Care transitions intervention model to reduce 30-day readmissions for chronic health conditions.

2biv

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Introduction

Care Compass Network is a Performing Provider System formed for the purpose of administering the Delivery System Reform Incentive Payment (DSRIP) program in a nine-county area of New York, including Broome, Chemung, Chenango, Cortland, Delaware, Schuyler, Steuben, Tioga, and Tompkins. CCN is a 501(c)(6) organization with five area health systems as corporate members. In addition, CCN has approximately 175 total partners, which include providers of medical care, mental health care, substance use disorder services, as well as a wide range of community-based organizations, whose services support underserved populations in the areas of food/nutrition, transportation, substance use, mental health, material support, health literacy, care navigation and coordination, housing, parenting and young children, etc. Through the course of the DSRIP program, CCN implemented eleven different projects with the objective of transforming the health care system into a value-driven network capable of providing high quality care and services to Medicaid members. System transformation, from the perspective of CCN and its partners, encompasses a wide range of changes, including the following:

- Greater collaboration and coordination between clinical and social care service providers
- Shift of services from inpatient and institutional settings to community and home
- A focus on addressing determinants of health, both social and clinical in nature
- Integration of services across domains, including mental/behavioral, physical, and social
- Promotion of self-management skills for both physical and mental needs
- Partner readiness for value-based contracts and development of key competencies

Now, at the conclusion of the DSRIP program, CCN is in a position to consider the lasting impacts that eleven DSRIP projects have had on Medicaid members, community members, and the health care eco-system at large. CCN's Population Health department, with input from many sources, has produced eleven project evaluation reports and score cards in order to best compare across projects, despite the differences in project objectives and reach. The findings of these report will inform CCN's next phase, including the use of CCN funding after September 2020, when the final phase of CCN partner contracts concludes.

Each project report reflects the findings from a mixed-methods evaluation. Qualitative information gathered from CCN staff, partners, Medicaid members, and community members contribute to the findings. In addition, the reports consider quantitative findings. Included in the report are findings on the scale and reach that CCN was able to achieve – the number of organizations engaged in the project and the number of Medicaid members engaged. CCN also considered the statistical relationship between project activities or services delivered to patient/clients and key patient outcomes from the DSRIP program including preventable emergency department visits, inpatient hospitalizations, and primary care engagement. Further, CCN considered the impact of the projects on several different quality indicators associated with project-specific DSRIP performance measures. All results are explained in detail throughout.

Data Sources

Information supporting this project evaluation comes from four primary sources. Each source of information contributes to the project scorecards, which allows for comparison across disparate projects.

To gather input from organizations intimately knowledgeable about the projects and their impact, we partnered with Research & Marketing Strategies to conduct structured in-depth interviews with partners who participated in the projects. In total, 21 in-depth interviews were completed. CCN Project Managers identified candidates from partner agencies for interviews based on their involvement in project

implementation and their role in the project. Candidates were invited to participate and their organizations were reimbursed a nominal payment to reflect the level of effort involved. Key themes assessed include patient outcomes, cost of care, lasting partnerships with other organizations, workforce development, and system transformation. Many interview questions were open-ended and allowed the respondent to comment freely, positively or negatively, about the effectiveness of the project. The questionnaire also used scale-based questions, which can easily be compared across respondents and projects.

CCN also gathered input on the same themes from partners at large through open dialogue at the four May 2020 Regional Performing Unit meetings (all held remotely via video conference call). In addition, a follow up survey using SurveyMonkey collected broader partner feedback on workforce development and system transformation using scale-based questions.

To gather information from Medicaid and community members, CCN leveraged the on-going, periodic electronic survey administered by RMS of a panel of Medicaid Members (self-identified) and community members. A brief survey tool was developed to gather high-level input on the activities that CCN and the DSRIP program at large promoted. Overall, the response rate was 14% (consistent with industry standards); 46 Medicaid members and 72 community members responded.

To gather input on the total CCN achievements for each project, we incorporated material from structured reports written by CCN Project Managers who are responsible for managing the project implementation, maintenance, milestone reporting to NY Department of Health, and payment to partners. Project Managers summarized project progress, noting major accomplishments, barriers, and options for sustainability.

Finally, to understand the impact of each project from a statistical perspective, CCN conducted a quantitative analysis to establish, at a person level, the link between project activities and patient outcomes, such as primary care engagement, emergency department visits, and inpatient discharges. Additionally, CCN considered project specific quality indicators and their link to the project activities. In each case, a cross-sectional analysis using data from July 2016 to June 2019 and the population of Medicaid members who were DSRIP attributed to CCN during Measurement Year 5 (July 2018 to June 2019). The data sources for these analyses included CCN project data, submitted to CCN by partners contracted for each project, and Medicaid Confidential Data pulled from the Salient Interactive Miner, a proprietary data mining tool made available to Performing Provider Systems like CCN for use under the DSRIP program.

Project Summary

The primary objective of the Care Transitions project is to reduce the occurrence of hospital readmissions by focusing on the period of time directly following discharge. While many patients meet a medical need for further skilled medical care, provided in an institution (skilled nursing or physical rehabilitation) or in the home, many patients who are at-risk for readmission do not meet this medical need. Under the Care Transitions project, hospital and community-based partners provided a 30-day supported transition period after a hospitalization. Within the structured program, new discharge practices and supportive services were designed to ensure discharge directions are understood and implemented by the patients at high risk of readmission, particularly those with cardiac, renal, diabetes, respiratory and/or behavioral health disorders.

CCN leveraged the Eric Coleman model of Care Transitions[1] to create a standardized approach to supporting Medicaid members post discharge. The Eric Coleman model focused on four pillars of support:

- Medication management
- Patient education on signs and symptoms of worsening ("red flags")
- Follow up care
- Personal health record

Using these pillars, CCN and partners created community-wide standards for the key elements of patient care for the initial 30-days following discharge. Discharge instructions were standardized across all participating hospital. The addition of the personal health record to participating hospitals' discharge materials affected all patients and was not limited to patients with Medicaid coverage. CCN and partners created and standardized the Health Coach role and service deliverables. In a modification of the Eric Coleman model, CCN relied on trained, non-medical Health Coaches to assist patients to manage their health and address needs. CCN also created a standardized method of tracking of Health Coach services, addressing a gap among organizations who previously did not have an electronic health record (EHR) system.

Overall, eight of nine CCN-area hospitals participated in the Care Transitions project. Each hospital identified and committed a project champion its implementation and long-term engagement. This champion was trained in the PPS adopted care transition model and oversaw the adoption of standards and new referral procedures to connect patients with health coach services. The hospital was reimbursed for ensuring the discharge instructions were given to the patient before discharge and that they contained 3 of 4 pillars. The hospital was also reimbursed when a warm handoff to a Health Coach occurred while the patient was still at the hospital. Lastly, since the Personal Health Record was new, hospitals were reimbursed for adopting and distributing the Personal Health Record as part of the discharge instructions. In total, over the DSRIP program, 49,278 Care Plans (Discharge Instructions) were created for Medicaid patients at discharge, including those who were discharged to institutional care.

Health coach services were provided by a variety of organizations, including the hospitals/health systems, home care agencies, and community-based organizations which support medical care but do not provide medical care services. Health Coaches attended a full day of training session to learn about the purpose of health coach services in the CCN Care Transition Model, requirements, and deliverables. Health Coaches promoted patient education on signs and symptoms of worsening, supported medication management, and assisted with follow up medical care. The Health Coach was expected to meet with the patient in the hospital before they were discharged to educate them on the program, perform a home visit with the patient within 2-3 days of discharge, follow up with weekly phone calls in the 30 days post discharge, refer eligible patients to a Medicaid Health Home (when appropriate), share discharge summaries with medical care providers, and provide a summary of the Health Coach activities to the patient's primary care provider after the 30 days period was completed. The Health Coach also served as a community health worker to assist the patient with any social determinant of health needs. According to Project Management Director, Dawn Sculley, the greatest impact of the Health Coach services can be achieved when Coaches are able to engage the patient throughout the 30-day period, providing all types of visits and types of support. Additionally, given the nursing shortage in CCN's service area (vacancy rate of

[1] For more information about the Eric Coleman model, see https://caretransitions.org/

6%, or 185 Registered nurses in 2017[2]), the non-medical approach to providing Health Coach services is both practical and sustainable, given program funding.

The Health Coach services have been seen as a PPS-wide success. Care Transitions is one of the few DSRIP projects where the staff of the inpatient facility have worked directly with staff from community-based organizations. Health Systems are in need of human resources and most do not have the capacity to take on Health Coach services for patients who are at lower risk of readmissions, which leaves a part of the Medicaid population without the necessary support post discharge. More often than not, there are community-based organizations that have existing relationships with patients in the counties they serve and many of them were able to provide Health Coach services to their community members to support the patients 30-days post discharge. CCN believes that new partnerships developed under the program will continue post DSRIP. They are a necessary step in the process of transitioning services from institutional care toward community-based care. Moreover, the non-medical approach may be more successful than a medical approach for some patients. CCN has data from a community-based organization showing a 66% rate of acceptance for the Health Coach in home visits among patients, which is higher than the rate previously achieved by staff from the acute care facility. This suggest that patients may be more likely to accept assistance from a community-based, non-medical Health Coach, as compared to the traditional nursing model of home care

Eleven different partners provided Health Coach services, including hospitals and community-based organizations. In many cases, community-based organizations partnered with the hospitals to provide these services through referral. Some Health Coaches were embedded in the acute care facilities directly, others received daily referrals from Discharge Planners. Some community-based organizations specialized in specific sub-populations (mothers and infants, or respiratory care, for example); in other cases, referrals were made for all Medicaid members who did not meet required higher level post-acute care. Some hospitals provided their own health coach services. Over the course of the program, approximately 31,000 health coach services were provided to Medicaid patients after their hospital discharge.

The appendix includes the story of one participating organization, Mothers and Babies Perinatal Network, and the health coach services provided under this project. Mothers and Babies Perinatal Network is a Binghamton-based organization that partnered with United Health Services Hospitals to provide Health Coach services to mothers and infants born at United Health Services Hospitals.

Evaluation Results

This table summarizes the evaluation results. In order to readily compare across projects, a scoring matrix was created and reflects each study component. The detailed scorecard can be found in the appendix.

