Medicaid claims and encounters data, in accordance with CMS standards and protocols. Claims and encounter data contain service utilization data, such as health care visits, the types of care received, and payments for each service provided. Access to Medicaid claims and encounters will be required to optimize the information available to calculate various measures. In general, Medicaid encounters are received and processed by the state's fiscal agent on a weekly basis with a historical 'run-out' of three months.

Member Demographics - In addition to service utilization data, the DSRIP Demonstration evaluation will require access to supplemental Medicaid data contained in the state's MMIS, such as member demographics, eligibility/enrollment, and provider information. Demographic and financial data will be used for the calculation of specific measures. For example, members' age is used to define the comparison group relative to the distribution of the population in the study group. Additionally, fields such as gender will be used for the prenatal and postpartum measures. Finally, key financial data will be used when assessing gaps in coverage.

Eligibility/Enrollment - The eligibility/enrollment file will also be used to create the study and comparison groups, as well as to assess health insurance type (i.e., fee-for-service, Medicaid Managed Care Program or Premium Assistance), and enrollment gaps.

Provider - Provider data, such as IDN, office location, and specialty, will be used to assess the availability of services for both study and comparison groups.

Premium Assistance Program Encounter Data

Encounter Data – New Hampshire has established a Memorandum of Understanding (MOU) with the NHHPP's Premium Assistance Program (PAP) qualified health plans (QHPs) to provide encounter data to the state. The QHPs submit data to NH DHHS using the format and quality requirements of the state's Comprehensive Health Care Information System (CHIS), New Hampshire's All Payer Claims Database. Existing CHIS data quality assurance processes will be employed to ensure the data are complete and of high quality. Since the CHIS data normally contain encrypted identifiers, the QHPs will submit to NH DHHS a separate duplicate feed of PAP members that contains identifiers, including member Medicaid ID, to allow linkage of the data to Medicaid membership and claims.

Qualified Health Plans on a monthly basis submit encounter data to DHHS in a detailed format that provides the same information as managed care encounter data. This data is currently being stored in the DHHS Enterprise Data Warehouse. The data will eventually be migrated to use the MMIS as the repository.

IDN Electronic Health Records

Although the majority of measures for this study will be generated from claims using HEDIS specifications, in some cases electronic health records (EHR) may also be required or be the appropriate source of data. One of the primary goals of the statewide HIT workgroup is to work with IDNs to establish minimum standards of quality and consistency around a defined set of EHR metrics. To the extent possible, EHRs will be used to generate data on the standardization and implementation of screening assessments and counseling, provision of services, and health outcomes. They will also be used to assess the sharing of records across providers.

Data from the Electronic Health Record would be ideal to measure wait time for metrics such as inpatient psychiatric care (hypothesis 1.7), however, that data is not yet available in a manner appropriate for evaluation. The Independent Evaluator and the state will need to select and employ one of the following options:

1) The preferred option is to establish a system of data collection for wait time that would track the number of Medicaid beneficiaries, both adults and youth, waiting for inpatient psychiatric care in any hospital in the state, (including voluntary and involuntary admissions, and ED boarding), each day during the quarter/year, and how long each member has waited. Given that this tracking system would have to be developed, the need to collect baseline data would create a delay in measurement of change in the metric. The entity(ies) that implements the tracking system may include managed care organizations (MCOs), hospitals, and/or another entity not yet identified.

2) Should the first option not be feasible, a second option would be to use the best available data which is the daily bed availability data reported by New Hampshire Hospital. This system tracks the time from when adults and youth are referred specifically to their inpatient units to the time they are admitted. However, this data is limited to individuals specifically referred to New Hampshire Hospital units and it does not fully represent all Medicaid beneficiaries waiting for inpatient psychiatric admission to other facilities.

Data from Non-Claim Discharges from New Hampshire Hospital

Discharge data from New Hampshire Hospital for stays that do not generate a Medicaid claim due to the IMD exclusion for payment will be used to generate annual estimates of the number and length of inpatient psychiatric stays and re-admissions during the pre-Demonstration and Demonstration period. The Independent Evaluator will access special extracts from this data source in order to examine all outcomes.

Health Care Effectiveness Data and Information Set and the DSRIP Outcome Measure Set

HEDIS is a tool used by more than 90% of America's health plans to measure performance on important dimensions of care and service. HEDIS consists of 81 measures across five domains of care. Nine of the Demonstration outcome measures are drawn from HEDIS measures to address Hypothesis 1.1 (see Appendix A). For this evaluation, HEDIS measures calculated by NH DHHS for IDN outcome measurement will be used to analyze outcomes in the sample population both at the state level and the IDN level in cases when the sample population is the same.

NH Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. The NH BRFSS is an annual random-digit-dialed telephone survey of NH adults (18+) conducted by NH DHHS and supported by a grant from the Centers for Disease Control and Prevention. The primary focus of the survey is on behaviors that are linked with population morbidity and mortality (e.g. diabetes, heart disease, stroke, and injury) and on topics including diet, exercise, weight, tobacco and alcohol use, injuries and preventative medical care. The survey estimates the health status and the prevalence of various risk factors among respondents, including Medicaid beneficiaries. NH BRFSS data will be used to assess trends in population health measures. NH BRFSS data from 2014 will serve as baseline for select population health measures. Data from NH BRFSS surveys to be conducted in 2017 and 2020 will be used to examine changes in population health over the course of the intervention. The NH BRFSS includes a question to distinguish source of health care coverage.

Stakeholder Surveys

Stakeholder surveys will be used to assess aspects of the DSRIP Demonstration that cannot be gathered from administrative health and health care record data. Four groups will be surveyed: Medicaid beneficiaries, health care and community-based providers, IDN administrators, and health information technology (HIT) stakeholders. Survey topics include: Improvements in Care Coordination and Integration, Perceptions of the IDNs, Health Information Technology, Enhancements to the Information Technology System, and Demographic Characteristics.

Beneficiaries will be surveyed on improvements in their care coordination and integration, experiences with health care access, quality of care, and perceptions of the IDNs and HIT. Sample questions for this survey have been drawn from the Consumer Assessment of health care Providers and Systems (CAHPS) Clinician and Group survey and its supplements. The CAHPS is a set of surveys maintained by the US Agency for health care Research and Quality (AHRQ) and used widely by health care providers and agencies to assesses and improve current practice.

Sample questions for this survey have been drawn from the US Agency for Healthcare Research and Quality (AHRQ)'s Consumer Assessment of health care Providers and Systems (CAHPS) Clinician and Group survey and CMS's Adult Qualified Health Plan Enrollee Experience Survey.

IDN administrators and providers will be surveyed on improvements in care coordination and integration. IDN HIT stakeholders will be surveyed on enhancements to the information technology system. The Independent Evaluator will develop surveys and work with the IDNs to identify administrators and HIT stakeholders based on the statewide HIT assessment completed by the IDNs, and synergize the surveys with the resulting statewide HIT plan, as appropriate.

Beneficiaries and providers will be stratified and then randomly selected to participate in the survey. Beneficiaries will be stratified by IDN, evidence of a behavioral health disorder, gender, and age. Providers will be stratified based on IDN and type of provider (e.g., medical doctor, case manager, psychologist, community service provider, etc.). IDN administrators and HIT stakeholders will be identified by the Independent Evaluator; after identifying the number of key administrators and HIT stakeholders, the Independent Evaluator will determine whether a sampling frame is necessary and if so, how the sample should be stratified. Stratified random sampling of this type ensures that members of all key groups of interest are selected to participate in the survey.

Survey data will be anonymous and confidential. To ensure privacy, data from the surveys will not be linkable to the administrative or other forms of data used in this evaluation. The surveys will include closed-answer (e.g., yes/no, Likert scale) and open-ended questions. Draft surveys, except for the CAHPs/QHP surveys will be developed specifically for this evaluation and designed for each stakeholder group. The Independent Evaluator will review the drafts and finalize the surveys upon approval by NH DHHS. NH DHHS will submit the survey questions to CMS for review prior to administration. Surveys will be conducted through an online survey platform (e.g., Qualtrics) and through the mail as paper-and-pencil surveys. Mailed surveys will include a stamped and addressed return envelope to facilitate participation. Pre-survey letters will be sent to selected participants. Three follow-up letters will be sent to remind respondents to participate. All mailings will be created and sent from the Independent Evaluator's office.

Key Stakeholder Interviews

Semi-structured interviews will be utilized to gather in-depth data from stakeholders on aspects of the DSRIP Demonstration that cannot be gathered from administrative health and health care record data or stakeholder surveys. Four groups will be interviewed: Medicaid beneficiaries, health care and community-based providers, IDN administrators, and HIT stakeholders. Primary domains of interest include: experiences with health care, experiences with care coordination and integration, perceptions of the health information technology systems during the DSRIP Demonstration, transitioning to APMs, and information on demographics and practice characteristics. The same stratified random sampling selection process used for the stakeholder surveys will be used for the stakeholder interviews.

Semi-structured interviews will be conducted by phone or face-to-face, last approximately 45 to 60 minutes, and be audio-taped. All audio-tapes will be transcribed verbatim; pseudonyms will be assigned in order to protect the confidentiality of respondents. The state and its employees

will not conduct any of the interviews, transcribe interviews, or have access to the audio-tapes or transcripts. The tapes will be destroyed after transcription.

Below is an overview of the topics included in the interviews. Interview questions will be finalized by the Independent Evaluator and approved by NH DHHS. NH DHHS will submit the interview questions to CMS for review prior to administration.

