Workforce Gap Analysis Report for Albany Medical Center Hospital PPS

Delivery System Reform Incentive Payment Program

Workforce Strategy

Issued: 12 September 2016

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Executive Summary

The overall goal of the Delivery System Reform Incentive Payment ("DSRIP") program is to reduce avoidable hospitalizations and ED visits by the Medicaid population in New York State ("NYS") by 25% through the transformation and redesign of the existing health care system.

As part of Albany Medical Center Hospital Performing Provider System's ("AMCH PPS" or "the PPS") participation in the DSRIP program and completion of certain Workforce Strategy Milestones, Albany Medical Center Hospital ("Albany Medical") engaged BDO Consulting ("BDO") on behalf of the AMCH PPS, as its workforce vendor, to assist in the development of a detailed gap analysis between the current workforce state and the projected target workforce state. The gap analysis identifies gaps in workforce resources and informs the projection of workforce impacts as a result of system transformation and project implementation related to the DSRIP program.

Collaboration took place to create the gap analysis through several in person working sessions and conference calls with representation from the PPS Leads. Additionally, AMCH PPS stakeholders, including the DSRIP Workforce Coordinating Council Members, provided significant input regarding project implementation strategies to inform workforce planning. PPS stakeholders identified the workforce that may be impacted and identified staffing needs for the DSRIP projects to inform the development of the PPS's gap analysis.

As detailed within this report, the gap analysis summarizes reported findings from the completed current workforce state assessment and the projected workforce impacts as part of the target workforce state, leveraging these findings to identify possible gaps between the PSS's current and target workforce states.

AMCH PPS's gap analysis will be leveraged to inform the development and implementation of the workforce transition roadmap to assist the PPS in reaching its target workforce state by the end of the five year program. The gap analysis will also assist the PPS in identifying challenges in the achievement and management of DSRIP workforce impacts including redeployment, retraining, and new hire needs to effectively implement the selected DSRIP projects.

Summary Gap Analysis Findings

Following a five-year implementation of the DSRIP program, due to the combined impact of the program as well as non-DSRIP related impacts, the AMCH PPS workforce is projected to experience potential impacts in demand for health care providers including primary care providers ("PCPs"), nursing positions, clinical and administrative support, and care management/care coordination.

Based on the current workforce state reported by the PPS Partners, the PPS's existing moderate vacancies amongst nursing and behavioral health positions will normalize some of the projected workforce turnover. In specific instances where high workforce vacancies are reported, the impacts of DSRIP projects could either potentially minimize or further impact gaps that currently exist within the PPS's workforce.

Within the primary care / outpatient settings, the PPS's workforce gap is due to the anticipated increase in demand for PCPs as patients are redirected to seek care from providers outside of the ED setting due to the combined impacts of the ED Care Triage Project, Medical Village project, Patient Activation project, and increased referrals through the co-location of primary care and behavioral health services. Further, the growth in overall demand for physicians in NYS is forecasted to outpace growth in the current supply of physicians. Given this workforce supply factor combined with the anticipated increase in demand for PCPs, the PCP gap in the PPS's workforce is likely to be impacted over time as project goals are realized.

Within the ED / inpatient settings, the PPS is projected to experience a slight decrease in demand for ED physicians, with the greatest impact being a decrease in demand for nursing positions including RNs, NPs, and nurse aides/assistants as DSRIP project impacts are potentially realized and patients seek care outside of the ED and inpatient settings. However, the projected decrease in demand for ED / inpatient workforce may be partially offset by factors unrelated to the DSRIP program such as changing demographics and expanded insurance coverage. Additionally, given the vacancies reported across the AMCH PPS for nursing positions, the projected reduction in demand for nursing is also likely to be mitigated by the existing reported gaps within the AMCH PPS workforce.

As a result of anticipated project impacts for the co-location of primary care and behavioral health services and for Crisis Stabilization services, an increase in demand for behavioral health positions is projected, specifically for licensed clinical social workers ("LCSW") and administrative support. Although there are no currently identified gaps in workforce for these positions, with less than 5.0% vacancy rate reported, the PPS may need to address future workforce gaps as project goals are realized. Further, statewide shortages in the behavioral health workforce may impact PPS provider recruitment efforts.

Additionally, with the anticipated increase in community-based health coordinators and navigators as a result of the care transition projects, demand for care coordinators, asthma educators, CVD educators, and peer support workers is projected to increase. Based on the

current workforce state data, there is an existing vacancy rate of over 20.0% reported for community health workers and peer support workers, which is higher than the average reported vacancy rate for all job titles across the PPS. Given the anticipated increase in utilization of patient navigation services and the overall increase in demand for care management services throughout NYS, the existing gap for care management/care coordination staff is likely to expand further and potentially result in difficulties in recruitment or retraining for such positions.

I. Background & Purpose

A. Overview of the DSRIP Program

The goal of the DSRIP program is to encourage health care system redesign and promote collaboration across providers and community-level partners to reduce avoidable inpatient admissions and emergency room visits by 25% over the next five years for the Medicaid population in NYS. In line with this goal, the transformation of the existing health care system and implementation of the chosen DSRIP projects will have implications on the PPS's workforce needs.

The DSRIP program, with a total of 25 performing provider systems ("PPS") across NYS, is collaborative in nature as each of the PPSs have developed a robust partnership network comprised of health care providers and community-based organizations within the PPS's designated service areas. The purpose of this collaborative program is to create partnerships and integrated care delivery networks to implement the PPS's selected DSRIP projects and ultimately improve delivery and access to health care in more appropriate settings for the Medicaid population. Further, as a component of the program, the NYS Department of Health ("DOH") has positioned stakeholder and community engagement as a primary driver for addressing health issues within the PPSs' service areas through collaboration with community-based organizations ("CBOs") and other community-based resources. The DSRIP program is designed to leverage CBOs as care access points for the Medicaid and uninsured populations as they have the capabilities, resources, and community relationships in place to address many of the cultural and social impacts that prevent patients from accessing more appropriate care settings.

While the program's overall goal is to reduce avoidable hospital inpatient use and potentially preventable emergency department visits ("PPVs") by 25%, the individual DSRIP projects will focus on a number of positive health outcomes around systems transformation, clinical improvement and population health, including the creation of integrated delivery systems, the co-location of behavioral health and primary care, and the self-management of chronic conditions such as cardiovascular disease and asthma.

As a result of the program and its overall goal, the workforce within the PPS will be impacted as the provision of care shifts from inpatient to outpatient settings with a focus on more

effective case management and an increasing role for community-based providers. It is anticipated that the workforce will be impacted by emerging DSRIP-related job titles and positions, such as patient navigators, that will create a need for workforce new hires, redeployment, and retraining.

B. Overview of the Performing Provider System

The AMCH PPS is a partner network of health care providers across multiple care delivery settings, involving a mix of health occupations, medical specialties, and support staff, working in concert to create wellness in its upstate New York service area. The PPS's Lead Entity, Albany Medical Center Hospital ("Albany Medical Center"), serves as the overall driver and coordinator of the PPS's DSRIP program and projects.

The AMCH PPS spans a five county catchment area: Albany, Columbia, Greene, Saratoga, and Warren. Three hospitals are in the PPS: Albany Medical Center Hospital, Columbia Memorial Hospital and Saratoga Hospital. AMCH PPS has partnered with more than 175 organizations across many different provider types including primary care, behavioral health, community based organizations ("CBOs"), health home and care management, local government units, hospices, hospitals, non-PCP practitioners, pharmacies, skilled nursing facilities ("SNFs") and nursing homes.

C. Purpose of the Workforce Gap Analysis

The purpose of conducting a workforce gap analysis, as part of the DSRIP Workforce Strategy Milestones, is to identify and understand the gaps that exist within the AMCH PPS workforce by leveraging findings from the current workforce state and the projected target workforce state to inform the PPS's overall workforce strategy throughout the five-year program.

AMCH engaged BDO on behalf of the AMCH PPS to identify workforce gaps that currently exist as well as identify workforce needs to inform the PPS's workforce strategy for achieving the target workforce state. The PPS's workforce gap analysis was created in collaboration with the PPS's Workforce Governance Body and included input from providers within the PPS's partner network.

As defined within this report, AMCH PPS's gap analysis summarizes the current workforce state assessment and the projected target workforce state and then identifies gaps between the current and target workforce states. The analysis will be used by the PPS to understand and forecast workforce needs in terms of redeployment, retraining and new hire needs. It takes into consideration the needs of the current state of the workforce as well as the demand for health care services and providers within the PPS's network as a result of the DSRIP program and general population growth over the next five years.

AMCH PPS's gap analysis will then be leveraged to inform the development and implementation of the workforce transition roadmap which will be used to assist the PPS in reaching its target workforce state by the end of the program.

II. Current Workforce State Overview

A. Current Workforce State Assessment Approach

AMCH PPS engaged Iroquois Healthcare Association ("Iroquois") to conduct a compensation and benefits survey of the AMCH PPS provider organizations to meet the required DSRIP workforce milestone.

Iroquois sent the survey to 175 organizations, of which 65 of those organizations participated, representing approximately 26,000 full time and part time employees across all job titles. 16 organizations reported having Collective Bargaining Agreements (CBAs) with labor unions, representing approximately 3,000 full and part time employees. The survey requested compensation and benefits data for 65 job titles across 10 different organization types, shown in *Exhibit 1* and *2* below.