Table 1: Project Impact Scorecard

Evaluation Elements	Possible Points	Points Received
View from the Front Line: Partners		
In Depth Interviews with Partners	25	23.14
RPU Meeting input and Survey	10	N/A
Member Voice: CCN's Medicaid and Community Member Panels		

[2] Based on a PPS-wide Workforce Committee initiative conducted for Care Compass Network

Panel Survey conducted by RMS	15	N/A
Community Accomplishments: CCN Project Managers		
Structured report by PMO, Follow up Interview	25	23
Performance Metric Impact: Population Health		
Project Impact on Performance Metric Results	15	8.86
Causal Effect	6	5
Cost Effectiveness Analysis	4	4
Overall	100	85.3

Refer to the appendix for detailed scoring criteria

Best Practices

The CCN Project Management Office provided valuable input and insight about each project's major achievements, obstacles, best practices, and overall value. Project Managers have a unique perspective as a result of their knowledge of DSRIP program objectives and requirements, regular tracking of project activities and services, relationships with participating organizations, and knowledge of how project activities have been rolled out or implemented across the PPS. Despite explicit criteria from the Department of Health for project requirements, there was relatively broad latitude in how the requirements could be implemented. A critical component of any evaluation are the insights of those who are most familiar with project management, provided that there is objectivity in the assessment.

1) Care Transitions is one of the few projects where the staff of the inpatient facility work directly with staff from community-based organizations. This model of communication, collaboration and care coordination is a best-practice approach for wrap-around support of vulnerable populations following discharge from inpatient care.

2) A second best-practice pertains to Care Transitions for the maternal and infant population given that the maternal and infant population is one of the largest populations with discharges from an acute care facility. Subsequently, Mothers and Babies Perinatal Network partnered with UHS and Lourdes to provide Health Coach services to the maternal and infant populations locally in Broome County.

The CCN Project Management Office also identified several critical success factors in the delivery of Health Coach services.

- Having Health Coaches available for each of the acute care facilities throughout the 9-county region,
- Allowing community-based organizations to provide Health Coach services in the acute care facility (includes consent and sharing data),
- Collaboration between acute care facility and community-based organization(s),
- Health Coach Training curriculum that teaches Health Coaches about the role, how they can be successful and the Health Coach services,
- Adoption of Personal Health Record at the acute care facilities,
- Warm Handoff from Discharge unit to Health Coach, and
- Summary of Health Coach services to the patient's Primary Care Provider

Key quotes

2biv Project Management Director Dawn Sculley, described this project as "Really critical" adding that, by touching base with a patient during that 30 days following discharge you can ask the important question- are they taking their medication? Can they get their medication? Are all the key social determinants of health are covered by the health coach within those 30 days? It helps connect them to services and resources that help them stay on top of their health."

Table 2: Total Project Engagement and Total CCN Spending

CCN engaged 15 unique organizations, 49,278 total members and provided health coach services to 32,134 unique members. CCN partners provided 80,465 total services; CCN distributed $4.1 million DSRIP dollars for this project. The following tables display partner engagement, service provision, and CCN funds distributed from DSRIP Year 2 through Year 5, which ended March 31, 2020.

Table 2a: Care Transitions Partner Engagement by Organization Type

	DSRIP Year				
Organization Type	DY2	DY3	DY4	DY5	Grand Total
Health Systems	7	8	8	7	8
Non-Health System Partners	2	6	7	5	7
Grand Total	**9**	**14**	**15**	**12**	**15**
Source: CCN Team analysis using Care Transitions Project Data, 2016-2020.					

Table 2b: Care Transitions Volume of Services by Organization Type

	DSRIP Year				
Organization Type	**DY2**	**DY3**	**DY4**	**DY5**	**Grand Total**
Health Systems					
A - Home Visit	54	691	469	360	1,574
A - Qualifying Care Plan	8,056	14,522	13,909	12,791	49,278
B - Phone Call	134	1,918	1,778	1,428	5,258
C - In Hospital Health Coach Visit	222	2,877	2,674	1,840	7,613
D - Health Home Referral		111	53	9	173
E - Discharge Summary		601	469	380	1,450
Non-Health System Partners					
A - Home Visit	18	379	564	567	1,528
B - Phone Call	48	1,945	2,441	2,232	6,666
C - In Hospital Health Coach Visit	130	1,103	1,369	1,122	3,724
D - Health Home Referral		77	135	115	327
E - Discharge Summary		798	1,134	945	2,877
Grand Total	**8,662**	**25,022**	**24,995**	**21,789**	**80,468**
Source: CCN Team analysis using Care Transitions Project Data, 2016-2020.					

Table 2c: Care Transitions Expenditure by Project Activity					
	DSRIP Year				
Project > Payment Item	DY2	DY3	DY4	DY5	Grand Total
2biv Care Transitions					
Collaboration Payment		$0	$14,553	$0	$14,553
D/C Summaries to PCPs		$20,780			$20,780
Discharge Plan Report		$127,619	$122,928	$90,968	$341,515
Disruptive Payment		$56,100			$56,100
Follow-Up Phone Calls		$60,270	$64,965	$48,540	$173,775
Health Coach Training		$7,508	$5,590	$1,040	$14,138
Health Coach Training (Hours)	$4,160				$4,160
Health Home Consents		$3,100			$3,100
Health Home Referrals		$1,775	$4,575	$3,100	$9,450
Home Visits	$18,120	$152,700	$153,150	$134,700	$458,670
Home Visits - Phone Calls	$4,850				$4,850
Hospital Visits	$34,680	$278,850	$302,550	$222,225	$838,305
IP - CTI Training (Hours)	$1,975				$1,975
IP - Successful Care Transitions	$871,875				$871,875
Pillar 4 Introduction		$169,560	$88,380	$74,140	$332,080
Prepayment		$109,166			$109,166
Retro Disruptive Payment		$64,205			$64,205
Sign-On Bonus		$230,469	$81,869	$0	$312,338
Transition Summaries to PCPs		$7,060	$32,180	$23,720	$62,960
Warm Handoff		$242,460	$92,160	$74,460	$409,080
Grand Total	**$935,660**	**$1,531,622**	**$962,900**	**$672,893**	**$4,103,075**
Source: CCN Team analysis using Care Transitions Project Data and CCN financial reports, 2016-2020.					

Quantitative Findings

Section 1: Cross Section and Trend Analysis

This section presents the quantitative analysis to establish a statistical relationship between the project activities and proxy measures for the DSRIP performance metrics. Performance metrics featured prominently in the DSRIP program, driving a significant portion of funding. The underlying question assessed in this section is: did the project make an impact on CCN's performance metric results? This is an important question as CCN considers areas of future investment and the overall return of participating in the DSRIP project.

For Care Transitions, we considered the impact of the care transition services on the likelihood that individuals incurred potentially preventable ED services (total and among those with a behavioral health diagnosis), inpatient hospital care, and primary care. These measures are proxies for key DSRIP performance metrics, including Potentially Preventable ED Visits (total), Potentially Preventable ED Visits among members with previous Behavior Health diagnoses, Preventive or Ambulatory Care visits, and Prevention Quality Indicator (Composite), which captures potentially avoidable hospital care. These metrics were chosen for

analysis based on a CCN Project Team analysis in 2016, which identified a probable impact of the project activities on the performance metrics.

The table below describes each Performance Metric and proxy measure as well as the study hypotheses. Through care transition services, it is possible to identify the social determinants of health and address associated needs in order to support an appropriate use of health services. By engaging a broad set of partners, both clinical and non-clinical partners, CCN sought to facilitate systematic changes and standardization of care transition services. Thus, we hypothesize that the 2biv program reduced the need for emergency services that may be better addressed elsewhere (i.e., potentially preventable) as well as the need for inpatient hospital care. Similarly, we hypothesize that care transition services are effective in connecting individuals to primary care services.

Table 3: Performance Metrics and Proxy Measures

Metric Name / Proxy	Proxy Metric Description	Study Hypothesis
Potentially Preventable ED Visits, per 100 Members **Proxy measure:** Having one or more Potentially Preventable ED visits	The number of potentially preventable ED visits (based on CPT codes reported on claims) among Medicaid Members, as defined by the NYU metric definition[3], per 100 members.	Care Transition services provided to individuals can help address underlying needs and direct individuals to services, thereby alleviating urgent needs which drive them to seek care in the ED. We hypothesize a decline in the likelihood that an individual has any ED visits after receiving care transition services.
Potentially Preventable ED Visits – Behavioral Health, per 100 Members **Proxy measure:** Having one or more Potentially Preventable ED visits, among members with a Behavioral Health diagnosis	The number of potentially preventable ED visits (based on CPT codes reported on claims) among Medicaid Members, as defined by the NYU metric definition. The analysis population is limited to members with a behavioral health diagnosis	Same as above. We hypothesize that individuals with behavioral health diagnoses (mental health and substance use disorder) will be more likely to seek care and services in other settings following care transition services.
Prevention Quality Indicator – Overall Composite (#90) **Proxy measure:** Having one or more inpatient hospitalizations	The number of inpatient discharges, defined by revenue codes reported on claims.	Care transition services provided to individuals can help address underlying needs and direct individuals to services, thereby alleviating urgent needs. We hypothesize that individuals will be less likely to require inpatient care following a care transition services.
Adult Access to Preventive and Ambulatory Care **Proxy measure:** Having one or more primary care visits	The percentage of members with one or more ambulatory and preventive care visits (defined by E&M Codes reported on the claim).	Care transition services provided to individuals can help address underlying needs and direct individuals to services, including primary care. We hypothesize that individuals will be more likely to use primary care services following care transition services.
Antidepressant Medication Adherence **Proxy:** Pharmacy Fills for Antidepressants	Number of people who remained on antidepressant medication for at least six months	Care transition services provided to individuals can help address underlying needs and direct individuals to services, including primary care. We hypothesize that individuals will be more likely to adhere to their antidepressant medications following care transition services.

[3] Billings, J., Parikh, N., & Mijanovich, T. (2000). Emergency department use in New York City: a substitute for primary care? *Issue brief (Commonwealth Fund)*, (433), 1–5.