Beneficiary Interviews: Interviews will be conducted with approximately 10 beneficiaries per IDN (stratified by IDN), for a total of approximately 70 beneficiary interviews, and will focus on documenting member experiences with health care access and the quality of their care during the Demonstration. Topics will include: experience with IDNs, usual source of care, barriers to access, and perceptions of care coordination and integration. The interview will include questions such as:

1. How were you referred to treatment for your behavioral health or substance use disorder?

2. Are the services you received convenient in terms of location and hours?

3. Is your primary care provider aware of your behavioral health and/or substance use disorder? Do they correspond with your other providers?

4. How do you perceive the quality of the care you receive for your behavioral health and/or substance use disorder?

5. Does your provider have an online web portal or other technology based solutions? If so, do you utilize these resources and how have they impacted your communications with your provider and the management of your health?

Provider Interviews: Provider interviews will be conducted with approximately 35 providers stratified by IDN, and focus on documenting providers' experiences with care coordination and integration during the DSRIP Demonstration, as well as perceptions of the impact of HIT systems in assisting with ongoing management of patient care. The interview will include questions such as:

1. What strategies were successful at promoting integration and care coordination?

2. What are some of the barriers to care coordination and integration for behavioral health and substance use disorders?

3. What were some of the barriers to information-sharing between providers?

4. What resources do providers need to implement evidenced-based care for behavioral health and substance use disorders?

IDN Administrator and Other Stakeholder Interviews: Semi-structured interviews will be conducted with two administrators per IDN and focus on documenting the IDN implementation experience. The interview will include questions such as:

1. What were the successes and challenges regarding IDN planning, implementation and operation?

2. What is the plan for program sustainability? What are the challenges associated with ongoing program maintenance and expansion and required policy changes?

3. What strategies were successful at helping to transition to APMs?

4. What are the benefits and challenges associated with implementing APMs within and across geographic region/market area?

5. How has HIT improved care coordination, integration, and ongoing patient monitoring?

Health Information Technology (HIT) Stakeholder Interviews: Interviews with HIT stakeholders will focus on gathering in-depth information on perceptions of the DSRIP HIT enhancement strategies, including whether HIT has enhanced governance, finance, policy/legal issues, and business operations. Approximately 20 interviews will be conducted with stakeholders, including Medicaid data administrator(s), DHHS staff, and MCO administrators. The interview will include questions such as:

1. What were some notable successes and challenges to expanding the state's HIT infrastructure?

2. What organizational characteristics had the most influence, positive or negative, on the ability to implement HIT strategies in the IDNs?

3. What HIT strategies where the most challenging to implement? Why?

4. What difficulties were encountered in developing HIT data sharing strategies?

5. What strategies were used to address policy, legal, and business operations issues?

IDN Data

The NH DHHS has a contracted relationship with the Administrative Lead organizations of each IDN to ensure that data capturing, compiling, analyzing, and submission to NH DHHS is part of the IDNs' compliance with the DSRIP Demonstration. These contracts allow for the secure and managed exchange of client, clinical, and performance data between NH DHHS and the IDN Administrative Leads. The Independent Evaluator will work with NH DHHS and the IDN Administrative Leads to access the data needed to complete the evaluation. The Independent Evaluator must maintain the security of the data at all times in accordance with NH DHHS requirements.

In addition to the measure data submitted to NH DHHS by the IDNs, data on performance, HIT improvements, and the hiring and training of personnel will be used to examine enhancements to the HIT system and the size and training of the IDNs' provider networks.

F. Research Methods and Data Analysis

The variety of outcomes and potential implications of the DSRIP Demonstration requires the use of both quantitative and qualitative data analysis techniques. The implementation and reporting of both of these methods for the evaluation will meet traditional standards of scientific and academic rigor, as appropriate and feasible for each aspect of the evaluation: evaluation design, data collection and analysis, and the interpretation and reporting of findings. The Demonstration evaluation will use the best available data, use controls and adjustments where appropriate and available, and report the limitations of data and the limitations' effects on interpreting the results. All research hypotheses and methods will incorporate results from sensitivity, specificity, and power analyses to ensure the validity of the evaluation findings.

The specific choice of methods is dependent upon the measure under discussion and the theoretical and empirical implications for policy-relevant and defensible results. For this reason, the specific methods are detailed within each of the measures used in the evaluation (See Appendix A). If the Demonstration continues beyond its originally allotted timeframe, the measures will be analyzed according to the aforementioned techniques.

Quantitative Analysis

To measure DSRIP Demonstration outcomes, the Demonstration evaluation includes a pre-post design to assess the statewide impact of the Demonstration on outcome measures by examining trends in cost, utilization, and quality of care for Medicaid beneficiaries with behavioral health disorders enrolled in IDNs before and after the implementation of the Demonstration. Although an interrupted time series design is often considered to be a more robust quasi-experimental design, that methodology is not feasible for this evaluation because the majority of study outcomes are based on annualized HEDIS measures. Collecting the recommended minimum measurement time points for a time-series design (i.e., eight pre- and eight post-intervention measurement points) is not possible because only a small number of the proposed outcome measures can be produced quarterly. In order to reduce the plausibility of maturation and regression threats, we are incorporating multiple pre and post measurement points.

The DSRIP Demonstration evaluation will use quantitative methods to assess the receipt of services, estimates of health care visits and costs of visits, and analyze closed-ended survey questions. Quantitative analytic methods will also be used to compare outcomes and the extent of existing health and health care differences between sub-populations as well as between IDNs. Below is a description of the analytic strategies that will be used to examine the research hypotheses.

Descriptive Statistics: Descriptive analyses will examine results for selected measures for each year in the pre and post periods. For example, bivariate analyses will be used to explore trends in beneficiaries' access to care, utilization of services and cost of care. Three descriptive quantitative analysis methods will be used to examine health and health care outcomes: McNemar's chi-square, Mann-Whitney U Test, and Wilcoxon Signed Rank Test. These nonparametric tests are appropriate when data are (1) categorical or (2) continuous but do not meet the assumptions (e.g., normality) used by parametric tests. Parametric analyses (e.g., t-tests, etc.) may be used as appropriate. The Independent Evaluator will test whether continuous measures (e.g., number of visits, etc.) meet the assumptions of parametric analyses. If these measures do not meet the assumptions of parametric tests, non-parametric methods (e.g., Mann-Whitney U) will be used to analyze the data. The non-parametric tests will be used to assess whether any differences found between the pre- and post-test periods are statistically significant (i.e., unlikely to have occurred in the data through random chance alone). The traditionally accepted risk of error ($p \leq 0.05$) will be used for all comparisons.

Multivariate Analysis: A pre-post design will be used to examine the statewide impact of the Demonstration on outcome measures Key outcomes will be calculated annually for a three year pre-intervention period (calendar years 2013, 2014, and 2015) and annually for the five year demonstration period (calendar years 2016, 2017, 2018, 2019, and 2020). Regression models accounting for members in more than one year (clustering) will be used to assess the rate of change over time in study outcomes for the study group. To assess change over time, the evaluation will use Poisson or negative binomial regression models for the utilization measures,

generalized linear models for the cost measures, and logistic regression for the quality measures. Age, gender, risk level, and IDN will be controlled for in the models examining cost and utilization measures. Statistically significant results will be reported based on $p \leq 0.05$.

Total cost of care will include all costs (administration and medical) that were paid by NH Medicaid. Cost of care for specific services will be estimated for managed care encounters based on a list of standard costs for each service type (CPT codes and revenue codes). Standard costs for various types of service can either be purchased or generated from analysis of fee-for-service claims. The specific method used will be determined by the evaluator after reviewing the claims/encounter data. Costs will compare those incurred in the pre-DSRIP Demonstration period to those incurred during the DSRIP Demonstration period, as well as between beneficiaries with and without a behavioral health disorder, where specified and appropriate. All health care costs will be inflated or deflated to a base year set by the Independent Evaluator. The Independent Evaluator will seek recommendations from subject matter experts on which specific measures to use to inflate or deflate the Demonstration's Medicaid data.

Additional regression analyses will be used to explore the impact at the individual IDN level as well as across IDNs. Multilevel modeling may also be conducted to examine the impact of the DSRIP Demonstration, accounting for member and IDN characteristics (e.g., provider density). Regression methods have a long history of generating empirically robust results when the evaluation model is correctly specified. The Independent Evaluator will utilize clinical subject matter experts when building multivariate models and identifying relevant control variables.

Validation: Because all eligible individuals are automatically enrolled in the Demonstration, the Independent Evaluator will be limited to a non-experimental study design, with limited opportunity to designate a control group. Because of this, it will be difficult to isolate whether changes observed over time are attributable to the Demonstration, or to pre-existing trend or co-occurring environmental factors. We propose two strategies for addressing this challenge and enhancing the validity of the study.

First, to control for external context and examine whether any changes in beneficiary outcomes can be attributed to DSRIP, the evaluator will assess changes in outcomes of interest over time for a group of individuals without behavioral or substance use disorders. This analysis will compare the study group to beneficiaries without behavioral health conditions on outcomes that we would not expect to be impacted by the demonstration using a difference-in-difference (DID) approach.

DID is an econometric technique used to control for time trends in the outcomes of interest by comparing two groups over a study period. The difference-in-difference design will help to control for factors external to the Demonstration by examining whether a group not affected by the DSRIP experiences comparable changes in health care use and quality. For this evaluation, the model will rely on measures of outcome variables before and after implementation of the Demonstration for beneficiaries with (study group) and without (comparison group) behavioral health disorder diagnoses. Because behavioral health metrics will not be particularly relevant to the non-Demonstration Medicaid population, the state will limit the DID analysis to a select number of physical care metrics including preventative screenings, cholesterol screening, emergency department visits, avoidable hospital admissions and costs of care for non-behavioral health services.