Exhibit 1: Reportable Job Titles

Reportable Job Titles (65)	
Bachelor's Social Work (BSW) (2060)	Nutritionists / Dieticians (7005)
Care Manager / Coordinator (2005)	Occupational Therapists (7010)
Care or Patient Navigator (2010)	Occupational Therapy Assistants / Aides (7015)
Certified Asthma Educators (9005)	Office Clerks (9550)
Certified Diabetes Educators (9010)	Other Mental Health / Substance Abuse Titles Requiring Certification (1020)
Certified Home Health Aides (6005)	Other Physician Specialties (except Psychiatrists) (5010)
Clinical Laboratory Technologists and Technicians (3005)	Other Registered Nurses (Utilization Review, Staff Development, etc.) (4020)
Coders / Billers (9505)	Patient Care Technicians (3020)
Community Health Worker (2030)	Patient Service Representatives (9555)
Computer Hardware Maintenance (8005)	Peer Support Worker (2035)
Computer Technical Support (8010)	Personal Care Aides (6010)
Dietary/Food Service Managers (9510)	Pharmacists (7020)
Executive Staff (CEOs and General / Operations Managers) (9515)	Pharmacy Technicians (7025)
Financial Services Representatives (9520)	Physical Therapists (7030)
Financial Staff (Managers and Clerks) (9525)	Physical Therpay Assistants / Aides (7035)
Health Coach (9015)	Physician Assistants in Other Specialties (5020)
Health Educators (9020)	Physician Assistants in Primary Care (5015)
Health Information Technology Managers (8015)	Primary Care Physicians (5005)
Housekeeping Managers (9530)	Psychiatric Aides / Technicians (1025)
Human Resources Staff (Managers and Human Resource Assistants) (9535)	Psychiatric Nurse Practitioners (1015)
Janitors and Cleaners (9540)	Psychiatrists (1005)
Licensed Clinical Social Workers (LCSW) (2045)	Psychologists (1010)
Licensed Master's Social Workers (LMSW) (2050)	Respiratory Therapists (7040)
Licensed Practical Nurse (LPNs) (4035)	RN and NP Care Coordinators/Case Managers/Care Transitions (2015)
LPN Care Coordinators/Case Managers (2020)	Secretaries and Administrative Assistants (9560)
Master's Social Worker (MSW) (2055)	Social and Human Service Assistants (2040)
Medical Assistants (3010)	Social Worker Care Coordinators/Case Managers/Care Transisition (2025)
Medical Interpreters (9545)	Software Programmers and Developers (8020)
Nurse Managers / Supervisors (4030)	Speech Language Pathologists (7045)
Nurse Midwives (4025)	Staff Registered Nurses (4015)
Nurse Practitioners in Other Specialties (except Psychiatric NPs) (4010)	Substance Abuse and Behavioral Disorder Counselors (1030)
Nurse Practitioners in Primary Care (4005)	Transportation (9565)
Nursing Aides / Assistants (3015)	

Exhibit 2: Organization Types

Organization Types (10)
Hospital Inpatient
Hospital Outpatient Clinics (Article 28)
Diagnostic and Treatment Centers (Article 28)
Clinics (OPWDD) (Article 16)
Outpatient Behavioral Health (Article 31 & Article 32)
Home Care Agency
Non-licensed Community Based Organization (CBO)
Nursing Home/SNF
Private Provider Practice
Other Type (select only if no other types apply)

B. Current Workforce State Survey Findings

The number of employees and position vacancies are displayed for most job titles across the various organization types. The purpose of this data is to allow the AMCH PPS to develop baseline data for DSRIP workforce milestones such as the workforce staff impact analysis (redeployment / retraining) and the workforce new hire analysis. The survey data is also used to inform other workforce milestones that include defining the target workforce state, performing a workforce gap analysis, developing the workforce transition roadmap, and developing a training strategy.

In addition to AMCH's data, a second aggregate report includes comprehensive data collected from providers in the Alliance for Better Health Care PPS, the Bassett Medical Center PPS, the Care Compass Network PPS, the Central New York Care Collaborative PPS, and the North Country Initiative PPS ("Aggregated PPSs").

Although participating organizations reported employing close to 26,000 full and part-time employees overall, only 17,215 employees were reported under the 65 job codes included in the survey. Along with 1,142 total reported vacancies, the total number of budgeted positions within the reported 65 job titles across the PPS was 18,357. This is important in terms of understanding the values within the summary tables, as well as the broader consideration that there are nearly 8,000 healthcare workers from the respondent organizations who are not accounted for within the survey results because their titles do not fall into the 65 job codes listed.

The data in the analysis is self-reported by the 65 respondent organizations and, thus, may be subject to individual interpretation. For example, while directions were provided to report whole numbers for individuals employed under a particular job title, some organizations reported FTE values, causing some fractions to appear for number of employees and number of vacancies. In our own analysis, we rounded these fractions to the nearest integer. It is not anticipated that this adjustment has any meaningful impact on the data, but is worth illuminating prior to the data's review.

Organizations reported a 7.54% average vacancy rate (6.63% total vacancy rate) for reported positions (exclusive to only 65 reported job titles), with a 5.2% average vacancy rate for all full-time positions (not exclusive to 65 reported job titles) and a 9.7% average vacancy rate for all part-time positions (also not exclusive to 65 reported job titles).

Exhibit 3 presents the job titles with above average vacancy rates. With the exception of nursing aides/assistants and personal care aides, the vacancy rate observed for AMCH PPS was above the average vacancy rate reported for the Aggregated PPSs.

By identifying and examining positions with above-average vacancy rates in *Exhibit 3* below, the PPS will be able to focus its efforts on addressing recruitment, training, retraining, and redeployment strategies to meet the needs of the community, to support DSRIP project implementation, and to develop a more satisfied and more stable workforce. It will also be important information to assist with employee retention issues.

Exhibit 3: Job Titles with Above-Average Vacancy Rates (>7.54%)

Job Title	Number of FTEs	Number of Vacancies	Vacancy Rate
Psychiatric Nurse Practitioners (1015)	19	6	31.9%
LPN Care Coordinators/Case Managers (2020)	27	8	29.6%
Community Health Worker (2030)	30	7	23.3%
RN and NP Care Coordinators/Case Managers/Care Transitions (2015)	100	23	23.0%
Peer Support Worker (2035)	122	24	19.7%
Psychiatrists (1005)	71	11	14.8%
Coders / Billers (9505)	213	31	14.6%
Psychologists (1010)	45	6	13.3%
Psychiatric Aides / Technicians (1025)	235	29	12.3%
Nurse Practitioners in Other Specialties (except Psychiatric NPs) (4010)	152	19	12.2%
Health Educators (9020)	60	7	11.7%
Dietary/Food Service Managers (9510)	30	3	10.0%
Physician Assistants in Primary Care (5015)	62	6	9.7%
Nursing Aides / Assistants (3015)	1,263	121	9.6%
Clinical Laboratory Technologists and Technicians (3005)	253	24	9.4%
Social Worker Care Coordinators/Case Managers/Care Transition (2025)	120	11	9.2%
Personal Care Aides (6010)	2,246	186	8.3%
Physical Therapists (7030)	110	9	8.2%

Another way to view and prioritize vacancy information is by organization type. This illustrates which organization types do not employ certain job titles and where the highest vacancy rates are in those organization types who do employ workers under those titles. This can be misleading if the sample size is small, causing vacancy rates to be inflated, which is why the number of organizations, the number of FTEs, and the number of vacancies are included in *Exhibit 4*, below.

Exhibit 4: Five Job Titles with Highest Average Vacancy Rate, Including Vacancy Rates by Organization Type

Psychiatric Nurse Practitioners (1015)	# of Orgs	# FTEs	# Vacancies	Vacancy Rate
Clinics (OPWDD) (Article 16)	0	0	0	
Diagnostic and Treatment Centers (Article 28)	0	0	0	
Home Care Agency	0	0	0	
Hospital Inpatient	3	8	0	0.00%
Hospital Outpatient Clinics (Article 28)	2	4	3	75.00%
Non-licensed Community Based Organization (CBO)	0	0	0	
Nursing Home/SNF	0	0	0	
Other Type (select only if no other types apply)	1	1	1	100.00%
Outpatient Behavioral Health (Article 31 & Article 32)	3	4	2	50.00%
Private Provider Practice	1	1.8	0	0.00%
Totals	10	18.8	6	31.91%

LPN Care Coordinators/Case Managers (2020)	# of Orgs	# FTEs	# Vacancies	Vacancy Rate
Clinics (OPWDD) (Article 16)	0	0	0	
Diagnostic and Treatment Centers (Article 28)	0	0	0	
Home Care Agency	0	0	0	
Hospital Inpatient	0	0	0	
Hospital Outpatient Clinics (Article 28)	0	0	0	
Non-licensed Community Based Organization (CBO)	0	0	0	
Nursing Home/SNF	2	26	8	30.77%
Other Type (select only if no other types apply)	1	1	0	0.00%
Outpatient Behavioral Health (Article 31 & Article 32)	0	0	0	
Private Provider Practice	0	0	0	
Totals	3	27	8	29.63%

Community Health Worker (2030)	# of Orgs	# FTEs	# Vacancies	Vacancy Rate
Clinics (OPWDD) (Article 16)	1	8	1	12.50%
Diagnostic and Treatment Centers (Article 28)	1	1	0	0.00%
Home Care Agency	0	0	0	
Hospital Inpatient	0	0	0	
Hospital Outpatient Clinics (Article 28)	1	8	0	0.00%
Non-licensed Community Based Organization (CBO)	3	9	6	66.67%
Nursing Home/SNF	1	1	0	0.00%
Other Type (select only if no other types apply)	1	3	0	0.00%
Outpatient Behavioral Health (Article 31 & Article 32)	0	0	0	
Private Provider Practice	0	0	0	
Totals	8	30	7	23.33%

RN and NP Care Coordinators/Case Managers/Care Transitions (2015)	# of Orgs	# FTEs	# Vacancies	Vacancy Rate
Clinics (OPWDD) (Article 16)	0	0	0	
Diagnostic and Treatment Centers (Article 28)	1	1	1	100.00%
Home Care Agency	2	7	5	71.43%
Hospital Inpatient	1	42	2	4.76%
Hospital Outpatient Clinics (Article 28)	0	0	0	
Non-licensed Community Based Organization (CBO)	1	2	0	0.00%
Nursing Home/SNF	3	32	11	34.38%
Other Type (select only if no other types apply)	3	4	0	0.00%
Outpatient Behavioral Health (Article 31 & Article 32)	2	2	0	0.00%
Private Provider Practice	2	10	4	40.00%
Totals	15	100	23	23.00%

Peer Support Worker (2035)	# of Orgs	# FTEs	# Vacancies	Vacancy Rate
Clinics (OPWDD) (Article 16)	1	15	0	0.00%
Diagnostic and Treatment Centers (Article 28)	1	4	2	50.00%
Home Care Agency	0	0	0	
Hospital Inpatient	1	1	0	0.00%
Hospital Outpatient Clinics (Article 28)	2	3	2	66.67%
Non-licensed Community Based Organization (CBO)	6	81	18	22.22%
Nursing Home/SNF	0	0	0	
Other Type (select only if no other types apply)	1	13	1	7.14%
Outpatient Behavioral Health (Article 31 & Article 32)	3	4	1	25.00%
Private Provider Practice	0	0	0	
Totals	15	121	24	19.83%

Reviewing overall vacancy rates by organization type (*Exhibit 5*) can also help to direct workforce efforts toward those entities with above-average vacancy rates.