Follow-up after hospitalization for Mental Illness – within 7 days **Proxy Measure:** Mental Health services visit volume		Care transition services provided to individuals can help address underlying needs and direct individuals to services, including primary care. We hypothesize that individuals will be more likely to follow up after hospitalization for mental illness following care transition services.
Initiation and Engagement of Alcohol and Other Drug Dependence Treatment **Proxy Measure:** Alcohol and Other Drug Dependence Treatment services (volume)	**Initiation AOD**: Percentage of patients who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient service or partial hospitalization within 14 days of the diagnosis. **Engagement AOD**: Percentage of patients who initiated treatment and who had two or more additional services with a diagnosis of AOD within 30 days of the initiation visit	Care transition services provided to individuals can help address underlying needs and direct individuals to services, including primary care. We hypothesize that individuals will be more likely to initiate and engage in Alcohol and Other Drug Treatment following care transition services.
Statin Therapy for Patients with Cardiovascular Disease (Receive and Adhere) **Proxy Measure:** Statin Therapy Fills	**Received Statin Therapy**. Members who were dispensed at least one statin medication of any intensity during the measurement year. **Statin Adherence 80%.** Members who remained on a statin medication of any intensity for at least 80% of the treatment period.	Care transition services provided to individuals can help address underlying needs and direct individuals to services, including primary care. We hypothesize that individuals will be more likely to receive and adhere to Statin Therapy following care transition services.
Source: CCN Team Analysis based on input from CCN Project Teams and NY DOH DSRIP Project Toolkits.[4]		

[4] NY DOH DSRIP Toolkits available at here: https://www.health.ny.gov/health_care/medicaid/redesign/docs/dsrip_project_toolkit.pdf (Accessed October 15, 2020).

Data is pooled from a few sources: 1) project data submitted by partners over the course of the project, 2) Medicaid claims data received by DOH and maintained by CCN, and 3) data pulled from Salient Interactive Miner data system, which reflects Medicaid claims and administrative information. Our quantitative analysis is limited to Medicaid members who were attributed to CCN in Measurement Year 5 and who elected to enable downstream data sharing through the NY DOH opt out process. Out of total 86,849 CCN Attributed Medicaid Members, 4,794 (5.5%) members received Care Transitions services between July 2016 and May 2019. Out of these 4,794 members, 2,775 (57.8%) members received Care Transitions services that were followed at least one PPV, 1,122 (23.4%) were followed by one or more hospitalizations, and 4,649 (96.9%) were followed by at least one primary care encounter during the total analysis period (July 2016 through May 2019). Table 4 below describes the study population.

Table 4: Analysis Sample Size and Service Volume for Selected Health Care Services

	Received Care Transitions	No Care Transitions Services
Total CCN Attributed Medicaid Members	4,794	82,055
Medicaid Members with 1+ PPV	2,775 (57.8%)	38,533 (46.9%)
Medicaid Members with 1+ PPV (Behavioral Health)*	681(4.76%)	6,776 (47.4%)
Medicaid Members 1+ Inpatient Admission	1,122 (23.4%)	7,402 (9%)
Medicaid Members 1+ Primary Care	4,649 (96.9%)	78,296 (95.4%)

Source: CCN Team analysis using CCN project data, Salient Interactive Miner, and Medicaid Claims data from the MY5 Attributed population, July 2016 to June 2019. *PPVs (Behavioral Health) refers to PPVs among members with one or more behavioral health diagnosis. Total members with one or more behavioral health diagnosis are not shown on the table.

In the following sections, we consider the statistical relationship between Care Transitions health coach services and important health outcomes that the Care Transitions project is designed in impact: Potentially Preventable ED Visits, hospitalizations, and care engagement (primary care and other measures). For Care Transitions services to have a probable causal impact on PPVs and hospitalizations, we would expect to see a negative association: PPVs and hospitalizations should be less frequent following health coach services as patient needs are addressed in other settings, either by the health coach or by the appropriate medical care providers. Similarly, if Care Transitions services improve care engagement, we would expect a positive association with primary care utilization and other forms of care engagement. Care engagement should be more frequent following the health coach services, if the coaching services effectively promote follow up care and patient education. To test these associations, we consider utilization before and after the provision of health coach services. A cross sectional analysis allows us to control for person-level characteristics that may also impact utilization. The cross-sectional analysis tests for an overall association between project engagement and our health outcomes.

For the cross-sectional analysis, we used logistic regression models to statistically relate the performance metric proxy variables to the health coach services. We tested whether Medicaid members who received care transition services were less likely to also have one or more PPVs than their counterparts, less likely to have any type of hospital admission, and/or more likely to have at least one primary care visit. The logistic model yields an Odds Ratio, which is a measure of association between an “exposure” and an “outcome”. In this analysis, the health coach services are the “exposure.” The “outcomes” include having a PPV, hospital

admission, and primary care visit.[5] In this example, the Odds Ratio represents the odds that a Medicaid member will experience a PPV given the member also received a health coach service, compared to the odds of experiencing a PPV in the absence of any care transition services. Person-level variables including age, gender, and county were used as control variables.

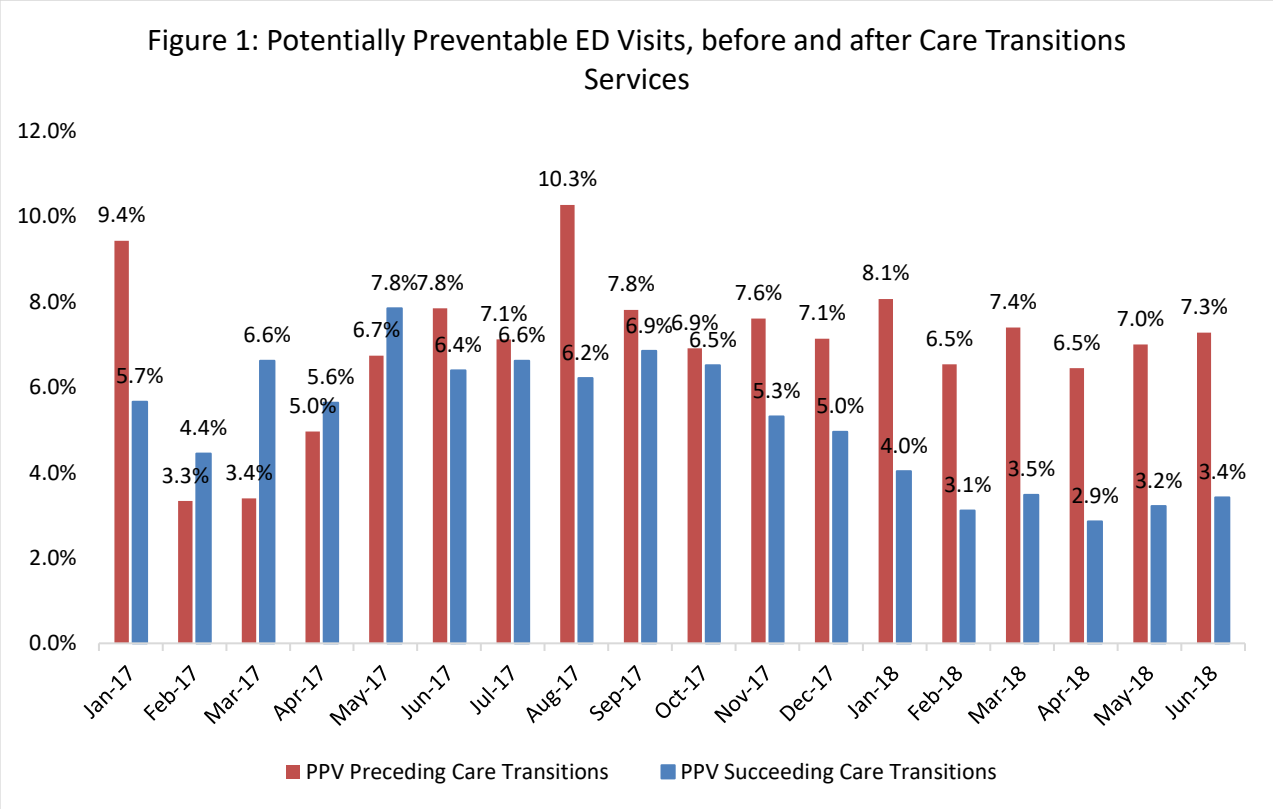
Potentially Preventable ED Visits

Pre/Post Analysis among Attributed Members who Received Health Coach Services

In Figure 1, we present monthly proportions of health coach services (provided to attributed Medicaid members) with a PPV in the year before and after the service. In total, there were 16,068 health coach services provided between January 2017 and June 2018 among attributed members. Cumulatively, 1,155 health coach services had a PPV (7.2%) in the preceding 12 months, while 834 services were followed by a PPV in the year following the health coach service (5.2%). The proportion varies month to month, with some outliers in each. However, while the trend in PPVs preceding the health coach services is relatively flat, the trend in PPVs which followed the health coach service exhibits a relatively consistent decline, especially after September 2017. The rate differentials in most months and differing trend lines suggest that health coach services can impact potentially unnecessary or avoidable use of the Emergency Room. While these differences are not regression adjusted to control for factors which may affect the PPV rate other than the project services, the rates and trends are statistically different at the 1% level. At this level of significance, we can reject the implicit null hypothesis that the two rates and their trends are the same with 99% confidence.

[5] Szumilas, M. (2010). Explaining odds ratios. Journal of the Canadian Academy of Child and Adolescent, 19(3), 227–229.

Figure 1: Potentially Preventable ED Visits, before and after Care Transitions Services



Cross Sectional Analysis

A cross-sectional analysis was conducted to statistically test whether attributed Medicaid members who received health coach services under the Care Transitions program were less likely to have a PPV (and similarly, hospitalization or primary care visit (discussed below)) than other attributed members. The comparison is made to the larger attributed population and is not limited to a subgroup. Statistically significance is noted with * (10% significance (modest)), ** (5% (medium)), or *** (1% significance (high)). The cross-sectional results indicate that PPVs are more common among those engaged in the project, which is not the desirable effect. However, this may test may be too high of a bar – it does not take the timing of PPVs and health coach services into account. This test does not narrow in on the chance of PPV after having received health coach services, but looks at all times. Moreover, PPVs may be more common among anyone with a hospital admission (which the health coach services follow) than the general population.

With the comparison of PPVs preceding and succeeding health coach services and the cross-sectional results in mind, we conclude that there is good evidence that the Care Transition health coach services have had a positive impact on health outcomes. While these services do not appear to have reduced the overall chance of PPV on net compared to the general population, among those engaged the likelihood of PPV following receipt of health coach services is lower than before receiving those services.