A second approach under consideration is the use of falsification tests in which the Independent Evaluator will analyze the change in metrics that would not be anticipated and would be related to the Demonstration. However, the comprehensive and integrative nature of the DSRIP is such that the state expects to see improvements in a wide range of health care process and outcome measures. For example, improved management of behavioral health issues should ultimately lead to increased use of preventive care screenings and lower costs. Thus, it is hard to identify variables that would be appropriate for falsification testing; however, this will be discussed further with the Independent Evaluator to determine if there are variables that could be used.

Additional Analysis: When appropriate, supplemental analyses will be conducted to further investigate and understand the impact of the DSRIP Demonstration. These analyses may include the stratification of results by beneficiary type, key demographic, or IDN characteristics. For example, as part of the pre-posttest and exploratory analysis, when applicable, the state will stratify measures that include multiple diagnoses to examine the impact of the intervention on key outcomes by disorder type for analysis. Moreover, because of the differences in financing and cost-sharing for NHHPP enrollees in QHPs, the evaluation will include a series of analyses examining the NHHPP population separately from traditional Medicaid beneficiaries. When possible, evaluation results will incorporate national or state-defined standards and/or benchmarks for comparison purposes. In addition, the Independent Evaluator will collect data and perform an actuarial analysis to monitor compliance with NH DHHS' budget neutrality agreement with CMS. Together, the findings from these sub-group analyses will further inform the state regarding the impact of the DSRIP Demonstration.

Qualitative Analysis

Qualitative methods are the preferred method for capturing in-depth data on topics that cannot be easily reduced to closed-ended questions or numeric estimates. The evaluation relies on qualitative methods to investigate stakeholder experiences of the DSRIP Demonstration as well as to describe changes in the size and training of the IDNs' workforces. Two qualitative methods will be used:

1. **Thematic Analysis:** These analyses examine semi-structured interview data for patterns across interviews. Themes will be defined based on their appearance in the data and not on a pre-defined structure. For example, beneficiaries may describe the Demonstration as improving the coordination of care in six unique ways and impeding their care in four ways.

2. **Document Review:** This method is useful for gaining in-depth data, including changes in the workforce and its training on behavioral health disorders during the course of the demonstration as well as APM implementation across IDNs.

Thematic analysis will be conducted separately on each semi-structured interview transcript, for each group of interviewees using an inductive approach. Patterns in the transcripts will be identified and grouped into themes. Themes will be checked against the original transcripts for validity. Document review will be conducted on an ongoing basis, separately for each IDN. Items addressing improvements to the workforce size or training will be noted and additional information on those changes will be sought, as necessary. Review of quarterly operational reports will also be conducted on an ongoing basis, and will focus on any recommended changes to state policy and procedures.

To ensure inter-coder reliability and the reliability of the analyses, both methods will utilize at least two coders. Neither method is intended to support comparison between groups of interviewees or follow principles of statistical significance.

G. Limitations

The DSRIP Demonstration evaluation is limited by the lack of a true comparison group. All Medicaid beneficiaries are subject to participation in the demonstration and will receive care impacted by the development and implementation of HIT and IDNs across the state. As a result, comparisons can only be made among beneficiaries subject to the demonstration. Furthermore, outcomes may improve for all beneficiaries regardless of the presence of a behavioral health disorder. Therefore, the DSRIP Demonstration evaluation may show improvements in outcomes when compared to baseline but no improvements in comparison to people without behavioral health disorders.

The evaluation is also limited by its reliance on diagnostic codes, eligibility codes for CMHCs, and prescription drug codes to identify the beneficiary population with behavioral health disorders. These codes may not capture all behavioral health disorders, especially if they are not ascertained by clinicians. Reliance on these codes may reduce outcome differences between the beneficiary populations with and without behavioral health disorders, resulting in misleading findings on the impact of the demonstration.

Additionally, not all the data available for this evaluation is ideal. In some cases, the 'best available' data was selected that addresses the hypothesis as closely as possible. In other cases, the state will work with the Independent Evaluator to explore options for identifying best available data and for developing the ideal data, and select the best option.

The DSRIP Demonstration proposes to effect a dynamic change in the health care delivery system for people with behavioral health disorders. Systemic change does not occur quickly and, in this case, will likely take longer than the five years for which the Demonstration has been approved. Therefore, all findings must be interpreted with sensitivity toward the scope of the attempted change in the system and its long-term potential beyond the Demonstration period.

Finally, given the high levels of need for expansion and improvement in behavioral health in New Hampshire, especially among Medicaid beneficiaries, multiple state efforts are currently being implemented to address these shortfalls.

3. EVALUATION IMPLEMENTATION

A. Selection of the Independent Evaluator

Based on state protocols, NH DHHS will follow established policies and procedures to procure an independent entity or entities to conduct the NH DSRIP Demonstration evaluation. Upon CMS approval of this evaluation design, the state will undertake a competitive procurement for the Independent Evaluator. In a competitive bidding process, a Request for Proposals (RFP) will be developed and issued by NH DHHS. This RFP will describe the scope of work, the major tasks, and contract deliverables, with a bidder's conference or Q&A session to be held to address questions from potential bidders. Proposals received will undergo review by a panel of NH DHHS staff using a scoring system developed for this RFP. Applicants will be evaluated on the basis of related work experience, staffing level and expertise, data analytic capacity, knowledge of state programs and populations, environment and resources, and resource requirements. The independent entity selected for the evaluation will be screened to assure independence and freedom from conflict of interest. The assurance of such independence will be a required condition by the state in awarding the evaluation contract. It is expected that a contract will be finalized and work will begin by late fall of 2017.

B. Evaluation Cost Estimates

As required by the CMS STC 72, NH DHHS will procure an Independent Evaluator to conduct the evaluation. The cost of conducting the evaluation will be a key variable in the competitive bid process. DHHS estimates a cost of two million dollars, based on actual costs of operating current NH 1115 waiver evaluations while considering the complexity and rigor of the DSRIP Evaluation Design. The table below displays the proposed budget shell that will be used during the procurement of an Independent Evaluator for submitting total costs for the Demonstration. Costs will be broken out by staff, estimated hours, costs, and anticipated subcontractors.

Proposed Budget Template for NH DSRIP			
Staff Title	**Year**		
	Loaded Rate	**Hours**	**Total**
Executive Director, Research & Analysis			
Project Director, Research & Analysis			
Project Director			
Project Manager			
Project Support			
Analyst			
Database Developer			
Reports Team			
Subtotal Direct and Indirect Costs			
Subcontractor - Statistician			
Subcontractor –Survey Vendor			
Subcontractor – Actuarial Vendor			
Annual Total			

C. Reporting

Following the annual evaluation of the NH DSRIP Demonstration and subsequent synthesis of the results, NH DHHS and the Independent Evaluator will prepare a report of the findings and describe how the results compare to the research hypotheses. Both the Interim Evaluation Report and the Final Evaluation Report will be produced in alignment with the STCs and the schedule of deliverables listed in the timeline below.

Each evaluation report will present findings in a clear, accurate, concise, and timely manner. At a minimum, the interim final evaluation reports will include the following sections:

1) The **Executive Summary** concisely states the goals for the Demonstration, the evaluation questions and hypotheses tested in the report, and updates on questions and hypotheses scheduled for future reports. In presenting the key findings, budget neutrality and cost-effectiveness will be placed in the context of policy-relevant implications and recommendations.

2) The **Demonstration Description** section focuses on programmatic goals and strategies, and expected outcomes. This section succinctly traces the development of the program from the recognition of need to the present degree of implementation. This section will also include a discussion of the state's roll-out of the NH DSRIP Demonstration along with its successes and challenges.

3) The **Study Design** section contains much of the new information in the report. Its five sections include: evaluation design with the research hypotheses and associated outcomes, measures and type of study design; impacted populations and stakeholders; data sources that include data collection fields, documents, and collection agreements; analysis techniques with controls for differences in groups or with other state interventions, including sensitivity analyses when conducted; and limitations for the study.

4) The **Findings and Conclusions** section is a summary of the key findings and outcomes for each research question and hypothesis. This section focuses on the successes, challenges, and lessons learned from the implementation of the Demonstration.

5) The **Interactions with Other State Initiatives** section contains a discussion of this Demonstration within an overall Medicaid context and consideration for the long-range planning efforts by the state. This discussion includes the interrelations between the Demonstration and other aspects of the state's Medicaid program, including interactions with other Medicaid waivers, and any other major efforts affecting service delivery, health outcomes, and the cost of care under Medicaid.

All reports, including the DSRIP Demonstration Evaluation Design, will be posted on the state Medicaid Website within 30 days of the approval of each document to ensure public access to evaluation documentation and to foster transparency. The state will work with CMS to ensure the transmission of all required reports and documentation occurs within approved communication protocols.

D. Projected Evaluation Design Timeline

Table 2. NH DSRIP Demonstration Evaluation Design Projected Timeline	
Deliverable	**Date**
NH DHHS submits draft NH DSRIP Evaluation Design to CMS for comments and posts to the state's website for public comment	10/18/2016
NH DHHS receives comments from CMS (no later than 60 business days of receipt of draft Evaluation Design)	By 1/10/2017
NH DHHS submits final Evaluation Design (no later than 60 calendar days of receipt of CMS comments) and posts to the state's website	By 2/1/2017
NH DHHS procures an independent evaluator	By 11/1/2017
NH DHHS submits draft Interim Evaluation Report to CMS for comment (90 calendar days following completion of DY 4)	By 3/31/2019
NH DHHS receives comments from CMS (within 60 business days)	By 6/21/2019
NH DHHS submits final Interim Evaluation Report to CMS (within 60 calendar days of receipt of comments)	By 8/21/2019
NH DHHS submits draft Final Evaluation Report to CMS for comment	By 9/30/2021
NH DHHS receives comments from CMS (within 60 business days)	By 12/23/2021
NH DHHS submits Final Evaluation Report to CMS (within 60 calendar days after receipt of comments)	By 2/23/2022

E. EVALUATION IMPLEMENTATION TIMELINE

The following timeline has been prepared for the NH DSRIP Demonstration evaluation outlined in the preceding sections. This timeline should be considered preliminary and subject to change based upon approval of the evaluation design and implementation of the Demonstration. A final detailed timeline will be developed upon selection of the Independent Evaluator procured to conduct the evaluation.