Exhibit 5: Average Vacancy Rates by Organization Type

Organization Type	# FTEs	# Vacancies	Avg. Vacancy Rate
All Facilities	17,214.5	1,142.1	7.54%
Clinics (OPWDD) (Article 16)	724	63	8.70%
Diagnostic and Treatment Centers (Article 28)	174.8	15	8.58%
Home Care Agency	3117	179	5.74%
Hospital Inpatient	5941	395.7	6.66%
Hospital Outpatient Clinics (Article 28)	989	78	7.89%
Non-licensed Community Based Organization (CBO)	1,139.5	109	9.57%
Nursing Home/SNF	1039	115.5	11.12%
Other Type (select only if no other types apply)	856	62.5	7.30%
Outpatient Behavioral Health (Article 31 & Article 32)	425.3	27	6.35%
Private Provider Practice	2,808.9	97.4	3.47%

One could be tempted to view those positions with the highest whole number of vacancies as an area of high need. Although there may be large numbers of vacant positions within a job title, this is typically in direct relationship to the high number of FTEs reported under each job title. As shown below in *Exhibit 6*, there are only three job titles with more than 100 vacancies. These same three job titles have more than 1,000 FTEs reported. Though the total number of vacancies is high, the vacancy rate for these three job titles is within 2.1 percentage points of the average rate. It is also true that the seven positions with the lowest average vacancy rate (0%) are within the 15 titles reporting the smallest numbers of FTEs.

The vacancy rate reported by the AMCH PPS organizations for staff RNs was in line with the reported rate across the Aggregated PPSs. The AMCH PPS reported a slightly lower vacancy rate for personal care aides and nursing aides/assistants than the Aggregated PPS data.

Exhibit 6: Job Titles with Number of Vacancies >100

Job Type	Number of FTEs	Number of Vacancies	Vacancy Rate
Staff Registered Nurses (4015)	2,866	196	6.8%
Personal Care Aides (6010)	2,246	186	8.3%
Nursing Aides / Assistants (3015)	1,263	121	9.6%

Viewing vacancies by job type can be helpful for the Target State Workforce and can assist with the Transition Roadmap. As an example, the Target State Workforce Report predicts a PPS-wide reduction of approximately 94 Registered Nurses over the lifetime of DSRIP, based upon the impacts of DSRIP and changes created by demographic trends and other healthcare initiatives. While this data may appear to suggest lay-offs for RNs, consideration of the current 250 vacancies for Registered Nurses (*Exhibit 7*) across the PPS might suggest opportunities for redeployment to facilities and roles that support healthcare system transformation.

Exhibit 7: Demographics for All Positions within Job Type "Registered Nurses"

Job Type	Number of FTEs	Number of Vacancies	Vacancy Rate
Registered Nurses	3,708	250	6.74%
Care Manager / Coordinator (2005)	211	9	4.3%
Care or Patient Navigator (2010)	21	1	4.8%
RN and NP Care Coordinators/Case Managers/Care Transitions (2015)	100	23	23.0%
Staff Registered Nurses (4015)	2,866	196	6.8%
Other Registered Nurses (Utilization Review, Staff Development, etc.) (4020)	148	6	4.1%
Nurse Midwives (4025)	12	0	0.0%
Nurse Managers / Supervisors (4030)	344	15	4.4%

In order to create a successful Transition Roadmap and Training Strategy, and to create meaningful projections related to new hire and redeployment impact, it is important to identify those job types (and related titles) impacted by the Target State Workforce

projections. This will assist in identifying areas in need of a redeployment strategy, which could include retraining. Within the project-specific training needs assessments being conducted as part of the Training Strategy design, project teams and subcommittees are asked to specify which job types they feel will need training. Using the job type summary information will assist us in estimating the total number of employees who may need training on a particular topic, and thus the most affordable and appropriate delivery method. Please see Appendix A for demographics by job type for all titles (some titles may be duplicated between categories).

While there are a number of ways in which the data can be viewed to identify areas of high need within the workforce, prioritizing workforce efforts based on the urgency/ order of project implementation or the index score/ value of the project is perhaps the best strategy. For example, if a given project intends to use community health workers to satisfy project goals, addressing the 23.3% vacancy rate through the development of recruitment, training, retraining, and redeployment strategies would be vital to the success of the project. Identifying also that there is only one reported certified asthma educator across the PPS may affirm the PPS' pursuit of providing training opportunities for eligible employees in key practices to support the efforts of project 3.d.iii (Implementation of Evidence-Based Medicine Guidelines for Asthma Management). Further, the PPS' Cultural Competency and Health Literacy Committee may benefit from understanding that only two organizations reported having 33 medical interpreters across the PPS, and 32 of those are employed by SNFs.

The AMCH PPS will continue to analyze the compensation and benefits survey data to inform key elements of the PPS's workforce strategy, to support project implementation and ultimately to drive system transformation. Several other interdependent work streams will influence decision making regarding workforce. These include financial sustainability, affordability, selected unknowns including potential changes in technology that could influence staffing needs, competition for selected positions and other considerations. The AMCH PPS recognizes that health care is driven by people. Staffing remains the single most important resource needed to transform the regional health care system. AMCH PPS's Workforce Coordinating Council will continue to provide expert advice and guidance regarding the best ways to develop both today's and tomorrow's staff to provide compassionate, high quality care for all.

C. Current Workforce State Survey Summary

The data reported throughout Section II provides an overview of the AMCH PPS's current workforce state as reported by the PPS partners that participated in the survey, and will be leveraged by the AMCH PPS to facilitate workforce planning throughout the DSRIP program. As previously described, the PPS's total reported workforce state includes a headcount of approximately 26,000 individuals, including 17,215 employees reported under the job codes

included in the survey. Based on the data reported, nursing positions are the most represented job within the PPS, followed by administrative staff.

AMCH PPS organizations also reported on FTE vacancies within the PPS. Based on the data provided, the highest number of vacancies were reported for staff RNs (196), personal care aides (186 FTEs), and nursing Aides/ assistants (121 FTEs), while the highest percentage of vacancies were reported for psychiatric nurse practitioners (31.9%) and LPN care coordinators/care managers (29.6%).

The AMCH PPS also collected additional workforce data including CBA status to further inform the workforce planning efforts throughout the DSRIP program.

D. Other Factors Impacting the AMCH PPS Workforce

This section of the current workforce state report aims to provide further insights around Participants' workforce planning in addition to the compensation and benefits survey findings that may impact workforce planning throughout the five year program.

Cultural competency of existing workforce

In September 2015 the AMCH PPS's Project Management Office disseminated a cultural competency and health literacy survey. The intent of the survey was to identify the current state of cultural competency and health literacy within each organization and to identify where gaps exist.

- The survey results showed that a high proportion of organizations offer services in other languages although only 44% of organizations' mission statements include the need for culturally competent and health literate service delivery.
- Only 44% of organizations reported addressing cultural competencies in the organizations' strategic plan, and 19% of organizations reported having no strategic plan.
- 61% of Community Advisory Committees reported having a similar structure as the population and community it serves.
- Only 43% of organizations request patient feedback in relation to staff members' cultural competency.
- Only 33% of organizations reported having a team in place that is responsible for coordinating cultural competency activities.
- Only 31% of organizations have funds allocated for cultural competence activities.
- Only 38% of organizations reported having training activities to improve staff competence on linguistic issues.
- Although 85% of organizations reported using appropriate language services, the survey did highlight areas for improvement within the PPS in relation to linguistic services. The results showed that almost half of the organizations do not use certified or trained medical interpreters or sign language interpreters. Less than 40% of organizations have established a policy to minimize the use of family members to interpret.

The results of the survey allowed the AMCH PPS to highlight areas where the PPS can improve cultural and linguistic competence of all organizations and specifically address workforce needs.

Current/existing resource shortages

A community needs assessment ("CNA") was compiled in December 2014 covering the following counties: Albany, Schenectady, Rensselaer, Saratoga, Fulton, Montgomery, Warren, Greene, Dutchess, Ulster and Columbia. A second CNA was compiled in early 2016 covering the following counties: Albany, Rensselaer, Saratoga, Schenectady, Greene, and Columbia ("the Capital Region").

The AMCH PPS has highlighted a number of workforce shortages / weaknesses through its CNAs that may be addressed through the planning and implementation of DSRIP:

- The Capital Region exhibited higher mortality rates than New York State. Heart disease, cancer, chronic lower respiratory disease (CLRD), and stroke being the major causes of premature death.
- Obesity and its related diseases continue to be health issues in the Capital Region. Almost 28% of adult residents were considered obese.
- Diabetes mortality and short-term complication hospitalizations were higher in the Capital Region than Rest of State.
- Adult asthma prevalence, as well as asthma ED visits and hospitalization rates were also higher in the Capital Region.
- Mental Health indicators such as "poor mental health days", suicide mortality, and self-inflicted injury hospitalization rates were higher in the Capital Region compared to Rest of State.
- Substance abuse indicators also show there is a growing problem in the Capital Region. Substance abuse (any diagnosis) ED visit and hospitalization rates were higher than Rest of State, with increasing trends.
- The rates for Medicaid members using primary care facilities are lower than the benchmarks across the 10 counties and Medicaid members cannot find primary care services at times or locations they need.
- There is a disparity of services between counties. For example, Greene County does not have any primary care providers who are PCMH certified.
- There is a lack of mental health providers designated as substance abuse providers and counselors. There is also a disparity of locations for mental health providers, with rural areas having fewer providers of care.
- The CNA highlighted a lack of urgent care, FQHC's and PCMH providers in high need neighborhoods.

In addition to these needs, the AMCH PPS current state survey participants reported over 1,600 vacancies across all job titles, equating to a 7.54% average vacancy rate.

III. Target Workforce State Assessment Overview

A. Target Workforce State Assessment Approach

The Target Workforce State report identifies AMCH PPS's projected workforce needs by the end of the DSRIP program in 2020. Findings and project impacts from the report are summarized within this section for each individual DSRIP project, and any existing workforce gaps between the current and future workforce state are described in the Gap Analysis Report.