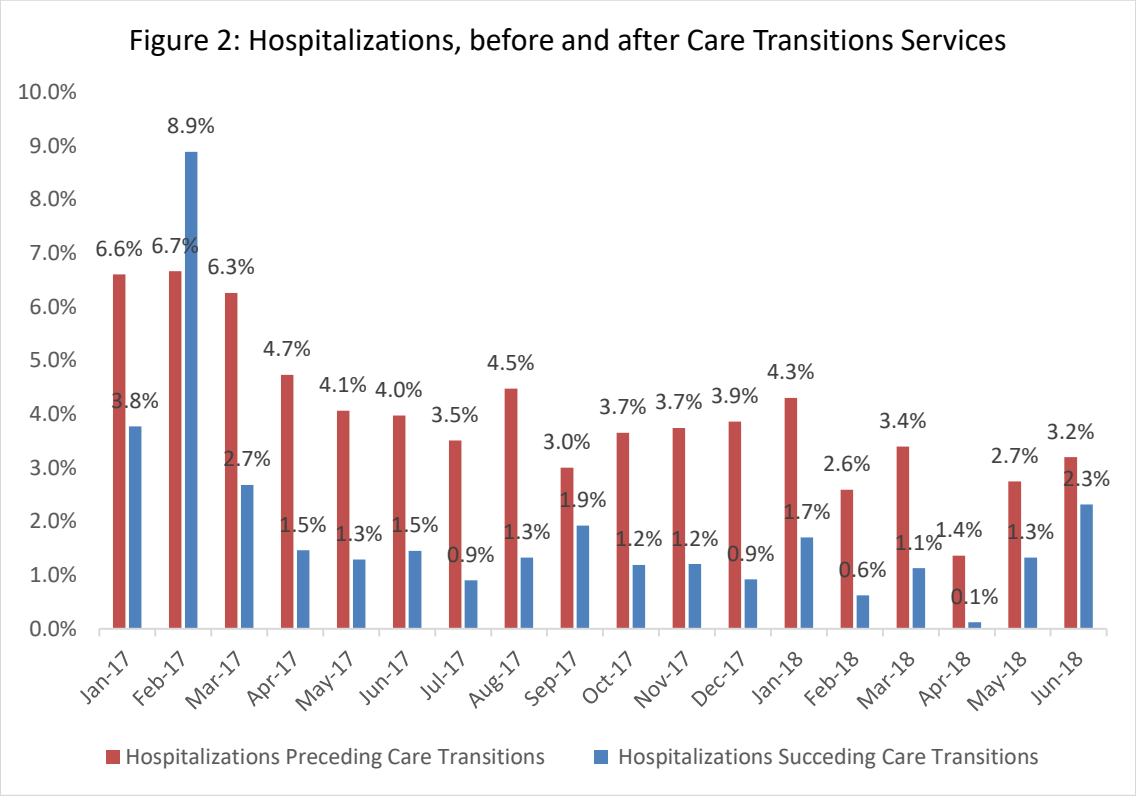
Table 5a: Cross Sectional Analysis - Potentially Preventable ED Visits			
Performance Metric Proxy	**Odds Ratio**	**Interpretation**	**Score**
Potentially Preventable ED Visits	1.44***	Attributed Medicaid members who received at least one Care Transitions health coach service are 44% more likely to have one or more Potentially Preventable ED visits at any point than the general attributed population.	0
Potentially Preventable ED Visits (Among members with a Behavioral Health diagnosis)	2.08***	Among Attributed Medicaid members with behavioral health diagnoses, those who received at least one Care Transitions health coach service are about twice as likely to have one or more Potentially Preventable ED visits at any point than those who received no health coach services.	0
Source: CCN Team analysis using CCN project data, Salient Interactive Miner, and Medicaid Claims data from the MY5 Attributed population, July 2016 to June 2019. PPVs (Behavioral Health) refers to PPVs among members with one or more behavioral health diagnosis. Refer to the appendix for detailed scoring criteria.			

Hospitalizations

Pre/Post Analysis among Attributed Members who Received Health Coach Services

In Figure 2, we present a similar graph, now considering inpatient admissions which occurred within a year of a health coach service – before and after. In total, there were 16,068 health coach services between January 2017 and June 2018 provided to MY5 attributed Medicaid members. Cumulatively, there were 593 (3.7%) health coach services with a preceding inpatient hospitalization (other than the admission directly tied to the health coach services) and 220 (1.4%) health coach services that were followed by hospitalization. Hospitalizations that occurred outside a 12-month window were excluded from the analysis. Over time, with the exception of an early month, the rate of hospitalization after having received the health coach service is lower than prior to the services. The rate differentials in most months suggest that health coach services can impact the need for inpatient care. While these differences are not regression adjusted to control for factors which may affect the admission rate other than the project services, the rates are statistically different at the 1% level. At this level of significance, we can reject the implicit null hypothesis that the two rates and their trends are the same with 99% confidence.

Figure 2: Hospitalizations, before and after Care Transitions Services



Again, in the context of the positive association in the cross-sectional analysis in the below table 5b, members who received 2biv services may be more likely than others to experience hospitalizations at any time. Members who completed a care transitions service were at an odd of 2.96 times more likely to have an inpatient admission. However, the cross-sectional analysis does not account for the timing of 2biv Services relative to the hospitalizations.

Table 5b: Cross Sectional Analysis – Inpatient Admissions

Performance Metric Proxy	Odds Ratio	Interpretation	Score
Inpatient Admissions	2.96***	Completing a Care transitions service is associated with an odd of 2.96 greater likelihood of Inpatient Discharges.	0

Source: CCN Team analysis using CCN project data, Salient Interactive Miner, and Medicaid Claims data from the MY5 Attributed population, July 2016 to June 2019.

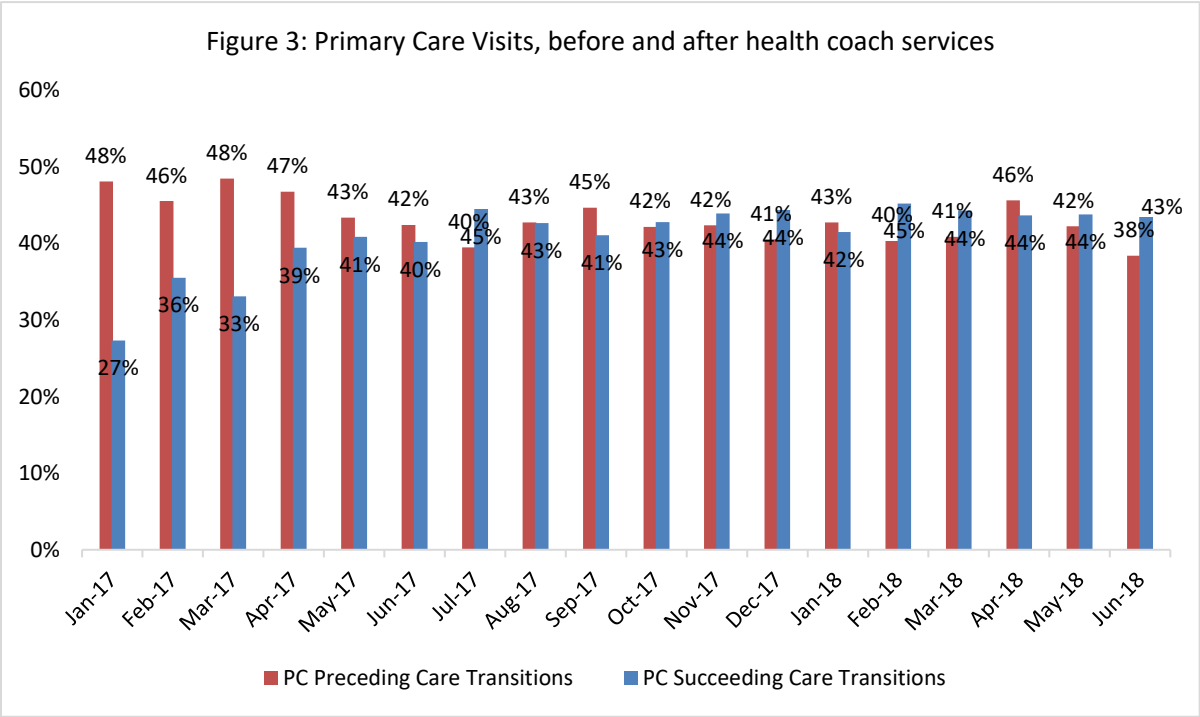
Primary Care Visits

Pre/Post Analysis among Attributed Members who Received Health Coach Services

Finally, in Figure 3, we present primary care utilization before and after a health coach service (12-month windows). Among the 16,608 health coach services provided to MY5 attributed members January 2017 and June 2018, 42.5% (6,832) were preceded by a primary care encounter, while 42% (6,804) were followed by a primary care encounter. As observable the Figure 3, the difference in the trends month to month is smaller and less consistent than with PPVs and hospitalizations. However, overall, the trends do statistically differ

at the 10% significance level. Thus, the implicit null hypothesis that the two trends are indistinguishable can be rejected with 90% confidence.

Figure 3: Primary Care Visits, before and after Care Transitions Services



Cross Sectional Analysis

A cross-sectional analysis was conducted to statistically test whether attributed Medicaid members who received health coach services under the Care Transitions program were more likely to engage in primary care, mental health, and substance use disorder treatment services, or to fill antidepressant and statin medications. Statistically significance is noted with * (10% significance (modest)), ** (5% (medium)), or *** (1% significance (high)). The cross-sectional results indicate that these forms of care engagement are more common among those engaged in the project, which is the intended effect. However, the cross-sectional results do not account for the timing of when health coach services occurred relative to the care engagement indicators.

In the case of primary care, the cross-sectional results are consistent with the pre-post analysis above. This is, among those engaged in the project and received health coach services, primary care engagement increased after the health coach services were provided. The cross-sectional results show that those engaged in the project were also more likely than the general attributed population to engage in primary care in general. Taken together, the statistical tests show the intended correlation between health coach services and primary care engagement.

With respect to the other forms of care engagement, there are positive associations between project engagement and engagement in services. Attributed Medicaid members who received health coach services were more likely, as seen in the Odds Ratios greater than 1.0, than the general attributed population to also engage in mental health care, substance use disorder treatment services, and fill antidepressant and statin

medications. Table 5c presents the results from these regression models and provides a brief interpretation of the results.