Table 3. New Hampshire DSRIP Demonstration Evaluation Timeline

Task	2017 Q1	Q2	Q3	Q4	2018 Q1	Q2	Q3	Q4	2019 Q1	Q2	Q3	Q4	2020 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3	Q4	2022 Q1	Q2
Prepare and Implement Study Design																						
1. Prepare methodology and analysis plan				■																		
2. Arrange for how to receive data (i.e., Medicaid claims and encounters, IDN Health Records, HEDIS, etc.)				■																		
3. Work with DHHS to design data collection system for wait times to inpatient psychiatric stays				■																		
Data Collection																						
1. Obtain NH Medicaid member, provider, and eligibility/enrollment data				■																		
2. Obtain NH Medicaid claims and encounters				■				■	■			■	■			■	■					
3. Obtain HEDIS Data				■				■	■			■	■			■	■					
4. Obtain NH Hospital Discharge Data				■				■	■			■	■			■	■					
5. Obtain IDN Documentation				■				■	■			■	■			■	■					
6. Conduct stakeholder surveys									■								■					
7. Conduct stakeholder interviews									■								■					
8. Satisfaction surveys					■				■				■				■					
Data Analysis																						
1. Analyze Medicaid claims and encounters, HEDIS and hospital discharge data						■				■				■				■				
2. Analyze IDN Documentation						■				■				■				■				
3. Analyze surveys						■				■				■				■				
4. Analyze interviews						■				■				■				■				
Dissemination																						
1. Progress reports							■				■				■				■			
2. Interim evaluation report											■	■										
3. Final evaluation report																			■	■	■	

New Hampshire Department of Health and Human Services
New Hampshire Delivery System Reform Incentive Payment (DSRIP) Program Evaluation Design

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REFERENCES

1. NH DSRIP Project and Metrics Specification Guide, http://www.dhhs.nh.gov/section-1115-waiver/documents/nh-dsrip-proj-metric-spec.pdf

2. Centers for Medicare and Medicaid Services Special Terms and Conditions, 11-W-00301/1, New Hampshire Building Capacity for Transformation, (http://www.dhhs.nh.gov/section-1115-waiver/documents/pr-2016-01-05-transformation-waiver-terms.pdf)

3. Somers, M., Zhu, P., Jacob, R. & Bloom, H. (2013). The validity and precision of the comparative interrupted time series design and the difference-in-difference design in educational evaluation. Retrieved April 21, 2017 from: http://www.mdrc.org/sites/default/files/validity_precision_comparative_interrupted_time_series_design.pdf

New Hampshire Department of Health and Human Services
New Hampshire Delivery System Reform Incentive Payment (DSRIP) Program Evaluation Design

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APPENDIX A. RESEARCH QUESTIONS, HYPOTHESES, MEASURES, AND ANALYSES

Note: Throughout the Appendix, Medicaid Claims and Encounters includes encounters from Premium Assistance Program members in Qualified Health Plans.

Research Question #1: *Was the DSRIP Demonstration effective in achieving the goals of better care for individuals (including access to care, quality of care, health outcomes), better health for the population, or lower cost through improvement? Was there any variation between IDNs/geographic regions/market areas? To what degree can improvements be attributed to the activities undertaken under DSRIP?*

Hypothesis 1.1: Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will receive higher quality of care after IDNs are operating regardless of IDN, geographic location, or market area.

Measure 1.1.1	Experiences of Health Care with DSRIP
Definition:	Semi-structured interviews will explore beneficiaries' perceptions about the impact of DSRIP on health care quality and outcomes.
Technical Specifications:	Approximately 20-25 interviews will be conducted with beneficiaries who have a behavioral health disorder and who have had at least one health care visit in the previous year, respectively. Interviews will be audiotaped and transcribed for thematic analysis.
Exclusion Criteria:	Members <18 years old; members who do not have a behavioral health disorder; members with behavioral health disorders who did not have one visit in the past year.
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None

Measure 1.1.2	HEDIS: Antidepressant Medication Management
Definition:	Members 18+ treated with antidepressant medication, had a diagnosis of major depression and who remained on antidepressant medication treatment for at least 84 days and for at least 180 days
Technical Specifications:	1. Percent of members 18+ treated with antidepressant medication, had a diagnosis of major depression and who remained on antidepressant medication treatment for at least 84 days, in the calendar year. 2. Percent of members 18+ treated with antidepressant medication, had a diagnosis of major depression and who remained on antidepressant medication treatment for at least 180 days, in the calendar year.
Exclusion Criteria:	Members < 18; members who (a) are not treated with antidepressant medication and/or (b) don't have a diagnosis of major depression.
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	1. 2014 Medicaid HMO = 52.3%; 2. 2014 Medicaid HMO = 37.1%

Measure 1.1.3	HEDIS: Follow-Up After Hospitalization for Mental Illness
Definition:	Members 6+ years of age who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visits, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 30 days and 7 days after discharge, in the last year.
Technical Specifications:	1. Percent of members 6+ years of age who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visits, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 30 days, in the calendar year. 2. Percent of members 6+ years of age who were hospitalized for treatment of selected mental illness diagnoses and who had an outpatient visits, an intensive outpatient encounter or partial hospitalization with a mental health practitioner within 7 days after discharge, in the calendar year.
Exclusion Criteria:	Members < 6 years old; members without select mental illness diagnoses
Data Source(s):	Medicaid Claims, Medicaid Encounters, New Hampshire Hospital discharges for non-claim Medicaid patients
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	1. 2014 Medicaid HMO=43.9%; 2. 2014 Medicaid HMO=63.0%

Measure 1.1.4	HEDIS: Initiation and Engagement of Alcohol and Other Drug Dependence Treatment
Definition:	The percentage of adolescent and adult patients with a new episode of alcohol or other drug (AOD) dependence who received the following: - Initiation of AOD Treatment. The percentage of members who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the diagnosis. - Engagement of AOD Treatment. The percentage of members who initiated treatment and who had two or more additional services with a diagnosis of AOD within 30 days of the initiation visit.
Technical Specifications:	1. Percent of adolescents (13-17 years old, consistent with HEDIS specifications) and adults (≥18 years old) with a new episode of alcohol or other drug dependence who initiate treatment within 14 days of the diagnosis, in the calendar year. 2. Percent of adolescents (13-17 years old) and adults (≥18 years old) members with a new episode of alcohol or other drug dependence who initiated treatment and who had two or more additional services within 30 days of the initiation visit, in the calendar year.
Exclusion Criteria:	Members who did not have a new episode of alcohol or other drug dependence; members <13 years old; members not diagnosed with SUD
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually, by age group 2. Regression, annually
National Benchmark:	1. 2014 Medicaid HMO = 38.3%; 2. 2014 Medicaid HMO = 11.3%
(a) Evaluation contractor should follow specifications provided in HEDIS 2017 Volume 2: Technical	

Specifications for Health Plans	
Measure 1.1.5	**HEDIS: Adherence to Antipsychotic Medications for Individuals with Schizophrenia**
Definition:	Members 19-64 years of age with schizophrenia who were dispensed and remained on an antipsychotic medication for at least 80% of their treatment period, in the last year
Technical Specifications:	Percent of members 19-64 years of age with schizophrenia who were dispensed and remained on an antipsychotic medication for at least 80% of their treatment period, in the , in the calendar year [a]
Exclusion Criteria:	Members without schizophrenia (ICD-9: 295); members with schizophrenia who were not dispensed antipsychotic medication; members <19 or <64 years old
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	2014 Medicaid HMO = 60.1%
Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf, (p. 122). Whichever method is selected should be used consistently across years.	
Measure 1.1.6	**HEDIS: Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications**
Definition:	Members 18-64 years of age with schizophrenia or bipolar disorder, who were dispensed an antipsychotic medication and had a diabetes test
Technical Specifications:	Percent of members 18-64 years of age with schizophrenia or bipolar disorder, who were dispensed an antipsychotic medication and had either a glucose test or HbA1c test, in the calendar year.
Exclusion Criteria:	Members < 18 or >64 years old; members without schizophrenia or bipolar disorder; members with schizophrenia or bipolar disorder who were not dispensed an antipsychotic medication; members with schizophrenia or bipolar disorder who did not have a glucose test or HbA1c test during the measurement year
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually; total group and by mental illness type 2. Regression, annually; total group and by mental illness type
National Benchmark:	2014 Medicaid HMO = 79.8%
Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf, (p. 155). Whichever method is selected should be used consistently across years.	
Measure 1.1.7	**HEDIS: Diabetes Screening for People with Diabetes and Schizophrenia**
Definition:	Members 18-64 years of age with schizophrenia and diabetes who had both an LDL-C and HbA1c
Technical Specifications:	Percent of members 18-64 years of age with schizophrenia and diabetes who had both an LDL-C and HbA1c, in the calendar year.
Exclusion Criteria:	Members < 18 or >64 years old; members without schizophrenia;

	members with schizophrenia who did not have diabetes
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	2014 Medicaid HMO = 69.3%
This measure is not required by the National Committee for Quality Assurance (NCQA).	