Similar to the current workforce assessment, development of AMCH's target workforce state was conducted by key AMCH PPS stakeholders, including DSRIP project managers and clinical leads, who provided significant input into the DSRIP project impacts and assumptions made to inform the projection of AMCH PPS's target workforce state. Information from external databases including local, state and national surveys; medical claims databases; published literature; and IHS's Healthcare Demand Microsimulation Model ("HDMM") were leveraged to further inform the target workforce state projections. An additional important stakeholder that assisted in the development of this report is AMCH PPS's Workforce Coordinating Council, comprised of representative organizations throughout the PPS.

AMCH PPS plans to implement eleven DSRIP projects to inform the development of an Integrated Delivery System ("IDS") through the coordination of high quality primary, specialty, behavioral, long-term and post-acute care services. The PPS-sponsored Community Needs Assessment ("CNA") was used to inform the selection of the eleven projects which includes five system transformation projects ("Domain 2 Projects"), four clinical improvement projects ("Domain 3 Projects"), and two population-wide prevention projects ("Domain 4 Projects").

In modeling and projecting the estimated workforce impacts of the DSRIP projects on AMCH PPS's workforce, the following primary research questions were considered:

1. How many patients will be affected by this intervention?
2. What are the current healthcare utilization patterns of affected patients, and how will this initiative change care utilization patterns?
3. What mix of providers will be used to implement the intervention and meet future patient demand for services?
4. Will the project, as designed, materially impact the region's healthcare delivery workforce?

B. Target Workforce State Summary Findings

As the DSRIP program progresses over the five years, the demand for health care workforce within AMCH PPS's network will continue to evolve as DSRIP projects are implemented, impacts of those projects are realized, and as external factors outside of the DSRIP program

evolve. As a result, it is worth noting that although this analysis was conducted using best efforts and project implementation assumptions to model workforce impacts over the DSRIP program, the target workforce state described within this report is a projection of the target workforce state to inform AMCH PPS's workforce planning, and workforce needs will be continually reevaluated as project impacts are realized overtime.

Exhibit 8 below summarizes the PPS's estimated target workforce state staffing impacts by 2020 taking into account the anticipated results of the DSRIP program as well as anticipated demographic and health care coverage changes independent of DSRIP across the AMCH PPS's care settings and key job categories. In some cases non-DSRIP impacts offset or moderate the effects of DSRIP while in other cases they magnify DSRIP workforce impacts. Notable projected impacts include:

- By 2020, the combined impacts of a growing and aging population, expanded medical insurance coverage under ACA, and DSRIP implementation will increase demand for health providers modeled by approximately 272 FTEs across several provider types including primary care providers, specialists, behavioral health providers, substance use providers, nursing, patient navigators, care coordinators, social workers, pharmacists, as well as front end support staff:
    - Independent of DSRIP, workforce demand is projected to grow by approximately 94 FTEs.
    - The projected impact of DSRIP implementation is estimated to increase demand for health providers modeled by approximately 178 FTEs.
- Some of the largest workforce impacts of both DSRIP, and changes independent of DSRIP, are projected to take place among registered nurses ("RNs"), primary care providers, behavioral health providers, and medical and administrative support staff in outpatient and community-based settings.
- The largest workforce impacts of DSRIP implementation alone are estimated to take place among registered nurses:
    - Net demand for registered nurses is estimated to decrease by approximately 93 FTEs, as anticipated non-DSRIP related increase in demand of approximately 40 FTEs are offset by a decline in demand for registered nurses, primarily in hospital inpatient settings, of approximately 133 FTEs
- DSRIP related demand for non-nursing care coordinator is projected to rise by approximately 98 FTEs.
- An estimated additional 92 FTE administrative support staff and 74 FTE medical assistants (or similar direct medical support staff) also are likely to be required in non-acute care settings to support primary care providers, psychiatrists and other medical and behavioral health specialties in meeting both DSRIP related needs and those associated with population growth and aging.
- Projected workforce impacts by 2020 associated with implementation of individual DSRIP programs vary greatly:
    - The impact of the Implementation of Patient Activation Activities such as the PAM tool, for Uninsured and Low/Non-utilizing Medicaid Populations on

projected health care use and workforce demand is greater than the impact of any other AMCH PPS DRSIP project due largely to the community health worker (CHW)/care coordinator FTEs required to staff this initiative.

- The estimated impacts on future workforce demand of other AMCH PPS DSRIP initiatives, particularly those focusing on behavioral health, are also likely to be significant.

Exhibit 8: AMCH PPS Total Projected DSRIP Staffing Impacts (DY1 to DY5)

Setting and Job Category	Non-DSRIP Impacts	DSRIP-related Impacts	Total Impacts
Primary care and community-based clinics			
Primary care providers	9.5	40.5	50
Cardiologists	2	1	3
Endocrinologists	0.5	0	0.5
Psychiatrists/psych nurse practitioners	0.5	7	7.5
Psychologists	-4.5	5	0.5
Licensed clinical social workers	0	37	37
Addiction counselors	0	8.5	8.5
Paraprofessionals/psychiatric technicians	0	3	3
Non-licensed psychiatric technician/paraprofessional or certified peer specialist	0	4	4
Registered nurses	7.5	24.5	32
Licensed practical nurses	3	0	3
Nurse aides/assistants	2	0	2
Medical assistants	17	57	74
Administrative support staff	12.5	83	92
Emergency department			
Emergency physicians	0	-4.5	-4.5
Nurse practitioners & physician assistants	0	-1	-1
Registered nurses	2	-16	-14
Hospital inpatient			
Hospitalists	1	-12	-11
Registered nurses	30	-141.5	-111.5
Licensed practical nurses	4	-7.5	-3.5
Nurse aides/assistants	7	-36	-29
Pharmacists	3.5	0	3.5
Care managers/coordinators/ navigators/coaches			
Care coordinators (non-RN/navigators/CHWs/behavioral health)	0	98	98
Asthma educators/health coaches	0	2	2
CVD educators/health coaches	0	7.5	7.5
Peer support (behavioral health)	0	6	6
Security guards (for crisis intervention centers)	0	12	12
Total FTEs	94	177.5	271.5
Registered nurse total change	39.5	-133	-93.5

C. Target Workforce State Conclusions

As previously described, the purpose of the Target Workforce Report is to analyze and project AMCH PPS's anticipated future workforce needs as a result of system transformation through the DSRIP program in addition to non-DSRIP related impacts.

The demand for health care services and providers within the AMCH PPS network will change over time independent of DSRIP. It is anticipated that demand for physicians and other healthcare professions in AMCH PPS's service area will grow. As a result, these projections suggest that any DSRIP-related changes in demand need to be considered in the context of broader trends affecting the demand for health care services and providers within AMCH PPS's service area. In some cases non-DSRIP impacts may offset or moderate the effects of DSRIP while in other cases they may magnify DSRIP workforce impacts.

As a result of the DSRIP program, there is an anticipated increase in the numbers of care coordinators, RNs, medical assistants, clinical social workers, and primary care providers and support staff which reflects the enhanced demand for these professions within a transformed delivery system. There will likely also be opportunities to redeploy and retrain hospital nursing and other staff currently in inpatient and ED settings where demand is projected to decline to assume roles in outpatient and community-based settings where demand is projected to grow.

While the estimated workforce impacts for several of the PPS's DSRIP projects are not projected to have a large impact on the workforce, the projections do indicate how DSRIP program goals, including reductions in avoidable care use, might be achieved through counseling, improved access to primary and behavioral health services, and better care management for patients with chronic conditions.

Thus, based on the available data as well as DSRIP project inputs and assumptions provided by key PPS stakeholders, the projected workforce impacts modeled suggest that the impacts of the DSRIP program over the five years are unlikely to negatively impact AMCH PPS's healthcare delivery workforce, especially when evaluated alongside the projected workforce impacts of trends external to the program.

IV. Workforce Gap Analysis

A. Workforce Gap Analysis Overview

As described throughout this report, AMCH PPS's workforce is projected to be impacted over the next five years both as a result of the DSRIP program and general population growth.

The purpose of conducting a workforce gap analysis, as part of the DSRIP Workforce Strategy Milestones, is to identify and understand the gaps that exist within AMCH PPS's workforce by leveraging the findings described within this report from the current workforce state as well as projected workforce impacts as described within the AMCH PPS Target Workforce State Report in order to inform the PPS's overall workforce strategy.

AMCH PPS's workforce gap analysis identifies gaps between the current and target workforce states and will be leveraged by the PPS to understand and forecast workforce needs in terms of redeployment, retraining, and hiring needs. Further, the gap analysis will be used to inform the development and implementation of the workforce transition roadmap, which will be used to assist the PPS with workforce planning to reach its target workforce state by the end of the program.

The following sections detail identified workforce gaps, through leveraging projected impacts from the Target Workforce State Report, and describe the factors that are responsible for these gaps.

B. Non-DSRIP Related Workforce Impacts

The demand for health care services and providers within the AMCH PPS network will change over time independent of the anticipated DSRIP impact. A growing and aging population will impact health care utilization and care delivery over time and will influence how the PPS and its partners provide care to patients within the network.

Using the HDMM, we simulated the projected change in demand for physician specialties and other health occupations in each NYS service area county based on projected population characteristics independent of DSRIP across all patients regardless of insurance status. These projections were then scaled to the AMCH PPS based on an estimated market share of discharges by payer, as well as the split of attributed Medicaid lives across counties.

The growing and aging Medicare population drives much of the growth. *Exhibit 9* summarizes the projected impact between 2015 and 2020 of changing demographics on physician demand by specialty.[1] The projections illustrate that across the five relevant counties (Albany, Columbia, Greene, Saratoga and Warren) total physician demand in the AMCH PPS is projected to grow by approximately 197 FTEs between 2015 and 2020 independent of the

[1] Inpatient market share estimate was used as proxy for outpatient market share due to lack of data.

effects of DSRIP.[2] Demand for primary care physicians in the counties identified in *Exhibit 9* is projected to grow by approximately 55 FTEs. The PPS's share of total physician demand growth in the five counties is projected to be approximately 98 FTEs and the PPSs demand for primary care specialties independent of DSRIP is projected to grow by approximately 22 FTEs based on current market share assumptions (*Exhibit 10*).The projections suggest that any DSRIP-related changes in physician demand need to be understood in the context of broader trends affecting the demand for health care services and providers.