Table 5c: Cross Sectional Analysis – Primary Care Utilization and other Measures of Care Engagement

Performance Metric Proxy	Odds Ratio	Interpretation	Score
Primary Care Visit (1 or more)	1.51***	Attributed Medicaid members who received health coach services were 51% more likely than the general attributed population to have at least one primary care visit.	13.2
Mental Health Care Encounter (1 or more visit)	1.35***	Attributed Medicaid members who received health coach services were 35% more likely than the general attributed population to have completed at least one mental health encounter.	10.8
Alcohol and Other Drug Dependence Treatment Services (1 or more SUD treatment service)	2.66***	Attributed Medicaid members who received health coach services were more than twice as likely than the general attributed population to have completed at least one substance use disorder treatment encounter.	15
Antidepressant Medication (1 or more Medication Fill)	1.36***	Attributed Medicaid members who received health coach services were 36% more likely than the general attributed population to have filled at least one antidepressant medication.	10.8
Statin Therapy for Patients with Cardiovascular Disease (1 or more medication fill)	1.79***	Attributed Medicaid members who received health coach services were 79% more likely than the general attributed population to have filled at least one statin medication.	15
Prevention Quality Indicator 90 (1 or more inpatient hospitalizations)	7.65***	Completing a Care Transitions service is associated with a 7.65 greater likelihood of number of admissions which were in the numerator of one of the adult prevention quality indicators.	15

Source: CCN Team analysis using CCN project data, Salient Interactive Miner, and Medicaid Claims data from the MY5 Attributed population, July 2016 to June 2019. Refer to the appendix for detailed scoring criteria.

Summary of quantitative findings:

Summarizing the relationship between Care Transitions health coach services and the three outcomes of interest, this analysis suggests that health coaching may be effective in encouraging patients to seek care in settings other than the emergency rooms and encouraging seeking care in primary care settings. The effect of health coaching not strong enough to have reduced the overall chance of PPV on net compared to the general population, among those engaged the likelihood of PPV or hospital admission following receipt of health coach services is lower than before receiving those services. Combined with the apparent positive association with several different indicators for engagement in care, we conclude that there is sufficient evidence to conclude that the Care Transitions health coach services positively impacted patients' health outcomes. We assigned four out of six possible points to the causal effect item on the Project Score Card to reflect these results.

The score card below assigns causal effect and cross-sectional analysis points based on the results.

Table 6: Cross Section and Causal Effect Score Card		
	Cross Section (15)	**Causal Effect (6)**
Potentially Preventable ED Visits	0	2
Inpatient Hospitalizations	0	2
Primary Care Engagement	13.3	1
Total Points Assigned to Score Card	**8.86**	**5**

Section 2: Cost-Effectiveness Analysis

Cost effectiveness is a measure of the value of an initiative, project, or program stated in terms of its anticipated benefits. For the DSRIP projects in general, CCN sought to improve patient outcomes among those engaged in the project. Patient outcomes are measured in terms of the reduction in unnecessary use of the emergency room, a reduction in hospitalizations, and increases in primary care engagement. Therefore, cost effectiveness of the projects is defined in these terms.

The cost-effectiveness analysis builds off the pre/post analysis presented above. Total Savings reflects the value of avoided utilization of emergency room care, inpatient hospital care, and primary care due to the project. This measure is an estimate of the value of the project, comparing utilization before and after project engagement.

Total Savings is calculated by comparing utilization before and after project engagement. Total Savings is a one-year estimate of savings accruing to the health care system at large, attributed to the project activities. The estimates presented in Table 7 are on figures from DSRIP Year 4, including pre- and post-utilization among MY5 attributed Medicaid members engaged in the project between July 2017 and June 2018 and published cost estimates for ED visits, inpatient care, and primary care encounters (which reflect charges).[6,7,8] For Care Transitions, health coach services are associated with a reduction in the use of hospital Emergency Departments, a reduction in hospital admissions, and an increase in primary care engagement. For each utilization type, savings is estimated based on the change in utilization and the cost factor. Total Estimated Savings is a summation across the three measures; the reduction in ED and inpatient care is partially offset by the increase in expenditures for primary care services. Total Estimated Net Savings is calculated by subtracting the variable costs associated with operating the Care Transitions project in DSRIP Year 4. Net Estimated Savings per Project $ is a measure of the cost effectiveness or return on investment per dollar spent on the project. As calculated, CCN estimates that for every dollar spent on the Care Transitions project in DSRIP Year 4, $4.46 in net savings accrued to the health care system at large in the form of avoided use of services.

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[6] Health Care Cost Institute (2019). The average emergency room visit cost $1389 in 2017. Available from: Average Cost of ER Visit (2017)

[7]2018 Hospital Adjusted Expenses per Inpatient day: Kaiser Family Foundation / State Health Facts Available from: Hospital Adjusted Expenses per Inpatient Day(2018). Data from 1999 - 2018 AHA Annual Survey, Copyright 2019 by Health Forum, LLC, an affiliate of the American Hospital Association. Note: Average length of stay in NY (2016) was 4.6 days. https://www.aha.org/system/files/2018-07/2018-aha-chartbook.pdf

[8]Health Care Cost Institute (2016-2017); Binghamton, NY Average (Office Visit – Primary Doctor – Established Patient – Moderate Complexity. Range is $69-$87. We used $78 as a point estimate. Available from: Average Cost of PC Visit in Binghamton

Table 7: Avoided Utilization and Net Savings Associated with Care Transitions (July 2017-June 2018)							
	Avoided ED Visits	Avoided Hospital Admissions	Increased Primary Care Visits	Total Estimated Savings due to Avoided Utilization	Project Variable Costs	Total Estimated Net Savings	Net Estimated Savings, per Project $
Health Coach services	346	282	166	$ 4,219,439	$ 772,508	$ 3,446,931	$ 4.46
Source: CCN Team analysis							

This cost effectiveness analysis focuses on the fully-implemented value of the project services. We exclude fixed costs from this analysis. While each DSRIP project required infrastructure investment by CCN and its partners, these investments were largely completed by DSRIP Year 4. Excluding fixed costs from the analysis is appropriate in order to make a more direct comparison of service-related variable costs between the project and their health impact. Including fixed costs may unduly weight the analysis against the projects since the fixed cost savings related to ED visits, hospitalizations and primary care utilization are not directly reflected in the service charges. We analyzed each project independently and assume the results are independent. While there was overlap in patient engagement across the projects, it was relatively minor. We do not anticipate that overlap in project engagement causes cross-contamination of results.

Table 8: Cost Effectiveness Score Card Points	
	Score Card (4)
Potentially Preventable ED Visits	1.33
Inpatient Hospitalizations	1.33
Primary Care Engagement	1.33
Total Points Assigned to Score Card	**4**
Source: CCN Team analysis	

To conclude the quantitative analysis, evidence suggests promising results in the areas of increased primary care engagement as well as reduced emergency room visits. While the cross-sectional analysis did not yield the desired results, the trend analysis suggests that over time it became less common to experience a PPV after receiving 2biv services. These are promising results. Regarding primary care engagement, on net there was a positive association between receiving 2biv Services and primary care services.

Qualitative Findings

a) Project Specific Feedback from Partners

In-depth interviews were conducted with select partners who were involved in project 2biv.

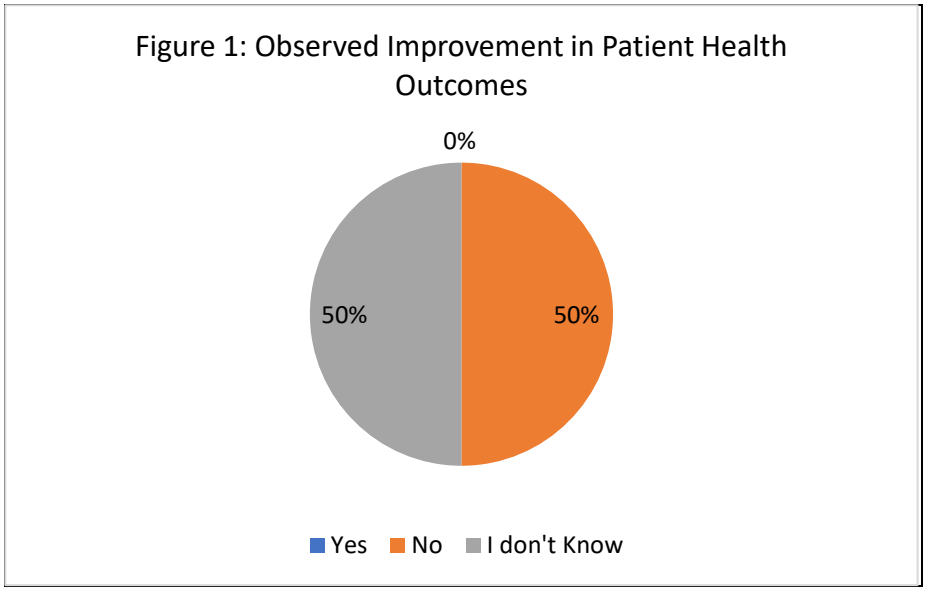
Setup and History: One of the partners stated they focused on a specific population, pregnant women, and those who just delivered. With the model of the pre-hospital, pre-discharge visits, they are visiting all moms who deliver at both Wilson and Lourdes hospitals, the two maternal delivery hospitals in Broome County. Another partner stated their organization has two hospitals that participate in the program. They work on all the components that relate to the in-hospital discharge. They identify red flags in discharge summaries, as well as secure primary care visits prior to the patients leaving the hospital. They have developed a patient handbook based on the Coleman Model that is put in every package that the patient receives upon admissions and during their stay. They also have a LACE score (risk of re-admission upon discharge).