Measure 1.1.8	**HEDIS: Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia**
Definition:	Members 18-64 years of age with schizophrenia and cardiovascular disease, who had an LDL-C
Technical Specifications:	Percentage of members 18-64 years of age with schizophrenia and cardiovascular disease, who had an LDL-C, in the calendar year.
Exclusion Criteria:	Members < 18 or >64 years old; members without schizophrenia and cardiovascular disease
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	2014 Medicaid HMO = 76.2%
This measure is not required by the NCQA.	

Measure 1.1.9	**Follow-up Care for Children Prescribed ADHD Medication**
Definition:	*All* children (ages 6-12) (with and without BH disorders) who were newly prescribed ADHD medication who had a least three follow-up visits within a 10 month period, one of which was in 30 days of when the first ADHD drug was dispensed
Technical Specifications:	1. Members ages 6-12 newly prescribed ADHD medication who had a follow-up visit within 30 days of the prescription being dispensed (initiation phase) , in the calendar year. 2. Members ages 6-12 newly prescribed ADHD meds who remained on the med for 210 days and who in addition to the 30 day visit had at least 2 follow-up visits within 270 days after the initiation phase, in the calendar year.
Exclusion Criteria:	Members <6 or >12 years old; children not newly prescribed ADHD meds
Data Source(s):	Medicaid Claims, Medicaid Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	1. 2014 Medicaid HMO = 40.1%; 2. 2014 Medicaid HMO = 47.5%

Measure 1.1.10	**HEDIS: Metabolic Monitoring for Children and Adolescents on Antipsychotics**
Definition:	Children and adolescents 1-17 years of age who had 2+ antipsychotic prescriptions and had metabolic testing, both of the following: (a) at least one blood glucose test or HBA1c, (b) At least one LDL-C test
Technical Specifications:	Percent of children and adolescents 1-17 years of age who had 2+ antipsychotic prescriptions and had metabolic testing, both of the following: (a) at least one blood glucose test or HBA1c, (b) At least one

	LDL-C test, in the calendar year.
Exclusion Criteria:	Members <1 or >17 years old; children and adolescents not prescribed 2+ antipsychotics
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None (but there will be one in 2017)
This measure is not specified in the 2016 NCQA.	

Measure 1.1.11	HEDIS: Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics
Definition:	Children and adolescents 1-17 years of age who had a new prescription for an antipsychotic and had documentation of psychosocial care as first-line treatment
Technical Specifications:	Children and adolescents 1-17 years of age who had a new prescription for an antipsychotic and had documentation of at least a trial of outpatient behavioral health therapy prior to initiation of medication therapy, in the calendar year.
Exclusion Criteria:	Members <1 or >17 years old; children and adolescents not prescribed 2+ antipsychotics
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None (currently, but a benchmark will be available in 2017)
This measure is not specified in the 2016 NCQA.	

Measure 1.1.12	USPSTF: Cervical Cancer Screening
Definition:	Women with a behavioral health disorder who received timely cervical cancer screening
Technical Specifications:	1. Percent of women with a behavioral health ages 21-65 that received cervical cancer screening within the past 3 years 2. Percent of women with a behavioral health disorder ages 30-65 that received cervical cancer screening within the past 5 years
Exclusion Criteria:	Women without a behavioral health disorder; women outside the ages of 21-65; any men; women without uterus/cervix
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None
Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf, (p. 33). Whichever method is selected should be used consistently across years. Please note that this measure is not specific to people with behavioral health disorders.	

Measure 1.1.13	USPSTF: Breast Cancer Screening
Definition:	Women with a behavioral health disorder that received timely breast cancer screening

Technical Specifications:	Percent of women with a behavioral health disorder ages 40 and older that received a mammogram within the past 2 years
Exclusion Criteria:	Women without a behavioral health disorder; women <40; men
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf, (p. 19). Whichever method is selected should be used consistently across years. Please note that this measure is not specific to people with behavioral health disorders.

Measure 1.1.14	USPSTF: Colorectal Cancer Screening
Definition:	Members with behavioral health disorder that received timely colorectal cancer screening
Technical Specifications:	Percent of members with behavioral health disorder ages 50-75 that received colorectal cancer screening within the past 3 years
Exclusion Criteria:	Members without behavioral health disorders; members outside the ages of 50-75
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Measure 1.1.15	USPSTF: Cholesterol Screening
Definition:	Members with a behavioral health disorder that received timely cholesterol screening
Technical Specifications:	1. Percent of men with a behavioral health disorder ages 35+ that received cholesterol screening within the past 3 years 2. Percent of women with a behavioral health disorder ages 45+ that received cholesterol screening within the past 3 years
Exclusion Criteria:	Members without a behavioral health disorder; men under 35 and women under 45.
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually by gender 2. Regression, annually
National Benchmark:	None

Measure 1.1.16	Adolescent Well Care Visit
Definition:	Recommended adolescent (age 12-21) Well Care visits
Technical Specifications:	The percentage of adolescent Medicaid enrollees with behavioral health disorders who had a well care visit within the calendar year.
Exclusion Criteria:	Medicaid beneficiaries <12 or >21 years old
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	1. Pre-DSRIP to post-DSRIP 2. Adolescents with to adolescents without 1+ behavioral health disorder

Comparison Method(s):	1. Mann-Whitney U-test, annually
	2. Difference of differences between groups
	3. Regression, annually
National Benchmark:	None

Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf, (p. 31). Whichever method is selected should be used consistently across years.

Measure 1.1.17	Smoking/Tobacco Cessation Counseling
Definition:	Members with a behavioral health disorder who received smoking/tobacco cessation counseling
Technical Specifications:	The number of Medicaid beneficiaries with a behavioral health disorder, age 18 years and older, who were screened for tobacco use one or more times within 24 months and who received cessation counseling intervention if identified as a tobacco user as documented in an IDN provider EHR. Cessation counseling intervention includes brief counseling and/or pharmacotherapy.
Exclusion Criteria:	Non-smoking Medicaid beneficiaries; beneficiaries without a behavioral health disorder
Data Source(s):	IDN EHR
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually
	2. Regression, annually
National Benchmark:	None

Measure 1.1.18	Emergency Department (ED) Visits
Definition:	Frequent (4+ annually) ED visits for people with a behavioral health disorder
Technical Specifications:	The percentage of Medicaid beneficiaries with behavioral health disorders who had 4+ visit(s) to an ED, in the calendar year.
Exclusion Criteria:	Medicaid beneficiaries with no a behavioral health disorder
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually
	2. Regression, quarterly and annually
National Benchmark:	None

Measure 1.1.19	Potentially Preventable Emergency Department (ED) Visits
Definition:	Potentially preventable ED visits for a behavioral health disorder
Technical Specifications:	The percentage of Medicaid beneficiaries with a behavioral health disorder including SUD who had 1+ ED visits for a selected physical health diagnosis that meets DHHS criteria of potentially being preventable or servable in primary care. The percentage of Medicaid beneficiaries who had 1+ ED visits for potentially preventable ED visits, in the calendar year.
Exclusion Criteria:	Beneficiaries without a behavioral health disorder
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP; stratified by age (adolescent (10-17), adult
Comparison Method(s):	1. Mann-Whitney U- test, quarterly and annually by age group
	2. Regression, quarterly and annually by age group

National Benchmark:	None

Measure 1.1.20	Opioid Dosage for People Without Cancer
Definition:	Rate per 1,000 of people without cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90 consecutive days or longer
Technical Specifications:	Count of people *without* cancer receiving a daily dosage of opioids greater than 120mg morphine equivalent dose (MED) for 90 consecutive days or longer in the calendar year multiplied by 100 and divided by the total number of beneficiaries without cancer, in the calendar year.
Exclusion Criteria:	Medicaid beneficiaries with 1+ diagnosis codes for cancer and/or 2+ outpatient diagnoses for cancer
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Hypothesis 1.2: *Individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will have greater access to care at the end of the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.2.1	Member Experiences of Accessing Care
Definition:	Explore members perceptions and experiences accessing care including: barriers to access, unmet need, experience of accessing care using IDNs
Technical Specifications:	Approximately 20-25 interviews will be conducted with beneficiaries. Interviews will be audiotaped and transcribed for thematic analysis.
Exclusion Criteria:	Beneficiaries <18 years old who do not have a behavioral health disorder and who have not had at least one visit in the previous 12 months. Providers who do not treat or care for beneficiaries who have a behavioral health disorder.
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None

Measure 1.2.2	Access to Care
Definition:	Getting Timely Appointments, Care and Information
Technical Specifications:	The number of Medicaid beneficiaries with a behavioral health disorder who used 1+ counseling visits for smoking and tobacco cessation, in the calendar year.
Exclusion Criteria:	None
Data Source(s):	CAHPS
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None
Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid-chip-program-information/by-topics/quality-of-	

care/downloads/medicaid-adult-core-set-manual.pdf, (p. 77). Whichever method is selected should be used consistently across years. Please note that this metric should be measured using the CAHPS data available from the NH DHHS.