Using forecasting models, the Center for Health Workforce Studies concluded that between 2006 and 2030, growth in demand for physicians in New York State would likely outpace growth in supply of physicians, resulting in a shortage of between 2,500 and 17,000 additional physicians by 2030. Within primary care, statewide physician shortages are predicted for general internal medicine (2,286-3,546), family medicine (595-1,011), and OB/GYN (24-355).[3]

[2] This projected growth in physician workforce demand reflects the growing and aging population and was calculated using the IHS Healthcare Demand Microsimulation Model.

[3] Center for Health Workforce Studies, New York Physician Supply and Demand Through 2030.
See: http://chws.albany.edu/archive/uploads/2012/07/nyphyss&d2010f.pdf

Exhibit 9: Projected Impact of Changing Demographics on FTE Physician Demand, 2015 to 2020

	Specialty	Albany	Columbia	Greene	Rensselaer	Saratoga	Schenectady	Warren	Washington	Total
Primary Care	Total primary care	12.9	2	2	7.2	16	9	3.1	2.6	54.8
	Family medicine	3	0.5	0.5	1.8	4.1	2.3	0.7	0.7	13.6
	Internal medicine	8.4	2.1	1.5	4.9	10.8	5.5	2.2	2.3	37.7
	Pediatrics	1.1	-0.7	-0.1	0.3	0.6	1	0.1	-0.6	1.7
	Geriatrics	0.4	0.1	0.1	0.2	0.5	0.2	0.1	0.1	1.7
	Hospitalists (primary care trained)	1.5	0.3	0.3	0.9	2.2	1.1	0.5	0.4	7.2
Medical Specialties	Allergy and immunology	0.3	0	0	0.2	0.4	0.3	0	0	1.2
	Cardiology	3.2	0.9	0.6	1.8	4.1	1.9	1	0.8	14.3
	Critical care/pulmonology	0.9	0.3	0.2	0.5	1.3	0.6	0.3	0.2	4.3
	Dermatology	1.2	0.3	0.2	0.7	1.6	0.8	0.3	0.3	5.4
	Endocrinology	0.7	0.1	0.1	0.4	0.8	0.4	0.2	0.2	2.9
	Gastroenterology	1.1	0.2	0.2	0.7	1.5	0.8	0.2	0.3	5
	Infectious disease	0.5	0.2	0.1	0.3	0.8	0.3	0.2	0.2	2.6
	Hematology and oncology	1.1	0.3	0.2	0.6	1.4	0.7	0.3	0.3	4.9
	Nephrology	0.8	0.2	0.1	0.4	0.7	0.4	0.2	0.2	3
	Pediatric subspecialty	0.3	-0.2	0	0.1	0.2	0.4	0	-0.2	0.6
	Rheumatology	0.4	0.1	0.1	0.3	0.6	0.3	0.1	0.1	2
Surgery	General surgery	1.3	0.3	0.2	0.8	1.7	0.8	0.3	0.3	5.7
	Colorectal surgery	0	0	0	0	0.1	0	0	0	0.1
	Neurological surgery	0.3	0.1	0	0.2	0.4	0.2	0.1	0.1	1.4
	Ophthalmology	2.1	0.5	0.4	1.2	2.6	1.3	0.6	0.6	9.3
	Orthopedic surgery	1.6	0.4	0.3	1	2.1	1.1	0.4	0.4	7.3
	Otolaryngology	0.7	0.1	0.1	0.4	0.9	0.5	0.1	0.1	2.9
	Plastic surgery	0.4	0	0.1	0.3	0.6	0.3	0.1	0.1	1.9
	Thoracic surgery	0.3	0	0	0.1	0.3	0.2	0.1	0.1	1.1
	Urology	1.1	0.3	0.2	0.7	1.4	0.7	0.3	0.3	5
	Vascular surgery	0.2	0.1	0	0.1	0.3	0.1	0.1	0.1	1
	Obstetrics and gynecology	0.9	-0.3	0.1	0.6	1.5	1.2	0	-0.1	3.9
Other	Anesthesiology	2.6	0.7	0.6	1.7	4.6	2.1	0.9	1	14.2
	Emergency medicine	0.3	-0.1	0.1	0.3	1.1	0.6	0.1	0	2.4
	Neurology	1	0.2	0.2	0.6	1.5	0.8	0.3	0.3	4.9
	Other medical specialties	1.4	0.3	0.2	0.8	2	1.1	0.4	0.3	6.5
	Pathology	0.4	0.2	0.1	0.3	0.9	0.4	0.2	0.1	2.6

Specialty	Albany	Columbia	Greene	Rensselaer	Saratoga	Schenectady	Warren	Washington	Total
Physical med and rehab.	0.8	0.2	0.1	0.5	1.1	0.6	0.2	0.2	3.7
Psychiatry	0.2	-0.4	0.1	0.5	1.6	1.2	-0.1	0	3.1
Radiology	2.8	0.5	0.4	1.6	3.5	1.9	0.6	0.7	12
Total	**43.3**	**7.8**	**7.3**	**25.8**	**59.8**	**32.1**	**11.1**	**9.9**	**197.1**

Exhibit 10: Projected Impact of Changing Demographics on Physician Demand within the Five-County Region without DSRIP, 2015 to 2020

	Specialty	FTEs
Primary Care	Total primary care	6.5
	Family medicine	1.5
	Internal medicine	4.5
	Pediatrics	0.5
	Geriatrics	-
	Hospitalists (primary care trained)	1
Medical Specialties	Allergy and immunology	0.5
	Cardiology	2
	Critical care/pulmonology	0.5
	Dermatology	0.5
	Endocrinology	0.5
	Gastroenterology	0.5
	Infectious disease	-
	Hematology and oncology	0.5
	Nephrology	0.5
	Pediatric subspecialty	-
	Rheumatology	-
Surgery	General surgery	0.5
	Colorectal surgery	-
	Neurological surgery	-
	Ophthalmology	1
	Orthopedic surgery	1
	Otolaryngology	-
	Plastic surgery	-
	Thoracic surgery	-
	Urology	0.5
	Vascular surgery	-
	Obstetrics and gynecology	1
Other	Anesthesiology	1.5
	Emergency medicine	-
	Neurology	0.5
	Other medical specialties	0.5
	Pathology	-
	Physical med and rehab.	0.5
	Psychiatry	0.5
	Radiology	1
	Total	**21.5**

Exhibit 11 summarizes projected growth in FTE demand between 2015 and 2020 for select health professions, as well as the growth in demand for providers in the AMCH PPS network based on changes in demographics. Similar to the approach for developing PPS-specific physician FTE demand projections, these were also scaled to the AMCH PPS based on its estimated market share across settings.

Independent of the effects of DSRIP, demand for registered nurses in the PPS service area is projected to be strong, growing by approximately 433 FTEs between 2015 and 2020. Strong growth in demand is also likely among nurse aides and home health aides and various therapist and technologist titles. Applying the PPS market share to applicable settings,

registered nurse demand will grow by approximately 45 FTEs. Smaller impacts on future PPS demand across care settings are likely to be seen for a range of health occupations (e.g., technicians, technologists, therapy aides and assistants).

The demand for psychologists is projected to decline slightly between 2015 and 2020 due to changing demographics. The little population growth across the PPS service area is primarily among the elderly population (who use minimal psychology services); the highest use of psychologist services is by children and younger adults—and this population is growing slowly and in some counties is actually declining. Independent of this projected change in demand, there is evidence of a current shortfall of psychologists and other behavioral health providers in the PPS service area (documented elsewhere but outside the scope of this report).

Exhibit 11: Projected Growth in Demand for Select Health Workers Between 2015 to 2020 Based on Changing Demographics and Expanded Insurance Coverage

Health Profession	Service Area Total [a]	AMCH PPS Network				
		Inpatient	Emergency	Ambulatory	Home Health	AMCH PPS Total
Registered nurse	433	30	2	7.5	5	44.5
Licensed practical nurse	141	4	0	3	1	8
Nurse aide	351	7	0	2	0.5	9.5
Home health aide	65	0	0	0	10	10
Pharmacist	27.5	0	0.5	3	0	3.5
Pharmacy technician	35	0	0.5	4	0	4.5
Pharmacy aide	4.5	0	0	0.5	0	0.5
Psychologist	-12	0	0	-4.5	0	-4.5
Chiropractor	7.5	0	0	0.5	0	0.5
Podiatrist	4.5	0	0	0.5	0	0.5
Dietitian	9	0.5	0	0.5	0	1
Optician	2.5	0	0	0	0	0
Optometrist	1.5	0	0	0	0	0
Occupational therapist	58.5	6	0	0.5	0.5	7
Occupational therapist aide	9.5	1	0	0	0	1
Occupational therapy assistant	12.5	1	0	0	0	1
Radiation therapist	2.5	0	0	0	0	0
Radiological technologist	13.5	0	0.5	1.5	0	2
Respiratory therapist	10	0.5	0	0.5	0	1
Respiratory therapy technician	1.5	0	0	0	0	0
Medical clinical technician	6.5	0	0	0.5	0	0.5
Medical clinical lab technologist	25	2	0	1	0	3
Medical sonographer	23.5	2.5	0	0.5	0	3
Nuclear medicine technologist	42.5	0.5	4	0	0	4.5

[a] Total across the following 8 counties: Albany, Columbia, Greene, Rensselaer, Saratoga, Schenectady, Warren, Washington.

It should be noted that the projected demand in healthcare workers shown in Exhibit 11 does not factor in current vacancies within the AMCH PPS. Organizations that submitted current state workforce survey's to the AMCH PPS reported a total of 1,015 full-time vacancies and 638 part-time vacancies. The greatest vacancies were reported for staff registered nurses (196), personal care aids (186) and nurse aides/assistants (121).

C. Project 2.a.iii: Health Home at Risk Intervention Program

Overarching project goals of the Health Home at Risk Intervention project include proactive management of higher risk patients not currently eligible for Health Homes through access to high quality primary care and support services. The targeted population for this intervention includes patients who, based on their history of care plan adherence and/or social needs, are identified to be at-risk and could benefit from care management and care coordination services. These include, but are not limited to, patients with high risk pregnancy, hepatitis C, diabetes, cancer, behavioral health needs, cardiology and respiratory conditions.