Patient Outcomes

Table 1: Patient Outcomes

Interview Question	Rating	Feedback	Score
Extent project has made a positive impact on patients/clients	★★★★★	This project formalized the process of securing the patient's primary care follow-up appointment before they left the hospital. It created transparency that wasn't happening on a regular basis.	**5**
Extent project activities make a positive long-term impact on patients/clients	★★★★½	Follow up with young moms, if they have other children, had a long-term benefit.	**5**
Average			**5**

Figure 1: Observed Improvement in Patient Health Outcomes



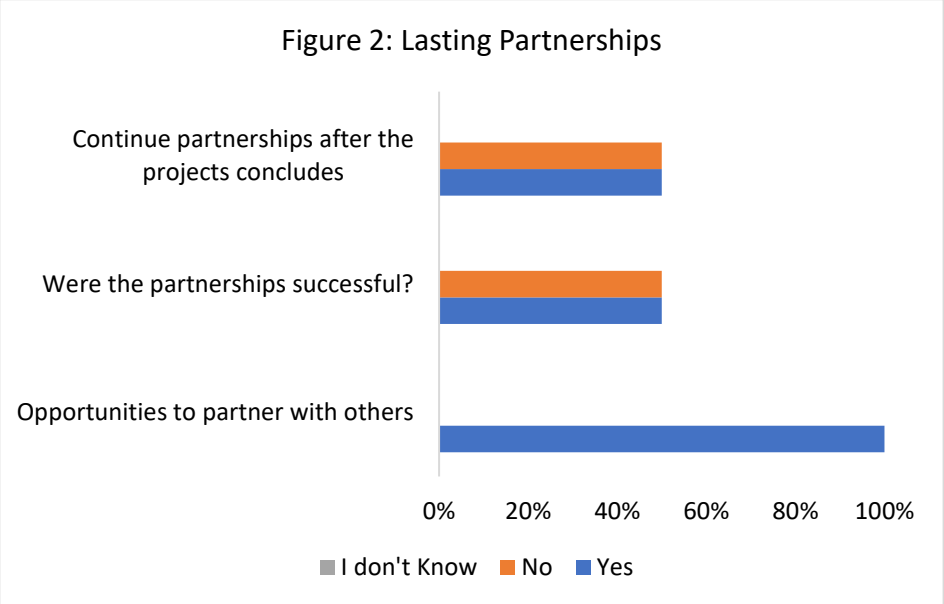
Explanation of Figure 1: When asked if the staff at partner sites observed an improvement in patient health Outcomes: 50% of respondents said no. 50% said they don't know. When asked why not, one of the partners explained they don't have direct observation, not in long-term. So, while the model that CCN is following with the Care Transitions calls for the 3 follow-up phone calls within the 30-day period, they do tend to offer that to stay in contact with some pregnant women if they are requesting it, but for all of the women they are working with, they provide a twofold service. Over and above the standard expectations of the home visit and the phone call follow-ups, they educate every single mom about safe sleep for the baby. It's part of a statewide initiatives. In addition to those three calls within the 30 days, they are also providing a follow-up call within 45 days to do a survey with them around their practice of safe sleep.

Cost of Care

Table 2: Cost of Care

Interview Question	Rating	Feedback	Score
Extent project activities reduction in cost of care long term	★★★★★	It is the issues and needs that families have at their home that may generate health issues or hospital re- admissions. Helping to connect these patients with SDoH needs, reduces cost of care in the long term.	5

Figure 2: Lasting Partnerships



Explanation of Figure 2: 100% of the respondents said that project 2biv provided them with opportunities to partner with others. The primary partnership was with the hospitals. It was initially a lengthy process in the beginning to get protocols in place and it involved many meetings with higher level administration mangers to provide joint care for patients. However, 50% of the respondents said that these partnerships were successful and they would continue these partnerships after the project concludes. One of the partners stated that the reason these partnerships weren't successful was because

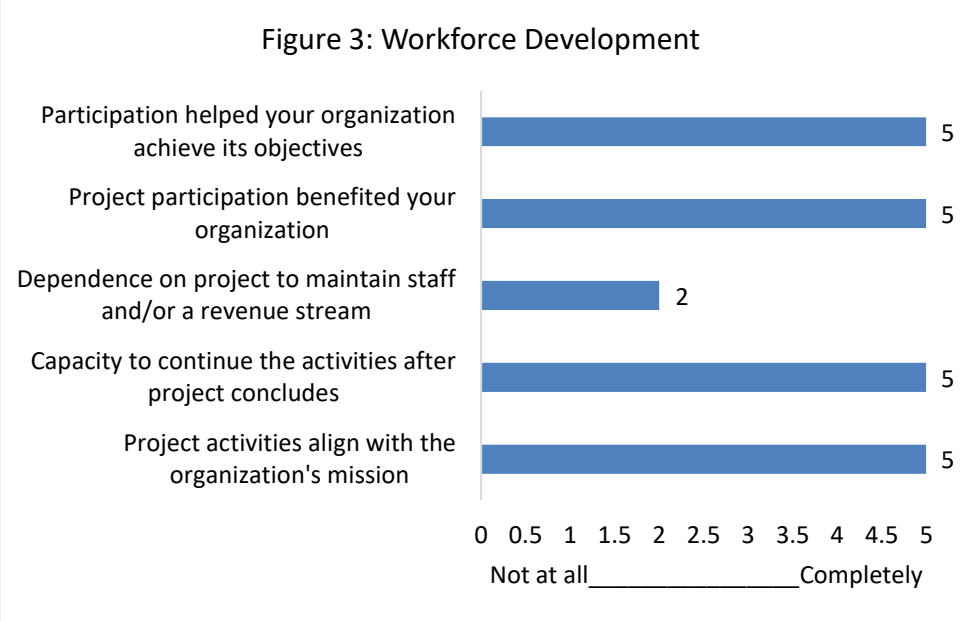
they couldn't integrate them into their business. Their partner organizations didn't have the resources to offer home visits.

Table 3: Lasting Partnerships			
Interview Question	Rating	Feedback	Score
Extent the project activities have improved coordination of patient care	★★★★★	The hospital staff have done their best to educate (specifically new moms) on taking their baby home, and following up with home visits. Scheduling of patient's primary care visit post discharge really made a difference.	5

Workforce Development

When asked about how many positions were involved in this project one partner said 8 positions and it consumes minimal time whereas another partner said that it is hard to answer as their entire nursing staff is involved in it and it consumes more than half of their time. The graph below highlights the rating that respondents gave on a scale of 1 to 5 with 1 being "Not at all" and 5 being "Completely"

Figure 3: Workforce Development

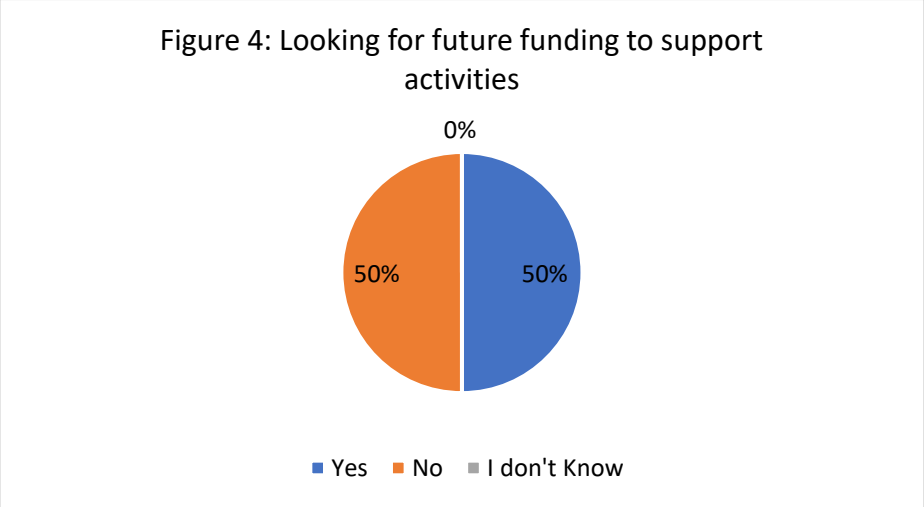


Explanation of Figure 3: When asked about the extent to which project activities align with the organizations mission, respondents gave it a rating of 5. 100% of the respondents said that they have the capacity to continue activities after the project concludes and gave it a rating of 5. When asked about the extent to which the organization depends on the project to maintain staff and/or revenue stream, the partners gave it a rating of 2 and stated that about 21-30% of their revenue comes from this DSRIP project.

This is a good indication as partners have the funding and the capacity to continue after DSRIP concludes. When asked about whether the project benefitted their organization and helped achieve its overall objectives, 100% of the respondents indicated that the contribution is significant and gave it a rating of 5.

Organizations Looking for Future Source of Funding

Figure 4: Looking for Future Funding

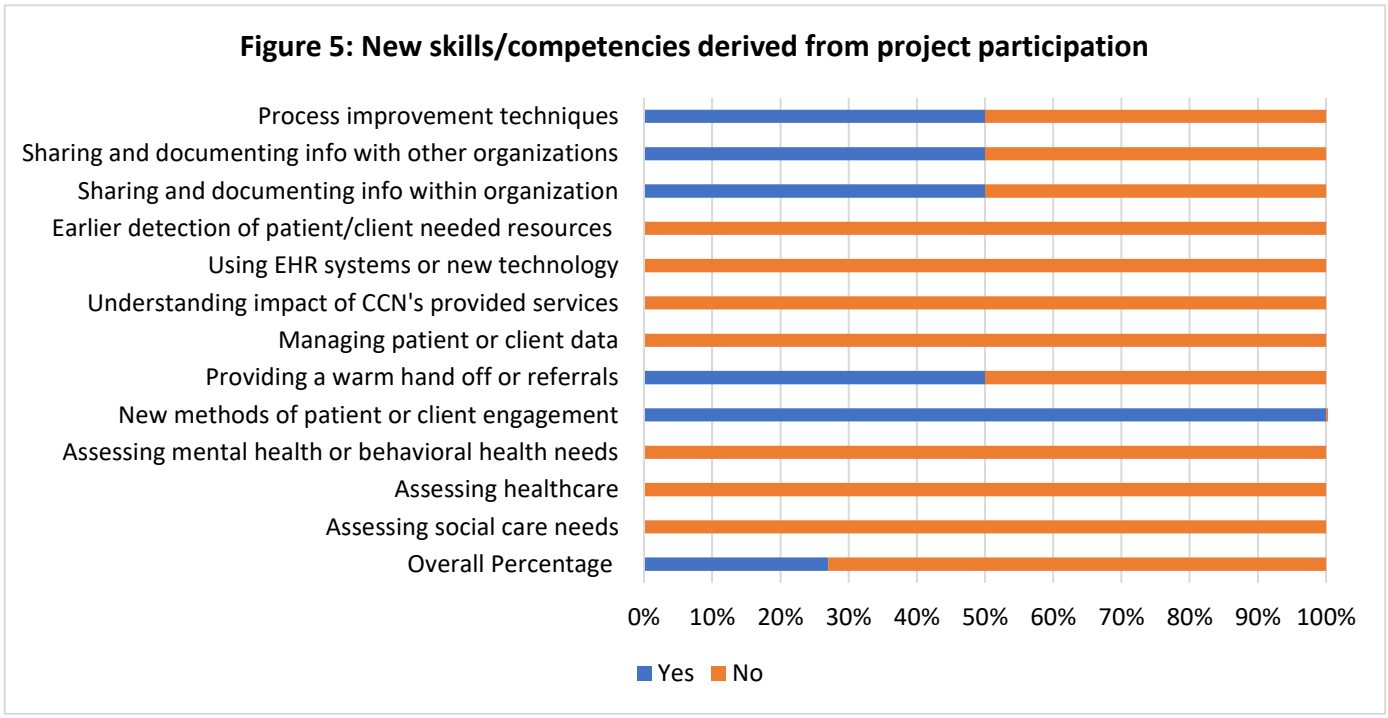


Explanation of Figure 4*:* When asked about whether the partners engaged with 2biv are looking for future sources of funding, 50% of the respondents said yes, however 50% said no. As a follow up question, when asked if their staff will be downsized or redeployed if the project is discontinued, 100% respondents said they don't know.