Measure 1.2.3	Annual Primary Care Visit
Definition:	Percent of beneficiaries with one or more primary care visits in the past 12 months
Technical Specifications:	Number of people (ages 12+) with a behavioral health disorder who had one or more primary care visits , in the calendar divided by the number of people with a behavioral health disorder
Exclusion Criteria:	Beneficiaries without a behavioral health disorder; beneficiaries under 12 year old
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Measure 1.2.4	Behavioral Health Care Visits
Definition:	Percent of beneficiaries with one or more visits with a behavioral health provider in the past 12 months
Technical Specifications:	Number of people (ages 12+) with a behavioral health disorder who had one or more visits with a behavioral health provider, in the calendar divided by the number of people with a behavioral health disorder
Exclusion Criteria:	Beneficiaries without a behavioral health disorder; beneficiaries under 12 year old
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Measure 1.2.5	Substance Use Treatment Services
Definition:	Percent of beneficiaries who received SUD Treatment Services in the past 12 months
Technical Specifications:	Number of people (ages 12+) with a behavioral health disorder who received SUD treatment services in the calendar year, divided by the number of people with a behavioral health disorder
Exclusion Criteria:	Beneficiaries without a behavioral health disorder; beneficiaries under 12 year old
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Measure 1.2.6	Adolescent Well Care Visit
Definition:	Recommended adolescent (age 12-21) Well Care visits
Technical Specifications:	The percentage of adolescent Medicaid enrollees with behavioral health disorders who had a well care visit within the calendar year.

Exclusion Criteria:	Medicaid beneficiaries <12 or >21 years old
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	1. Pre-DSRIP to post-DSRIP 2. Adolescents with to adolescents without 1+ behavioral health disorder
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Difference of differences between groups 3. Regression, annually
National Benchmark:	None
Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf, (p. 31). Whichever method is selected should be used consistently across years.	

Hypothesis 1.3: *Population health will improve as a result of the implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.3.1	Strategies to Improve Population Health
Definition:	Semi-structured interviews will explore how IDN administrators and provider perceived the impact of DSRIP on population health and the strategies they implemented to improve the overall health of NH residence. Key measurement domains include: resources, infrastructure, outreach activities, intervention strategies and challenges.
Technical Specifications:	Interviews will be conducted with IDN administrators (2-3 per IDN) and approximately 35 providers (stratified by IDN location). Interviews will be audiotaped and transcribed for thematic analysis.
Exclusion Criteria:	None
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None
Measure 1.3.2	**Improvements in Population Health**
Definition:	Assessment of improvements in population health based on self-reported health status, behavioral risk factors and preventative health.
Technical Specifications:	Confidential and anonymous annual random-digit-dialed telephone survey of NH adults. Key measurement domains include: diet, exercise, weight, tobacco and alcohol use, injuries and preventative screenings.
Exclusion Criteria:	Individual less than 18 years
Data Source(s):	1. BRFFS Survey data: Baseline (2014) Follow up in 2017 and 2020
Comparison Group(s):	None
Comparison Method(s):	1. Pre-DSRIP vs. post-DSRIP
National Benchmark:	None

Hypothesis 1.4: *The total cost of care will be lower for Medicaid beneficiaries with behavioral health disorders or co-occurring physical and behavioral health disorders after IDNs are regardless of IDN, geographic location, or market area.*

Measure 1.4.1	Total Cost of All Care
Definition:	Total per member per month (PMPM) cost for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total costs divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Costs for beneficiaries without a behavioral health disorder, in the past 12 months
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 1.4.2	Total Cost of All Inpatient Care
Definition:	Total per member per month (PMPM) inpatient costs for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total inpatient costs divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year
Exclusion Criteria:	Costs for beneficiaries without a behavioral health disorder; costs for services other than inpatient care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 1.4.3	Total Cost of All Outpatient Care
Definition:	Total per member per month (PMPM) outpatient costs for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total outpatient costs divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Costs for beneficiaries a behavioral health disorder; costs for services other than outpatient care; costs for outpatient psychiatric care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 1.4.4	Total Cost of Emergency Department (ED) Care
Definition:	Total per member per month (PMPM) ED costs for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total ED costs divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Costs for ED visits that become inpatient hospital stays; Costs for beneficiaries without a behavioral health disorder; costs for services other than ED care; costs for psychiatric ED care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None
Measure 1.4.5	Total Cost of Behavioral Health Care
Definition:	Total per member per month (PMPM) behavioral health costs for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total behavioral health costs (inpatient, outpatient, and ED) divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Costs for beneficiaries without a behavioral health disorder; costs for services other than behavioral health care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None
Measure 1.4.6	Total Cost of Outpatient Behavioral Health Care
Definition:	Total per member per month (PMPM) outpatient behavioral costs for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total outpatient behavioral health costs divided by the number of member months among beneficiaries with a and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Costs for beneficiaries without a behavioral health disorder; costs for services other than outpatient behavioral care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None
Measure 1.4.7	Total Cost of Inpatient Behavioral Health Care
Definition:	Total per member per month (PMPM) inpatient behavioral health costs for

	Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total psychiatric inpatient behavioral health costs divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder in the calendar year.
Exclusion Criteria:	Costs for beneficiaries without a behavioral health disorder; costs for services other than inpatient behavioral health care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 1.4.8	Total Cost of Emergency Department (ED) Behavioral Health Care
Definition:	Total per member per month (PMPM) ED costs for Medicaid beneficiaries with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Quarterly and annual total psychiatric ED behavioral health costs divided by the number of member months among beneficiaries with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Costs for ED visits that result in hospitalization; costs for beneficiaries without a behavioral health disorder; costs for services other than ED behavioral health care
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Hypothesis 1.5: *The rate of avoidable hospital re-admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.5.1	Hospital Re-Admission for Any Cause
Definition:	Readmission to hospital for any cause (excluding maternity, cancer, rehabilitation) within 30 days for adults (18+) with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Count of the number of hospital readmissions within 30 days of discharge, among adult (≥=18 years old) members with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Readmission related to maternity, cancer, and rehabilitation; readmissions for people without a behavioral health disorder; readmissions for members <18 years old
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually

National Benchmark:	None

| Evaluation contractor may obtain these data from NH DHHS or follow additional specifications available at https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf, (p. 133). Whichever method is selected should be used consistently across years. ||

Measure 1.5.2	Hospital Re-Admission for Behavioral Health Disorder
Definition:	Readmission to hospital for a behavioral health disorder within 30 days for adults (18+) with a behavioral health disorder and a co-occurring physical health disorder
Technical Specifications:	Count of the number of hospital readmissions within 30 days of discharge, among adult (>=18 years old) members with a behavioral health disorder and a co-occurring physical health disorder, in the calendar year.
Exclusion Criteria:	Readmission where behavioral health disorder was not the primary cause of admissions for people without a behavioral health disorder; readmissions for members <18 years old
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Hypothesis 1.6: *The statewide rate of avoidable hospital admissions for individuals with behavioral health disorders or co-occurring physical and behavioral health disorders will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.6.1	Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders.
Definition:	Hospital Admission for Ambulatory Care Sensitive Admissions for Individuals with Behavioral Health Disorders.
Technical Specifications:	TBD, but modeled from AHRQ Ambulatory Care Sensitive Admissions specifications
Exclusion Criteria:	TBD
Data Source(s):	Medicaid Claims and Encounters
Comparison Group(s):	TBD
Comparison Method(s):	TBD
National Benchmark:	None

Hypothesis 1.7: *Rate of Medicaid beneficiaries waiting for inpatient psychiatric care will decrease over the course of the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.7.1	Rate of Individuals Waiting for Inpatient Psychiatric Care
Definition:	Rate of individuals waiting for inpatient psychiatric care among people for more than 1 day.
Technical Specifications:	TBD, but the sample should include all people who initiate care each year, not just those determined to have a behavioral health disorder at baseline in the calendar year.
Exclusion Criteria:	TBD
Data Source(s):	TBD by evaluator and NH DHHS

Comparison Group(s):	TBD
Comparison Method(s):	TBD
National Benchmark:	None

Hypothesis 1.8: *Average length of stay for inpatient psychiatric care at New Hampshire Hospital (NHH, NH's state run psychiatric facility) will be lower at the end of the Demonstration than prior to the Demonstration, as options for community-based care increase regardless of IDN, geographic location, or market area.*

Measure 1.8.1	Length of Stay for Inpatient Psychiatric Care
Definition:	Mean length of stay for inpatient psychiatric care
Technical Specifications:	Sum of the length of inpatient psychiatric, measured in days, stays divided by the number of people with a behavioral health disorder who had inpatient psychiatric stays, in the calendar year.
Exclusion Criteria:	Members with a behavioral health disorder who did not have an inpatient psychiatric stay
Data Source(s):	Medicaid Claims and Encounters, Data from Non-Claim Discharges from New Hampshire Hospital
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Wilcoxon's matched pairs test, annually 2. Regression, annually
National Benchmark:	None

Hypothesis 1.9: *Average wait times for outpatient appointments at community mental health centers will be lower at the end of the Demonstration than prior to the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.9.1	Community Mental Health Center (CMHC) Referral or New Patient Appointment
Definition:	Beneficiaries who newly initiate treatment after having a CMHC intake appointment (90801 HO)
Technical Specifications:	1. Number of beneficiaries who had an intake appointment with a psychiatrist or psychiatric nurse practitioner and also another appointment with a mental health provider within 7 days of the intake appointment, divided by the total number of people who had an intake appointment with a psychiatrist or psychiatric nurse practitioner, in the calendar year. 2. Number of beneficiaries who had an intake appointment with a psychiatrist or psychiatric nurse practitioner and also another appointment with a mental health provider within 30 days of the intake appointment, divided by the total number of people who had an intake appointment with a psychiatrist or psychiatric nurse practitioner, in the calendar year.
Exclusion Criteria:	Members who do not have a CMHC intake appointment
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. McNemar's Chi-square test, annually 3. Regression, annually
National Benchmark:	None

Hypothesis 1.10: *The number of referrals and follow-up plans from primary care and other non-psychiatric providers to appropriate services will increase during the Demonstration regardless of IDN, geographic location, or market area.*

Measure 1.10.1	Referrals and follow-up plans from primary care and other non-psychiatric providers to appropriate services
Definition:	Appropriate Follow-Up for Positive Screenings for Potential Substance Use Disorder and/or Depression by IDN Primary Care and BH Providers
Technical Specifications:	Percent of positive screenings for potential substance use disorder and/or depression using the Comprehensive Core Assessment screening tools for patients 12 years old and older seen at the IDN's primary care or behavioral health Medicaid billing providers for an office or community-based visit with appropriate follow-up plan documented in the EHR on the date of the positive screening.
Exclusion Criteria:	Psychiatrist providers
Data Source(s):	Medicaid Claims and Encounters, IDN EHR Report
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. McNemar's Chi-square test, quarterly and annually 3. Regression, quarterly and annually
National Benchmark:	None

Research Question #2: To what extent has the DSRIP Demonstration improved integration and coordination between providers, including community service providers? To what extent has the DSRIP Demonstration fostered the bi-directional and integrated delivery of physical health services, behavioral health services, SUD services, transitional care, and alignment of care coordination to serve the whole person? Was there any variation between IDNs, geographic regions, or market areas?