Using the HDMM, preliminary estimates suggest that, in comparison to non-participants, participants' experience:

- A decline of 3.7% in inpatient days
- A 4.2% decline in ED visits
- A 1.8% increase in primary care visits

The distribution of staffing impacts by care settings and job titles most likely to be affected by 2020 include:

- 19 care coordinator FTEs may potentially be required to support the level of care management called for under this initiative to serve 15,840 patients
- **In outpatient/office settings:** A possible increase of 2,400 primary care visits and 1,200 specialist visits could increase demand for primary care providers by potentially 2 FTEs, direct medical support by approximately 3 FTEs, and direct admin supply by approximately 2 FTEs
- **In the ED setting**: The impact on providers in this setting is a minimal decrease in FTEs
- **In the inpatient setting:** A potential decline of 3,600 inpatient days could contribute to a potential 22 FTE decrease in RN FTEs

Exhibit 12: Health Home at Risk Intervention Program Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job Title	Total Workforce Impact
Office/outpatient	
Primary care providers	1.5
Direct medical support	3
Direct admin support	2
Registered nurses	1
Emergency department	
Emergency physicians	-0.5
NPs and PAs	-0.5
Registered nurses	-2
Inpatient	
Hospitalists	-2
Registered nurses	-21.5

Workforce Impacts by Care Setting and Job Title	Total Workforce Impact
Licensed practical nurses	-1
Nurse aides/assistants	-5.5
Coordinators/educators	
Care coordinators	19

The analysis suggests that project 2.a.iii's greatest impact on the AMCH PPS workforce will be on the FTEs associated with care coordinators, with increases also estimated for office-based primary care and specialty care providers and direct support. Workforce FTEs in the ED and inpatient settings are anticipated to decline, with a greater impact on the inpatient setting and specifically RNs owing to this patient population achieving better control of their health. The results in the table above are reflective of AMCH PPS's assumption that a portion of the target population (engagement target) may refuse care.

ED / Inpatient Workforce Gaps

The projected decrease in demand for inpatient nursing positions, including RNs, LPNs and nurse aids/assistants, as a result of project impacts is likely to be offset by market changes and reported vacancies in the PPS. The Health Home initiative is expected to create an approximate 24 FTE reduction in the demand for RNs (ED and inpatient combined), in addition to reductions in the demand for LPNs and nurse aides.

As part of the PPS's overall current workforce state data, a vacancy rate of approximately 6.8% was reported for all RNs (a total of 196 vacant FTEs), and a vacancy rate of 9.6% was reported for nurse aides/assistants (a total of 121 vacant FTEs). These vacancies may mitigate the declining demand for nursing positions due to project impacts. Additionally, due to anticipated workforce impacts unrelated to the DSRIP program, such as additional care demands related to population growth, there is likely to be an increase in the demand for nursing workforce in NYS. Therefore, the anticipated decline in nursing FTEs as a result of DSRIP projects may be offset by general population demand and current vacancy rates.

Care Management Workforce Gaps

As indicated in *Exhibit 12*, there is a significant projected increase in the number of care management positions required to staff the Health Home initiative, which is estimated at 19 care coordinator FTEs. Based on the current workforce state data reported, the vacancy rate across the PPS for care coordinators is approximately 23.0%. Given this reported high vacancy rate, a sizeable gap exists in the current workforce for care management. Assuming full project implementation by DY3, the gap will likely be enhanced as the number of care coordinators needed to staff this project requires an almost 20% increase to the current headcount of 100 care coordinator FTEs.

D. Project 2.a.v: Create a Medical Village Using Existing Nursing Home Infrastructure

According to the AMCH PPS project plan, four nursing homes have expressed interest in decertifying beds and converting this excess bed capacity to alternative uses. This space will primarily be converted to urgent care centers or other health related purposes to promote better outcomes by providing same facility treatment for nursing home residents that currently require either medical transportation or are sent to the ED for conditions that could be treated in a less intensive setting.

These sites will house newly hired care navigator staff that will assist residents and others to make connections with community based organizations to meet patient needs. These urgent care centers or multi-specialty sites will have established relationships with PCMH Level 3 2014 primary care sites. This will facilitate more coordinated care as the urgent care sites will also utilize EHRs that meet the guidelines for PCMH Level 3 2014 as well as meaningful use. Geographically, these new medical villages will be located in underserved neighborhoods and communities, to the extent feasible, including NYS DOH Hot Spot Cancer mapping sites for colorectal cancer, colorectal cancer screenings, mammograms, female breast cancer and lung cancer.

Using the reported outcomes from the literature in the analysis, the following table provides the projected implications, in terms of service utilization, for this DSRIP project by 2020:

- Potentially 1,830 fewer emergency visits
- Approximately 800 less hospitalizations
- A reduction of 4,550 inpatient days

For workforce impact, the analysis suggests:

- **In outpatient/office settings:** A possible increase in demand for primary care providers of potentially 8 FTEs, direct medical support of approximately 14 FTEs, and direct admin supply by approximately 10 FTEs as well as a slight increase in RN FTEs (approximately 2)
- **In the ED setting**: The impact on providers in this setting ranges from no impact to a slight decrease in FTEs
- **In the inpatient setting:** A potential decline of greater than 4,500 inpatient days could contribute to a potential decrease in 27 FTE RNs, as well as a decrease in hospitalists, LPNs and nurse aids.

Exhibit 13: Create Medical Village Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job	Total Workforce Impacts
Office/Outpatient	
Primary care providers	8
Direct medical support	14

Workforce Impacts by Care Setting and Job	Total Workforce Impacts
Direct admin support	10
Registered nurses	1.5
Emergency Department	
Emergency physicians	-1
NPs & PAs	0
Registered nurses	-3
Inpatient	
Hospitalists	-2.5
Registered nurses	-27
Licensed practical nurses	-1.5
Nurse aides	-7

AMCH anticipates that dual eligible beneficiaries may see a decrease in inpatient service utilization through the provision of non-emergent care at these locations. The analysis appears to support this, with inpatient service utilization potentially falling by more than 4,500 days by 2020.[4]

Nursing Workforce Gaps

The biggest anticipated workforce impact of project 2.a.v is likely to occur within the nursing workforce. The reduction in hospitalizations, ED visits, and inpatient days will result in a decreased demand for RNs, LPNs, and nurse aides. However, these reductions may be offset by the projected growth in demand for these positions by 2020 based on changing demographics and expanded insurance coverage. Inpatient RNs are expected to increase in demand by 30 FTEs, LPNs are predicted to see an increase in demand of 4 FTEs, and nurse aides are expected to see an increase in demand of 7 FTEs. Thus, the decline in inpatient nursing workforce needed to staff this project may be mitigated by non-DSRIP related workforce impacts.

Primary Care / Outpatient Workforce Gaps

Greater care coordination may result in an increase in demand for various care providers in the outpatient setting. In addition to PCPs, there will be a greater need for clinical support staff including direct medical and administrative support. The demand for PCPs due to changing demographics is also expected to increase by 6-7 FTEs by the year 2020. There is currently a low vacancy rate of 3.2% reported for PCPs across the PPS, and medical and administrative support positions similarly have lower than average reported vacancy rates, which may aid recruitment efforts. The combination of DSRIP and non-DSRIP related workforce impacts are expected to create gaps in the primary care workforce.

[4] Provided in AMCH PPS communication.

E. Project 2.b.iii: Emergency Department Care Triage for At-Risk Populations

Many patients who visit the emergency department have non-urgent conditions which could have been treated in a less expensive setting. The goals of this initiative are to:

- identify ED patients who would be better served by a PCPs who can provide continuity of care
- divert members to appropriate alternative PCMH 2014 Level 3 outpatient care sites, health home organizations, or community based crisis stabilization services (project 3.a.ii), and also increase connections of members to primary care providers and
- educate patients on appropriate use of ED services.

The statewide target is to reduce avoidable ED use among the Medicaid population by 25% within five years. Working towards this goal, AMCH PPS's focus for project 2.b.iii includes all patients who meet the program criteria.

The target patient population modeled includes the 35% of attributed lives that use the ER at least once during the year and the 6.5% that drive over 25% of the volume. This includes patients with ambulatory sensitive chronic conditions and at-risk patients requiring more intensive ED care management services post discharge. Program components include PPS connectivity to community PCPs, especially PCMHs, but also home health home providers and other resources. Another resource to be developed concurrently with the PCMH certifications is the expansion of operating hours for primary care and open scheduling policies which will facilitate the connection of the patient from the ED to a primary care provider.

For patients without a primary care provider presenting with minor illnesses, patient navigators will assist the patient to secure an appointment with a primary care provider who has PCMH 2014 Level 3 recognition. For patients with a PCP, patient navigators will assist the member in receiving a timely appointment with their own provider.

By 2020 the net projected AMCH PPS impact associated with achieving this modeled reduction in ED visits may be the following:

- Approximately 3,500 fewer ED visits
- An additional 1,800 primary care visits as a result of the 50% of diverted ED visits will result in a visit to a PCP

Examining the FTE effects by setting, changes in utilization suggest that by 2020:

- Approximately 2 patient navigator FTEs may be required for project implementation
- **In the ED setting:** The PPS network will require approximately 6 fewer emergency RN FTEs, 2 fewer ED physician FTEs, as well as slight decreases in nurse practitioners and physician assistant FTEs

- **In the office/outpatient settings:** Estimated slight increases in primary care provider FTEs, direct medical support FTEs, and FTEs in direct administrative support may be required

Exhibit 14: Emergency Department Triage Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job Title	Total Workforce Impacts
Office/Outpatient	
Primary care providers	1
Direct medical support	1.5
Direct admin support	1
Registered nurses	0.5
Emergency Department	
Emergency physicians	-1.5
Nurse practitioners & physician assistants	-0.5
Registered nurses	-5.5
Care coordinators	
Non-nurse navigators (patient navigators)	2

AMCH's experiences with the implementation of health homes has already impacted ED utilization for some high utilizers, and it is anticipated that enhanced linkages to community based care will further reduce utilization. The impact is included in the estimates in *Exhibit 14*, above.