Figure 5: New skills/competencies derived from project participation

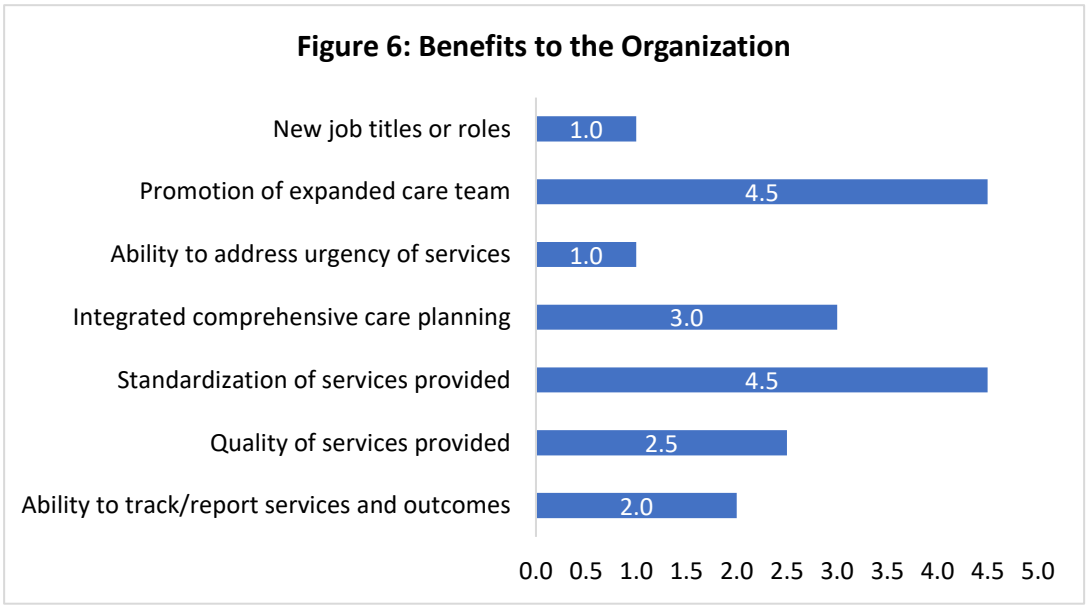
Explanation of Figure 5: 27% of the respondents said they developed new competencies and skills as a result of this DSRIP Project. However, 73% said they didn't. In particular, 50% of the respondents said they developed process improvement techniques, sharing and documenting information with other organizations and within their organization, and providing a warm handoff/referral. 100% of the respondents said that they developed new methods of patient or client engagement.

100% of the respondents said that they have not developed new skills like earlier detection of patient/client needed resources, using EHR systems or new technology, managing patient or client data, assessing behavioral or mental health of patients, accessing healthcare, and assessing social care needs. These are the skills that can be focused on if the project was to continue post DSRIP.



Extent to Which Participation Benefited Our Partner Organizations

Figure 6: Benefits to the Organization



Explanation of Figure 6: When asked to what extent participation has the project benefitted our partner organizations, the overall ranking was variable on a scale of 1 to 5 where 1 being “Not at all” and 5 being “Significant”. In terms of ability to track and report on services/outcomes, 100% of the respondents rated it a 2 out 5. Regarding the quality of services provided, partners ranked it at 2.5. Standardization of services provided was ranked at 4.5 out of 5. Integrated comprehensive care planning is rated 3. Ability to address urgency of services is ranked at 1. In terms of promotion of expanded care team, partners ranked it 4.5 out of 5 whereas on creating new job titles/roles, 100% of the respondents rated it 1.

Table 4: Scoring of Workforce Development Questions

Questions	Rating	Score
Project activities align with the organization's mission	★★★★★	5
Capacity to continue the activities after project concludes	★★★★★	5
Project participation benefited your organization	★★★★★	5
Participation helped your organization achieve its objectives	★★★★★	5
Ability to track/report services and outcomes	★★☆☆☆	2
Quality of services provided	★★½☆☆	2.5
Standardization of services provided	★★★★½	5
Integrated comprehensive care planning	★★★☆☆	3
Ability to address urgency of services	★☆☆☆☆	1
Promotion of expanded care team	★★★★½	5
New job titles or roles	★☆☆☆☆	1
Average		**3.59**

Finally, to conclude feedback on Workforce Development, we asked a few general questions and received a rating as highlighted in the table below. Rating of 1 is "Minimal" and 5 is "Significant".

Table 5: Workforce Development

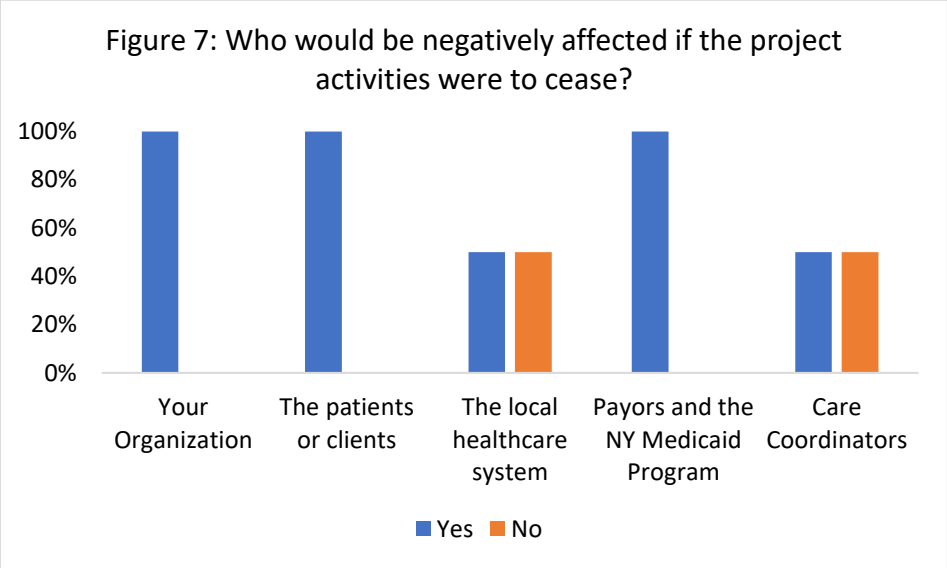
Questions	Rating	Score
a. This DSRIP project has helped your organization prepare in performance-based contracts with payers.	★★★★☆	5
b. This DSRIP project has helped your organization promote or develop our services.	★★★★☆	5
c. This DSRIP project provided funding for activities that were otherwise unfunded.	★★★★★	5
d. This DSRIP project provided funding to train and/or expand your personnel in ways you would have not done ourselves.	★★★★☆	5
e. This DSRIP project supported your organization to undertake activities that we see value in.	★★★★½	5
f. Your organization will continue the activities of this project after the DSRIP project completes.	★★★★★	5
g. This DSRIP project has given your organization a platform to share best practices.	★★★☆☆	3
Average		4.7

System Transformation

To assess system transformation, we asked the partners number of questions and got a rating as highlighted in the table below. Rating of 1 is "Not at all" and rating of 5 is "Completely". The respondents could reply "Don't know".

Table 6: System Transformation			
Questions	**Rating**	**Feedback**	**Score**
a. Better integration of services across settings or organizations	★★★★★	The partnerships between the hospitals and our agency has an extraordinary benefit to all the patients.	5
b. Ability to share data in real time to improve patient or client care	★★★☆☆	No Feedback	3
c. Promotion of community-based services (over institutional care)	★★★½☆	No Feedback	5
d. Promotion of team-based care (more coordinated care; cross-organizational teams)	★★★★½	Communication with social worker, the nursing staff and PCP helped. Patients are being connected to primary care when discharged. Also, when the patient goes to primary care, they are put on the panel for some of the care coordinators depending on how high their risk was for readmission. They also implemented the LACE score i.e. a risk score for readmission.	5
e. More efficient services that reduce waste in the system	★★★☆☆	No Feedback	3
f. Implementation of self-management goals	★☆☆☆☆	No Feedback	1
g. Shift in staff mindset in addressing patient needs	★★★★½	The project has provided our staff a real opportunity to get to know a whole new population of patients (pregnant women) and understand their needs prior to discharge. It raised awareness among the nursing staff about the discharge plan like check off lists, red-flags and future appointments. It put in a more formalized process.	5
h. New billable service development	★★★☆☆		5
Average			4

Figure 7: Negative Affects if the Project Activities Cease



Explanation of Figure 7: When asked who would be negatively affected if the DSRIP project activities were to cease – 100% of the respondents said that their organization, the patients/clients, the payors and the NY Medicaid program would be impacted. Whereas 50% of the respondents said that the local healthcare system and the care coordinators would be impacted.