Hypothesis 2.1: Integration and coordination between providers within the IDNs (including community service providers) will improve as a result of implementation of the DSRIP Demonstration regardless of IDN, geographic location, or market area.

Measure 2.1.1	Fragmented Care
Definition:	Fragmentation of patient care is based on the fragmentation of care index (FCI) which examines the number of different providers visited, the proportion of attended visits to each of those providers, and the total number of visits.
Technical Specifications:	The number of PCP visit(s) from multiple PCP practices (calculated using Liu formulary) divided by the total eligible population.
Exclusion Criteria:	None
Data Source(s):	Claims
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually

Measure 2.1.2	Transmission of Records
Definition:	Timely transmission of transition record (discharges from an inpatient facility in IDN (including rehab and skilled nursing facility) to home/self-care or any other site of care)
Technical Specifications:	Percent of transition records transmitted to designated providers within 24 hours of the discharge from the inpatient facility, in the calendar year, for beneficiaries ages 18-64 and 65+, with transmission documented in the EHR.
Exclusion Criteria:	Record transmissions not related to discharges from inpatient facilities; record transmissions related to beneficiaries age <18 years old.
Data Source(s):	IDN EHR Output
Comparison Group(s):	Pre-DSRIP to post-DSRIP, for each age group
Comparison Method(s):	1. Mann-Whitney U-test, annually, for each age group 2. Regression, annually, for each age group
≤Measure 2.1.3	Alcohol/Drug Abuse Screening and Follow-up
Definition:	Percent of beneficiaries screened for alcohol or drug abuse in the past 12 months using an age-appropriate standardized alcohol and drug use screening tool AND, if positive, a follow-up plan is documented on the date of the positive screen, age 12+
Technical Specifications:	1. Number of people (ages 12+) with a behavioral health disorder who received an age-appropriate alcohol or drug abuse screening in the calendar year divided by the number of people with a behavioral health disorder 2. Number of people (ages 12+) with a behavioral health disorder who received an age-appropriate alcohol or drug abuse screening, in the calendar AND had a positive screen who also have a follow-up plan documented in the EHR, divided by the number of people (ages 12+) with a behavioral health disorder who received an age-appropriate alcohol or drug abuse screening, in the calendar year AND had a positive screen
Exclusion Criteria:	Beneficiaries without a behavioral health disorder; beneficiaries under 12 year old
Data Source(s):	IDN EHR Output
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
Measure 2.1.4	Substance Use and Depression Screening
Definition:	Comprehensive and consistent use of standardized core assessment framework including screening for substance use and depression for age 12+ by IDN providers
Technical Specifications:	Number of IDN providers who implemented screening for both substance use and depression for at least 85% of the beneficiaries 12+ with a behavioral health disorder they saw in the calendar year, annually, divided by the number of IDN providers
Exclusion Criteria:	Beneficiaries without a behavioral health disorder and those under 12 years
Data Source(s):	IDN EHR Output
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually

Measure 2.1.5	Receipt of Necessary Care Composite Score
Definition:	Composite score indicating whether members with a behavioral health disorder saw a specialist as soon as they needed to AND found it easy to get the care, tests, or treatment they needed, in the last 6 months.
Technical Specifications:	The numerator will include the number of beneficiaries with a behavioral health disorder who responded that they "always" receive care from a specialist as soon as they needed. The denominator will include all beneficiaries with a behavioral health disorder who responded to the question.
Exclusion Criteria:	Beneficiaries <18 years old; beneficiaries who do not have a behavioral health disorder
Data Source(s):	CAHPS/QHP Experience of Care Survey
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually; stratified by age group 2. Regression, annually; stratified by age group

Measure 2.1.6	Timely Receipt of Health Care Composite Score
Definition:	Composite score indicating whether members with a behavioral health disorder received care right away when needed AND received an appointment for a check-up or routine care as soon as needed, in the last 6 months.
Technical Specifications:	The numerator will include the number of beneficiaries with a behavioral health disorder who responded that they "always" receive care right away when necessary AND "always" receive a check-up or routine care when needed. The denominator will include all beneficiaries with a behavioral health disorder who responded to both of the questions.
Exclusion Criteria:	Beneficiaries <18 years old; beneficiaries who do not have a behavioral health disorder
Data Source(s):	CAHPS/QHP Experience of Care Survey
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually; stratified by age group 2. Regression, annually; stratified by age group
National Benchmark:	None

Measure 2.1.7	Care Coordination Composite Score
Definition:	The care coordination composite score is based on five questions regarding the care provided by the member's personal doctor and the doctor's staff in the last 6 months. Three items relate specifically to the care provided by the personal doctor: how often the personal doctor (a) had the member's medical records or other information about their care, (b) seemed informed and up-to-date about care from specialists, and (c) talked with the member about prescription medication. Two additional questions query the actions of the staff from the personal doctor's office: how often someone from the doctor's office (a) spoke with the member regarding test results and (b) assisted the member in managing care from different providers and services.
Technical Specifications:	The numerator will include the number of beneficiaries with a behavioral health disorder who responded "always" to each of the five questions regarding care coordination. The denominator will include all beneficiaries with a behavioral health disorder who responded to all of the questions.

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Exclusion Criteria:	Beneficiaries <18 years old; beneficiaries who do not have a behavioral health disorder
Data Source(s):	CAHPS/QHP Experience of Care Survey
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually; stratified by age group 2. Regression, annually; stratified by age group
National Benchmark:	None

Measure 2.1.8	Behavioral Health Composite Score
Definition:	Three questions will be used to measure behavioral health care received in the last 12 months provided by anyone in the personal provider's office: whether or not members were (a) ask if there was a period of time when they felt sad, empty, or depressed, (b) talked to about whether there were things in the member's life causing them worry or stress, and (c) talked to about a personal or family problem, alcohol or drug use, or an emotional or mental illness.
Technical Specifications:	The numerator will include the number of beneficiaries with a behavioral health disorder who responded affirmatively to the questions described above. The denominator will include all beneficiaries with a behavioral health disorder who responded to all three of the questions.
Exclusion Criteria:	Beneficiaries <18 years old; beneficiaries who do not have a behavioral health disorder
Data Source(s):	CAHPS/QHP Experience of Care Survey
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually; stratified by age group 2. Regression, annually; stratified by age group
National Benchmark:	None

Measure 2.1.9	Mental Illness Hospitalization Follow-Up (7 days)
Definition:	Follow-up after hospitalization for mental illness within 7 days
Technical Specifications:	Number of beneficiaries who had an inpatient psychiatric stay and also had a follow-up appointment within 7 days of the stay, divided by the total number of people who had an inpatient psychiatric stay, in the calendar year.
Exclusion Criteria:	Non-psychiatric inpatient stays
Data Source(s):	Medicaid Claims, Medicaid Encounters, Data from Non-Claim Discharges from New Hampshire Hospital
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 2.1.10	Mental Illness Hospitalization Follow-Up (30 days)
Definition:	Follow-up after hospitalization for mental illnesses – within 30 days
Technical Specifications:	Number of beneficiaries who had an inpatient psychiatric stay and also received a follow-up appointment within 30 days of the stay, divided by the total number of people who had an inpatient psychiatric stay, in the calendar year.
Exclusion Criteria:	Non-psychiatric inpatient stays
Data Source(s):	Medicaid Claims, Medicaid Encounters, Data from Non-Claim Discharges from New Hampshire Hospital

Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 2.1.11	**Mental Illness Emergency Department (ED) Visit Follow-Up (30 days)**
Definition:	Follow-up after ED visit for mental illness within 30 days
Technical Specifications:	Number of beneficiaries who had a psychiatric ED visit (that did not result in an inpatient stay) and also had a follow-up with a mental health provider within 30 days of the visit, divided by the total number of people who had an inpatient psychiatric stay, in the calendar year.
Exclusion Criteria:	Non-psychiatric ED visits
Data Source(s):	Medicaid Claims, Medicaid Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 2.1.12	**Alcohol/Drug Dependence Emergency Department (ED) Visit Follow-Up (30 days)**
Definition:	Follow-up after roomed visit for alcohol or other drug dependence within 30 days
Technical Specifications:	Number of beneficiaries who had an Alcohol/Drug dependence ED visit and had a follow-up appointment within 30 days of the ED visit, divided by the total number of people who had an Alcohol/Drug dependence ED visit, in the calendar year.
Exclusion Criteria:	ED visits for reasons other than alcohol-drug dependence
Data Source(s):	Medicaid Claims, Medicaid Encounters
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, quarterly and annually 2. Regression, quarterly and annually
National Benchmark:	None