Nursing Workforce Gaps

In support of an overarching goal of reducing avoidable ED admissions by 25%, project impacts are likely to result in a decreased demand for ED providers, particularly with the nursing workforce, as there is an expected decline of 5-6 RN FTEs. This reduction in demand is likely to occur most significantly in DY3, assuming full project implementation and a significant reduction in the number of potentially preventable ED visits by approximately 3,500 visits. However, the projected decrease in demand for nursing positions as a result of the ED Triage project may be offset by market changes as well as the number of reported nursing vacancies across the PPS.

Within the PPS, there are 196 reported RN FTE vacancies. Further, the non-DSRIP impact on demand for RNs is estimated at an increase of 2 FTEs in the ED setting, and an increase of 7-8 FTEs in the outpatient setting. Thus, the anticipated decline in the demand for ED nurses as a result of DSRIP projects may be balanced by combined opportunities of vacant positions and increased demand due to non-DSRIP related impacts such as population growth.

F. Project 2.d.i: Implementation of Patient Activation Activities for Uninsured and Low/Non-Utilizing Medicaid Populations

Project 2.d.i initially began with the focus of increasing patient activation activities for the population that were under-utilizing or not utilizing the health care system at all. At present, the project has evolved to focus more on increasing the ability of the target population to manage itself, and thereby increase their levels of engagement.

Increased engagement and self-management may increase service demand for primary care and preventive services and some specialty care and reduce inappropriate ED use and hospitalizations. In the short term (1-5 years) this initiative will likely increase use of some health care services. In the long term, the goal is to reduce avoidable disease onset and the associated use of health care services associated with such disease.

Patient engagement will be determined by conducting assessments of their activation in care. Using Patient Activation Measurement (PAM) surveys, patients are routinely assessed to determine their level of engagement; with the goal being to increase patient self-management skills to the highest level possible. Workers who conduct these PAM assessments will either provide counseling to the patient or refer them to their PCP for this purpose. Projected project effects by care setting include:

- **Ambulatory care settings (Health Homes, FQHCs, other)**: Staffing among PCPs, PCMH care managers, behavioral health counselors and other care coordinators likely will rise to accommodate increased numbers of enrolled uninsured and Medicaid patients at PCMHs, Health Homes and other ambulatory care settings, as well as patients referred for self-management, counseling and education.
- **Primary care physician settings**: Increased numbers of referrals due to better care management will require staffing increases among PCP providers to accommodate increased numbers of new patients.
- **Emergency department settings**: Outreach to establish a usual source of care with a primary care provider can help reduce avoidable emergency visits. In addition, patients who are actively engaged as partners in their own care are less likely to utilize the EDs inappropriately.
- **Inpatient care settings**: In the longer term, prevention has the potential to reduce or delay onset of chronic disease and the associated use of health care services associated with such disease

Exhibit 15 summarizes modeling results and projected target state impacts of this DSRIP clinical improvement project. By 2020 the net projected annual utilization impact associated with this DSRIP initiative is the following:

- Approximately 800 fewer emergency visits
- Approximately 900 fewer inpatient days
- Approximately 29,500 additional primary care visits

The projected workforce impact includes:

- An estimated 32 additional non-RN care coordinator (CHW) FTEs
- **In office/outpatient settings:** Results suggest the following additional FTEs may be required: 13-14 primary care provider FTEs, 23 FTE direct medical supports, 16 FTE administrative support staff and 6 FTE staff RNs
- **In the ED setting:** Minimal estimated change in demand
- **In the inpatient setting:** An estimated decline in demand for inpatient staff RNs of approximately 6 FTEs

Exhibit 15: Patient Activation Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job Title	Total Workforce Impacts
Office/Outpatient	
Primary care providers	13.5
Direct medical support	23
Direct admin support	16.5
Registered nurses	6.5
Emergency Department	
Emergency physicians	-0.5
NPs and PAs	0
Registered nurses	-1.5
Inpatient	
Hospitalists	-0.5
Registered nurses	-5.5
Licensed practical nurses	-0.5
Nurse aides/assistants	-1.5
Non-RN care coordinator (CHWs)	31.5

Increased patient activation is expected to increase screening and preventive services, as well as enable patients to better manage existing conditions. Therefore, the results indicate a corresponding rise in primary care service demand and additional care coordinator FTEs to meet this need.

Primary Care / Outpatient Workforce Gaps

In primary care / outpatient settings, the PPS will experience increases in demand for PCPs from DY2 to DY4 as well as for medical and administrative support, assuming full project implementation. As previously described, the current reported vacancy rates for these positions are below average, however non-DSRIP impacts are also expected to increase demand for primary care workforce, with an expected need for 6.5 additional PCP FTEs, and an additional 7.5 ambulatory RNs. Thus, workforce gaps in the primary care / outpatient setting are likely to increase throughout the DSRIP program's term.

Care Management Workforce Gaps

In order to support increased patient engagement, and connections to primary care, an increase in the demand for care coordinators (CHWs) is anticipated. Demand will likely increase by DY4, which is when 100% active engagement is anticipated to occur by. Based on the current state data reported, the PPS's network includes approximately 30 community health workers with 7 reported FTE vacancies, for a vacancy rate of 23.3%. The anticipated need for an additional 31-32 CHW FTEs due to project impacts will likely create even greater workforce gaps for this position.

G. Project 3.a.i: Integration of Primary Care & Behavioral Health Services

To address the needs of individuals with co-morbid physical and behavioral health needs, AMCH PPS intends to better integrate behavioral and physical health outcomes by pursuing three related models of primary care and behavioral health integration:

- Model 1:
  - Co-locating behavioral health services at primary care practice sites, developing collaborative evidence-based standards of care (including medication management, care engagement), conducting preventive care screenings that will include behavioral health screenings, using an EHR to track patients
- Model 2:
  - Co-locating primary care at behavioral health sites, developing collaborative evidence-based standards of care (including medication management, care engagement), conducting preventive care screenings that will include behavioral health screenings, using an EHR to track patients
- Model 3:
  - Implementing the IMPACT model at primary care sites, developing collaborative evidence-based standards of care (including medication management, care engagement), employing a depression care manager, a psychiatrist, and measuring outcomes and providing "stepped care" as required by IMPACT as well as using an EHR to track patients

The goal is to transform the delivery of behavioral health services by integrating primary care and behavioral health services. This initiative will include additional training and certification of participating PCPs to achieve 2014 Level 3 PCMH primary care certification, as well as hiring additional behavioral health providers to expand access to community-based care. The AMCH PPS identified that in 2012 there were over 6,700 behavioral health-related potentially preventable emergency visits within the PPS network of which approximately 22% were related to alcohol dependence, alcohol withdrawal, and cocaine dependence. It is anticipated that a reduction in preventable visits will be achieved through multiple interventions, and as described in the following section we anticipate that the Behavioral Health Community Crisis

Stabilization Services (project 3.a.ii) intervention will have a much larger effect on reducing preventable emergency visits and hospitalizations than will be achieved through the three integration models analyzed in this section.

Though the project intends for all patients seeking care at the participating sites to receive preventative care behavioral health screening, the target population modeled for intervention was individuals with co-morbid behavioral health and physical health conditions residing within the AMCH PPS, as these are among the highest risk group for preventable emergency department visits and avoidable hospitalizations.

Projected changes in utilization by 2020 as a result of program implementation include (*Exhibit 16*):

- The number of BH-related ED visits may decrease by about 230 visits
- BH-related inpatient days may fall by about 370 days

By 2020 the net projected PPS-wide workforce impact associated with this DSRIP initiative will likely include:

- **In the outpatient/office setting**: approximately 37 FTE increase in licensed behavioral health workers—including a mix of psychiatrists or psychiatric nurse practitioners, psychologists, clinical social workers, addiction counselors or like behavioral health providers. In addition, we calculated approximately 40 FTE care managers will be required, as well as 5 primary care providers and 35 FTE direct admin support staff.
- **In the ED setting**: Little anticipated impact on the providers in this setting.
- **In the inpatient setting**: Little anticipated impact on the providers in this setting.

Exhibit 16: Integration of Primary Care and Behavioral Health Services Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job Title	Total Workforce Impacts
Office Setting	
Psychiatrists/psych nurse practitioners	3.5
Psychologists	5
Licensed clinical social worker/depression care manager	19.5
Addiction counselors	8.5
Care managers	39.5
Primary care providers	5
Direct medical support	9
Direct admin support	35
Registered nurses	0.5
Emergency Department	
Emergency physicians	0
Nurse practitioners or physician assistants	0
Registered nurses	-0.5
Inpatient	
Hospitalists	0
Registered nurses	-2
Licensed practical nurses	0
Nurse aides/assistants	-0.5

The project goals will increase access to behavioral health services and the results indicate a corresponding rise in BH care providers and associated support staff FTEs.

Primary Care/ Behavioral Health in Community Based Settings Workforce Gaps

Based on the projected workforce impacts, the PPS is likely to experience an increased demand in LCSWs, care managers, and administrative support to facilitate the shift to community-based care. The increase in demand is projected to start in DY3 with the greatest impacts anticipated during DY4, as 59.2% of the PPS are expected to become actively engaged. The current vacancy rate for administrative support workforce within the PPS is less than 5%, but increased demand for these positions as a result of DSRIP project impacts will likely widen this gap.

The current workforce state data reported by Article 31 and Article 32 behavioral outpatient facilities indicates a vacancy rate of 6.35%, which is below the average vacancy rate. However, psychiatrists and psychologists had high reported vacancy rates of 14.8% and 13.3%, respectively. In addition to the reported vacancy rates for these positions across the PPS, the supply of psychiatrists in NYS is forecasted to decline between 11.6% - 17.5%, while state-wide demand is projected to increase between 4.1% - 28.0% by 2030.[5] These external factors both impacting the supply and demand for psychiatrists are likely to further increase the PPS's workforce gaps and create more difficulties in recruiting the necessary workforce to address project impacts. Recruitment difficulties are likely to primarily impact Article 31 outpatient and Article 32 outpatient facilities' behavioral health workforce during DY4 as a result of the projected impacts for this project.

H. Project 3.a.ii: Behavioral Health Community Crisis Stabilization Services

The PPS will implement an intervention program that at a minimum will integrate and develop outreach, mobile crisis teams, and community based intensive crisis services, following successful models that have been demonstrated in other areas of the state. AMCH PPS will work with health homes, PCMHs, The Capital District Psychiatric Center (CDPC) and EDs to develop a centralized triage that, when appropriate, will divert patients from the ED to less intensive settings by leveraging new and existing resources such as outreach, mobile crisis intervention and intensive crisis services, as well as written protocols to ensure that patients are treated in the most appropriate setting.