Project Specific Feedback from Project Managers

Milestones: Success on key milestones of this project have been evaluated by Project Manager at CCN in an in-depth interview:

Table 7: Milestone Rating and Feedback

Milestone	Rating (10)	Success Factors (1.5)	Gaps	Score (10)
1. Develop standardized protocols for a Care Transitions Intervention Model with all participating hospitals, partnering with a home care service or other appropriate community agency.	★★★★★	1. Supportive cross functional team. It had people who had been using the Care Transitions model prior to the start of DSRIP. Project team was knowledgeable and representative of the nine counties and health systems. 2. Clinical governance committee and having people already familiar with transition of care helped ground things and made it easier to adopt things across the major health systems.	Of the 4 pillars of the project, three of them already existed: the discharge plans including medication management, the red flags, and the follow up appointment. The personal health record was new and there were a variety of opinions on whether or not it actually worked. Not everyone agreed that it needed to be a part of the discharge plan. In the beginning not all of them incorporated it. It was then decided that they only need three out of the four pillars.	10
2. Engage with the Medicaid Managed Care Organizations and Health Homes to develop transition of care protocols that will ensure appropriate post-discharge protocols are followed.	★★★★☆	Partners with experience already had contracts with MCOs and were engaged in pilots for care transitions. They helped write guidelines and trainings for Health Coaches. They built upon the gaps in the workflow.	MCOs and Health Homes were not directly involved in implementation. They were not engaging.	10
3. Ensure required social services participate in this project. – standardized list of social services	★★★★☆	Many organizations did help in the process of making the list. The council was good creating the list because they know	Long term implementation was not in mind when creating the list. Partners were not using it. It did not	10

not necessarily using it.		the area very well and made the list close to complete.	become a helpful tool. The goal was that the list would be created and used by the organizations in the area.	
4. Transition of care protocols will include early notification of planned discharges and the ability of the transition care manager to visit the patient in the hospital to develop the transition of care services.	★★★★★	1. Project team was critical to this because of their knowledge. There was one project champion at each hospital and CBO who trained other staff. 2. It took a while to get going and for health coaches to even be allowed in the hospital. The funding model really drove the change in the hospitals. They incentivized the warm hand off to the CBO for $60 for each hand off and $20 per patient to give out the personal health record. o Referrals to Medicaid health home, incentivized discharge summary (closing the loop), incentivized time spent with patients. o Health coach maintain a relationship with the patient even after discharge.	1. Low reimbursement initially. However, addressed this by increasing the reimbursement for spending time with the patient, showing them their personal health record etc. 2. Health coaches and hospital site had to build relationships. It took approximately two months for health coaches to have access and be trained.	10
5. Protocols will include care record transitions with timely updates provided to the members' providers, particularly primary care provider.	★★★★★	1. Champions and project team have understanding of core standards and knowledge of transition care.	Phase 1- Slow because there was no funding model.	10

		2. Workflow was there but the funding model was not until phase 2.		
6. Ensure that a 30-day transition of care period is established.	★★★★★	1 Educating champions and co-champions 2. Implementing Protocols and guidelines	30 days is helpful for most discharges but not for all patients. Not one size fits all. For instance, maternal patients have their next appointment in six weeks. Most post operations also fall outside 30 days. Heart patients have a 2 month follow up.	10
7. Use EHRs and other technical platforms to track all patients engaged in the project.	★★★★½	1. Standardize the templates. The first couple of columns had standard info such as name, dob, room etc. The standard look and organization helped make them more easily useable. 2. Introduced error tracking to make sure things are in the right format. This solved a lot of reporting errors.	1. Some CBO's did not have an EHR and had to learn. 2. Partners questioned if the data in the templates were necessary.	10
Average				**10**

Overall DSRIP Gaps in Care going forward

One remaining gap is taking into account the needs of different unique populations. For example, consider maternal discharges where needs fall outside of the 30-day window and where many patients have families already so that adds complexity. Additionally, consider the needs and complexities of the IDD population or other specific cohort needs, for example. Secondly, it was a challenge of the Health Coach to get the Medicaid member to do a home visit as many did not want visitors coming to their home. Incentivizing Medicaid member to go to meetings may lead to success.

Importance in improving SDoH outcomes (1.5)

Care Transition services is really critical in improving SDoH outcomes since in 30 days there are frequent touchpoints with patient by the Health Coach and they are connected to services/resources that help them stay on top of their health.

Table 8: Qualitative Measures

Measure	Rating	Anecdotal	Score
Provide timely care for members after an inpatient discharge.	★★★★½	Yes. However, not everyone could see their provider within that timeframe. From the Health Coach perspective, they were able to ask questions and having the Health Coach be a point of contact for the provider. Besides, not everyone was offered a Health Coach since they may have had access to other similar services such as health homes. 50% of the discharges did not qualify or accept these services.	6

Table 9: Opportunities for Improvement

Measure	Rating	Scope for Improvement	Score
Co-ordination between hospital staff and Health Coaches for providing support to patients after a hospital discharge	★★★☆☆	There is no bidirectional communication as the PCP does not share information with the Health Coach. Coordination while patient is in hospital is good but after discharge the hospital staff is not engaged with the patient.	4

Appendix

Detailed Scoring Matrix

Scoring Matrix		
Key Elements	**Description**	**Points**
Quantitative Analysis	**Data from Projects and Salient**	**25 points**
1. Regression Analysis	**Statistical Association between Key activities undertaken during specific projects and HEDIS measures**	**15 points**
a) Key HEDIS Measures	Statistical Association between 0 and 50%	8 points
b) Key HEDIS Measures	Statistical Association between 51% and 75%	12 points
c) Key HEDIS Measures	Statistical Association between 76% and 100%	15 points
d) Causal Effect	"Negative association of project activity with ER Visits (2 pts) Negative association of project activity with Hospitalizations (2 pts) Positive association between project activity and Primary Care (2pts)"	**6 Points**
e) Cost Effectiveness Analysis	Costs averted due to reduction in ED visits (1.3 pts) Costs averted due to reduction in Hospitalizations (1.3pts) Costs spent due to increase in PC Visits (1.3pts)	**4 Points**
Qualitative Analysis	**Assessments conducted with various stakeholders involved in Speed and Scale Projects**	**75 Points**
2. Project Specific Feedback from Partners	**Interviews conducted by RMS with select partners for speed and scale projects**	**25 points**
a) Patient Outcomes	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point
b) Cost of Care	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point
c) Lasting Partnerships	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point
d) Workforce Development	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point
e) System Transformation	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point
3. Project Specific Feedback from Project Managers	**Interviews conducted by Population Health Team with project managers for speed and scale projects**	**25 points**
a) Milestones Ratings	Scale of 1 to 5 - 4 and above	**10 points**
	Scale of 1 to 5 - score of 3	7 points

	Scale of 1 to 5 - score of 2 or 1	2 point
b) Successes specific to Milestones	Qualitative statements	**1.5 points**
c) Gaps specific to Milestones	Qualitative statements	**None**
d) Overall DSRIP Gaps in care going forward	Qualitative statements	**None**
e) Importance in improving SDoH outcomes	Qualitative statements	**1.5 points**
f) Qualitative Questions	Scale of 1 to 5 - 4 and above	**6 points**
	Scale of 1 to 5 - score of 3	4 points
	Scale of 1 to 5 - score of 2 or 1	2 point
g) Opportunities for Improvement	Scale of 1 to 5 - 4 and above	**6 points**
	Scale of 1 to 5 - score of 3	4 points
	Scale of 1 to 5 - score of 2 or 1	2 point
4. Member Panel Feedback from Patients	**Survey conducted by RMS with Member Panel regarding Speed and Scale Project**	**15 points**
a) Were asked about their health during visit	> 90% responded yes	**5 points**
	Between 75 to 89%	3 points
	Between 60 to 74%	1 point
b) Positive Experience	> 90% responded yes	**5 points**
	Between 75 to 89%	3 points
	Between 60 to 74%	1 point
c) Patient believes services provided were crucial for their well-being	> 90% responded yes	**5 points**
	Between 75 to 89%	3 points
	Between 60 to 74%	1 point
5. Regional Performing Units Feedback overall DSRIP activities	**Survey conducted by Population Health Team during RPU Meetings in May**	**10 points**
a) Workforce Development	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point
b) System Transformation	Scale of 1 to 5 - 4 and above	**5 points**
	Scale of 1 to 5 - score of 3	3 points
	Scale of 1 to 5 - score of 2 or 1	1 point

Partner Vignette

Mothers and Babies Perinatal Network (MBPN) has partnered with UHS and Lourdes to provide Health Coach services to the maternal and infant populations locally in Broome County. The UHS/MBPN partnership has been very successful for the patients and for both partners and was highlighted at the September 2019 Stakeholders meeting.

Please refer to video *https://www.youtube.com/watch?v=c4fTXeblp6I&t=19s*

Implementing this project has made a tremendous impact on the patient population of which Mothers and Babies Perinatal Network provides services to as well as for the MBPN organization. This model has been shared across NYS with the other Perinatal Networks as a successful collaboration model.

Definitions – Statistical Associations

Direct NT: Direct Near Term - Project has a specific component (paid activity specifically) that affects the numerator of the measure in the near term (immediate impact; activity is incentivized).

Direct LT: Direct Long Term - Project has a component which encourages activities which affect the numerator of the measure. Activities may not have an immediate impact, but could encourage different future choices by members.

Mixed Direct: Project has a component which encourages activities which affect the numerator of the measure in general. Activity may not be paid; thus, although the project supports those activities, they are not specifically incentivized.

Quantitative Findings – Model Used

Regression Analysis Basics:

- The regression equation describes the relationship between the dependent variable (y) and the independent variable (x).

$$y=bx+a$$

Example: Anti-Dep Rx Fill = b_1(3ai BH screen) +b_i(Control $vars_i$)+ a

- The intercept, or "a," is the value of y (dependent variable) if the value of x (independent variable) is zero, and is referred to as the 'constant.'
- The regression results report the coefficient b that represents how a unit increase in x affect the likelihood of y, holding all other factors constant
- P value is also reported in the regression results. It shows whether the coefficient has statistically significant impact on the dependent variable or not. If the p value is 0.05, we are 95% confident that the independent variable has some effect on the dependent variable.

Model Used

Logistic regression

- Assumption: dependent variable is dichotomous and binary; in other words, coded as 0 and +1.
- We use the logit model that displays the odds ratio obtained by running the regression.
- The odds ratio is a way of comparing whether the probability of a certain event is the same for two groups.
- An odds ratio of 1 implies that the event is equally likely in both groups. An odds ratio greater than one implies that the event is more likely in the first group. An odds ratio less than one implies that the event is less likely in the first group.