Measure 2.1.13	**Ratings of Improvement in Care Coordination and Integration**
Definition:	The surveys will address the extent to which DSRIP has achieved integration and coordination between providers including bi-directional integrated delivery of physical and behavioral health services, SUD services, transitional care, and the alignment of care coordination to serve the whole person. The provider survey will be focused on the organizational/operational perspective while the patient survey will be tailored to their experiences/perspectives.
Technical Specifications:	Questions and scoring will be drawn from established surveys (e.g., CAHPS, the Picker Institute).
Exclusion Criteria:	None
Data Source(s):	Separate surveys conducted at the beginning of 2019 and end of 2020
Comparison Group(s):	2019 survey vs. 2020 survey
Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Measure 2.1.14	Patient Experiences of Care Integration and Coordination
Definition:	Explore the influence that integration and coordination has had on health care experiences and health.
Technical Specifications:	Approximately 20-25 interviews will be conducted with beneficiaries and community and medical service providers, respectively. Interviews will be audiotaped and transcribed for thematic analysis.
Exclusion Criteria:	Beneficiaries <18 years old who do not have a behavioral health disorder and who have not had at least one visit in the previous 12 months. Providers who do not treat or care for beneficiaries who have a behavioral health disorder.
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None
Measure 2.1.15	Practice and Provider Experiences of Care Integration and Coordination
Definition:	Explore the influence that integration and coordination has had on health care experiences and health. Key interview domains will include: integration and coordination strategies, barriers to integration, information sharing, policies supporting coordination, provider experiences with integration.
Technical Specifications:	Interviews will be conducted with IDN administrators (2-3 per IDN) and approximately 35 providers (stratified by IDN location). Interviews will be audiotaped and transcribed for thematic analysis.
Exclusion Criteria:	None
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None

Research Question #3: To what extent has the DSRIP improved the capacity of the state's behavioral health workforce to provide quality, integrated care?

Hypothesis 3.1: Capacity to deliver evidenced-based behavioral health and/or SUD treatment will increase as a result of the DSRIP Demonstration statewide and IDN specific project activities.

Measure 3.1.1	Size and Training of the Provider Network
Definition:	Assessment of the size and training of the IDN provider network to care for and treat members with a behavioral health disorder.
Technical Specifications:	Analysis of IDN reports, including CMS quarterly reports and notices of training and hiring within the IDN.
Exclusion Criteria:	None
Data Source(s):	IDN documents
Comparison Group(s):	None
Comparison Method(s):	None (document review)
National Benchmark:	None

> **Evaluation Question #4:** To what extent has the DSRIP Demonstration enhanced the state's health IT ecosystem to support delivery system and payment reform? Have changes to the IT ecosystem brought about by the DSRIP Demonstration specifically enhanced the IDNs in regard to the following four key areas: governance, financing, policy/legal issues and business operations?

Hypothesis 4.1: Health IT infrastructure among the IDNs will improve as a result of the DSRIP Demonstration statewide and IDN specific project activities.

Measure 4.1.1	Enhancements to the IT System
Definition:	Assessment of the health information technology system on four dimensions: (a) governance, (b) financing, (c) policy/legal issues, and (d) business operations.
Technical Specifications:	1. Confidential and anonymous web-based survey with closed- and open-ended questions. Survey respondents will be multiple people in each IDN most knowledgeable about the four major topic areas of IT (e.g., governance, financing, policy/legal issues and business operations), including but not limited to IDN administrators, IDN information technologists, IDN legal staff, and IDN accountants. 2. Content analysis of IDN documents, including quarterly CMS reports and meeting minutes regarding changes to the IT System
Exclusion Criteria:	IDN and Medicaid stakeholders who are not knowledgeable about the health information technology system; members
Data Source(s):	1. Survey conducted twice during Waiver Demonstration (beginning of 2019 and end of 2020) 2. IDN Documents
Comparison Group(s):	None
Comparison Method(s):	1. Pre-DSRIP vs. post-DSRIP 2. None (document review)
National Benchmark:	None

Measure 4.1.2	Perceptions of the Enhanced IT System
Definition:	Semi-structured interviews will explore how various stakeholder groups perceive the enhanced health IT ecosystem to support delivery system and payment reform regarding governance, financing, policy/legal issues, and business operations.
Technical Specifications:	Approximately 20-25 interviews will be conducted with stakeholders, including Medicaid administrator(s), Medicaid data administrator(s), DHHS administrators, Medicaid and DHHS legal staff, MCO administrators, IDN administrators. Interviews will be audiotaped and transcribed for thematic analysis. Tapes will be destroyed after transcription.
Exclusion Criteria:	IDN and Medicaid stakeholders who are not knowledgeable about the health information technology system; members
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None

Measure 4.1.3	Perceptions of the Usability and Utility of the Enhanced IT System
Definition:	Semi-structured interviews will explore how various stakeholder groups perceive the enhanced health IT ecosystem in supporting health care delivery, integration, and coordination

Technical Specifications:	Approximately 20-25 will be conducted with beneficiaries and community and medical service providers, respectively. Interviews will be audiotaped and transcribed for thematic analysis.
Exclusion Criteria:	Members ≥18 years old who do not have a behavioral health disorder and who have not had at least one health care visit in the previous 12 months
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None

Hypothesis 4.2: *Health IT strategies implemented during the DSRIP Demonstration will result in improved information exchange across settings and enhanced care management for beneficiaries with behavioral health disorders.*

Measure 4.2.1	Care Coordination Composite Score
Definition:	The care coordination composite score is based on five questions regarding the care provided by the member's personal doctor and the doctor's staff in the last 6 months. Three items relate specifically to the care provided by the personal doctor: how often the personal doctor (a) had the member's medical records or other information about their care, (b) seemed informed and up-to-date about care from specialists, and (c) talked with the member about prescription medication. Two additional questions query the actions of the staff from the personal doctor's office: how often someone from the doctor's office (a) spoke with the member regarding test results and (b) assisted the member in managing care from different providers and services.
Technical Specifications:	The numerator will include the number of beneficiaries with a behavioral health disorder who responded "always" to each of the five questions regarding care coordination. The denominator will include all beneficiaries with a behavioral health disorder who responded to all of the questions.
Exclusion Criteria:	Beneficiaries <18 years old; beneficiaries who do not have a behavioral health disorder
Data Source(s):	CAHPS/QHP Experience of Care Survey
Comparison Group(s):	Pre-DSRIP to post-DSRIP
Comparison Method(s):	1. Mann-Whitney U-test, annually; stratified by age group 2. Regression, annually; stratified by age group
National Benchmark:	None

Measure 4.2.2	Ratings of Improvement in Care Coordination and Integration
Definition:	The surveys will address the extent to which DSRIP has achieved integration and coordination between providers including bi-directional integrated delivery of physical and behavioral health services, SUD services, transitional care, and the alignment of care coordination to serve the whole person. The provider survey will be focused on the organizational/operational perspective while the patient survey will be tailored to their experiences/perspectives.
Technical Specifications:	Questions and scoring will be drawn from established surveys (e.g., CAHPS, the Picker Institute).
Exclusion Criteria:	Beneficiaries without a behavioral health disorder
Data Source(s):	Separate surveys conducted at the beginning of 2019 and end of 2020
Comparison Group(s):	2019 survey vs. 2020 survey

Comparison Method(s):	1. Mann-Whitney U-test, annually 2. Regression, annually
National Benchmark:	None

Measure 4.2.3	**Perceptions of Improved Information Exchange**
Definition:	Semi-structured interviews will explore how various stakeholder groups perceive the enhanced health IT ecosystem to support information sharing across settings and the use of information to enhance case management.
Technical Specifications:	Approximately 20-25 interviews will be conducted with stakeholders, including Medicaid administrator(s), IDN administrators and providers. Interviews will be audiotaped and transcribed for thematic analysis. Tapes will be destroyed after transcription.
Exclusion Criteria:	IDN and Medicaid stakeholders who are not knowledgeable about the health information technology system; members
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None

Research Question #5: To what extent has the DSRIP Demonstration improved IDNs' readiness to transition to or implement Alternative Payment Models (APMs)? Are IDNs making adequate preparations in data infrastructure, financial infrastructure, and other required changes needed to achieve the goal of 50% of Medicaid provider payments to providers using APMs by the end of the demonstration period? Have the IDNs engaged with the state and managed care plans in support of that goal?

Hypothesis 5.1: DSRIP Demonstration activities have improved the IDNs' ability to make the necessary changes to their systems to transition to or implement APMs and achieve the DSRIP goal.

Measure 5.1.1	**Transitioning to Alternative Payment Models**
Definition:	Assessment of transition to alternative payment models (e.g. transition plans, policies, number of new payment models implemented, payments made to providers).
Technical Specifications:	Analysis of IDN reports, including CMS quarterly reports and notices of training and hiring within the IDN.
Exclusion Criteria:	None
Data Source(s):	IDN documents
Comparison Group(s):	None
Comparison Method(s):	None (document review)
National Benchmark:	None

Measure 5.1.2	**Experiences Transitioning and Implementing APMs**
Definition:	Semi-structured interviews will explore how IDN administrators perceive the transition to and implementation of APMs.
Technical Specifications:	Interviews will be conducted with IDN administrators (2-3 per IDN) and providers (35 stratified by site). Interviews will be audiotaped and transcribed for thematic analysis.

Exclusion Criteria:	None
Data Source(s):	Semi-structured interviews
Comparison Group(s):	None
Comparison Method(s):	None (thematic analysis)
National Benchmark:	None