It is anticipated that anyone who is having a behavioral health crisis would be a potential client for crisis services. This project will target the behavioral health population, together with other projects (2.a.iii & 4.b.i) and will serve patients with behavioral health diagnoses

[5] Center for Health Workforce Studies, The Health Care Workforce in New York
See: http://chws.albany.edu/archive/uploads/2014/08/nytracking2014.pdf

who need crisis stabilization services that could be delivered in settings other than the ED or inpatient settings.

The intervention has the following goals:

1. **Supporting the development of 3-4 crisis stabilization sites throughout the AMCH PPS region**. Three sites will be established to serve adult populations, with one site each in Saratoga County, Albany County, and Columbia/Greene Counties. A fourth crisis stabilization site is envisioned to provide services to the pediatric and adolescent population. The region for this pediatric/adolescent crisis stabilization site is undetermined, and staffing for this potential site is not included in the table below.
2. **Supporting the expansion of the Mobile Crisis Services throughout the AMCH PPS region** to provide services 24 hours a day, seven days a week, 365 days a year. None of the four Mobile Crisis Services in the PPS currently provide services at this level. Services will be both face to face and telephonic.

Areas of opportunities for efficiencies in Project 3aii staffing and funding include collaborating with other organizations. AMCH PPS will look to collaborate with AHI PPS in Saratoga County, as the AHI PPS also is participating in Project 3.a.ii; will work toward partnering with Northern Rivers Family Services, who have received a capital funding award for crisis stabilization services; and funding will partially come from increased revenues related to the upcoming "carving in" of crisis intervention services into Medicaid Managed Care Plans.

Exhibit 17 projects the potential effects on service utilization and PPS workforce requirements of this DSRIP initiative intended to strengthen community crisis stabilization services and capabilities, by 2020:

- Approximately 2,300 additional behavioral health outpatient visits
- Approximately 1,900 fewer emergency visits
- Approximately 1,900 fewer hospitalizations and 13,800 fewer inpatient days

The projected workforce impact includes:

- **Intervention staff:** The additional workforce to staff the crisis stabilization centers and mobile stabilization teams are described above and summarized in *Exhibit 17*.
- **In the ED setting**: We project minimal impact on the providers in this setting.
- **In the inpatient setting**: Anticipated decreases in the FTEs of providers in this setting, including an estimated decrease of 83 FTE RNs, 7 fewer hospitalists, 4-5 fewer licensed practical nurses, and 21 fewer nurse aides. A portion of the reduction in hospitalists could be psychiatric hospitalists or other professionals (psychiatrists, or psychiatric nurse practitioners) who provide mental health services to patients while in the hospital.

Exhibit 17: Crisis Stabilization Services Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job	Total Workforce Impacts
Crisis Stabilization Center	
Licensed clinical social workers	12
Psychiatrists/psych nurses	3
Nurse practitioner (primary care)	6
Medical director physician (assume PCP)	3
Direct admin support	12
Registered nurses	12
Paraprofessionals/psychiatric technicians	3
Peer counselors	6
Security guards	12
Care coordinator/navigator	6
Mobile Crisis Teams	
Licensed clinical social workers	4
Non-licensed psychiatric technician/paraprofessional or certified peer specialist	4
Office setting	
Licensed clinical social worker	1.5
Psychiatrists/psych nurses	0.5
Direct admin support	1.5
Emergency Department	
Emergency physicians	-1
NPs and PAs	0
Registered nurses	-3
Inpatient/psychiatric	
Hospitalists	-7
Registered nurses	-82.5
Licensed practical nurses	-4.5
Nurse aides/assistants	-21

ED / Inpatient Workforce Gaps

Significant impacts are predicted to occur within the inpatient setting, specifically for nursing workforce. An anticipated reduction in hospitalizations will result in a decreased demand for RNs by 85-86 FTEs, LPNs by 4-5 FTEs, and nurse aides/assistants by approximately 21 FTEs. Some of these reductions from project impacts may be offset by other factors including population growth and existing workforce gaps. The current state workforce reports a modest vacancy rate of 6.8% for RNs; however, the vacancy rate of 9.6% reported for nursing aides/assistants is higher than the average reported vacancy rate across the PPS. Further, psychiatric nurse practitioners had the highest reported vacancy rate among all job titles within the PPS (31.9%).

Additionally, the PPS is expected to incur a growth in demand for various nursing professions within the ED and inpatient settings due to changing demographics and expanded insurance coverage. Projected increases in these settings include 32 FTEs for RNs, 4 FTEs for LPNs, and 7 FTEs for nurse aides/assistants by the year 2020. Thus, even with significant reductions in staffing needs due to DSRIP project implementation, existing vacancies and projected demand

resulting from non-DSRIP factors will likely mitigate future workforce gaps in the ED / inpatient setting.

Behavioral Healthcare Workforce Gaps

The development of crisis stabilization sites to provide behavioral health services will create additional demand for several behavioral health positions across the PPS. The most significant impacts predicted to occur are for licensed clinical social workers, nursing, PCPs, and psychiatrists. An additional 16 LCSW FTEs will be needed to staff the 3-4 crisis stabilization centers and four mobile units. Increased demand for medical directors (PCPs) and direct administrative support is expected to support new Crisis Stabilization Centers, and demand for nursing, including psychiatric nurses, will likely grow as mental and behavioral health services become shifted from the ED to outpatient settings.

As mentioned previously, the PPS already faces vacancies within the psychiatric nurse practitioner position, which has the highest reported vacancy rate among all job titles in the PPS. The current state report also reports a high vacancy rate for psychiatrists (14.8%). Further, and as noted in the analysis for Project 3.a.i, the supply of Psychiatrists in NYS is forecasted to decline between 11.6% - 17.5%, while state-wide demand is projected to increase between 4.1% - 28.0% by 2030.[6] We can therefore expect to see gaps in workforce providing mental health services, which the PPS will need to address during implementation of DSRIP projects targeting behavioral health. Additionally, the need for PCPs is expected to increase independent of DSRIP by approximately 6-7 FTEs. The current workforce survey did not report significant gaps within the PCP workforce however the PPS has highlighted a number of hot spot zip codes and rural areas where there are shortages which is impacting access to care. The implementation of the DSRIP projects will likely increase the need for PCPSs within the PPS. There are currently only 5 reported vacancies for LCSWs, a low vacancy rate of 4.4%; however, implementation of project 3.a.ii may create gaps in this particular workforce if demand cannot be met.

I. Project 3.b.i: Evidence-based Strategies to Improve Management of Cardiovascular Disease

AMCH PPS will pursue a multi-pronged approach to address major cardiovascular disease ("CVD") risk factors. This includes improving prescribing and adherence to aspirin prophylaxis among eligible patients, improving blood pressure control by updating and strengthening implementation of HTN guidelines, improving cholesterol control by updating current cholesterol management and treatment guidelines, and increasing tobacco cessation by enabling PCPs to distribute nicotine replacement therapy at the point-of-care.

The targeted patient population will include patients living in poverty between the ages of 19-64 in the AMCH PPS 5 county catchment area with known cardiovascular diagnoses. The

[6] Center for Health Workforce Studies, The Health Care Workforce in New York
See: http://chws.albany.edu/archive/uploads/2014/08/nytracking2014.pdf

target population will also include patients with elevated blood pressure readings in the past but without a hypertension diagnosis in order to develop a treatment plan for an undiagnosed condition. Guidelines provided by the Million Hearts Campaign for clinical processes and treatment will be followed.

Exhibit 18 summarizes modeling results and projected impacts. By 2020 the net projected annual utilization impact associated with this DSRIP clinical initiative is the following:

- Emergency visits may decline by approximately 100
- Inpatient days may potentially decrease by approximately 600
- 7,200 additional urgent (unscheduled) visits to primary care providers is estimated
- 3,600 more visits to cardiologists may occur

The projected workforce impact by 2020 includes:

- Approximately 8 FTE additional CHWs to provide education/ counseling services to 7,180 patients
- **In outpatient/office settings:** an increase of 3 FTE additional primary care providers and 1 FTE cardiologist supported by approximately 8 FTE direct medical support staff and 6 FTE direct administrative support staff and 3 RN FTEs
- **In the ED setting**: An nominal impact on emergency department staff
- **In inpatient settings:** a slight decrease in demand for hospital inpatient staff—including approximately 3 FTE fewer RNs

Exhibit 18: CVD Management Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job	Total Workforce Impacts
Outpatient/Office setting	
Primary care providers	3
Direct medical support	7.5
Direct admin support	5.5
Registered nurses	2.5
Specialists (Cardiologists)	1
Emergency Department	
Emergency physicians	0
Registered nurses	-0.5
Inpatient	
Hospitalists	0
Registered nurses	-2.5
Nurse aides/assistants	-0.5
Community Health Workers (CHW)	7.5

The analysis suggests that the greatest impact of this project on workforce will be in outpatient settings where most care management activities associated with this project will

occur. The project may also have some impact on nursing staff in the inpatient setting. There is minimal workforce impact in the ED setting.

Primary Care / Outpatient Workforce Gaps

The most significant impacts to occur from the CVD Management initiative are within the outpatient setting. According to current workforce state data, the reported vacancy rates for PCPs, medical assistants, LPN's, and administrative support are all relatively low, falling below the average vacancy rate. Additionally, by 2020, the anticipated growth in demand for PCPs due to changing demographics and expanded insurance coverage is 6-7 FTEs based on the PPS's current market share; the growth in demand for LPNs is 8 FTEs, including 3 FTEs in outpatient settings. The combination of both DSRIP and non-DSRIP related increases in demand are expected to create a gap in staffing needs for these primary care / outpatient positions.

Community Health Workforce Gaps

Other workforce impacts expected to occur are for CHWs, which is expected to see an increase in demand by 7-8 FTEs. The current reported vacancy rate for CHWs is 23.3% that may suggest existing workforce shortages. As a result, project implementation will likely widen this gap.

J. Project 3.d.ii: Implementation of Guidelines for Asthma Management

By engaging providers, care managers, certified asthma educators (AE-Cs), behavioral health specialists, and pharmacists to implement evidence-based medicine guidelines, the project will improve asthma quality of life indicators by assuring appropriate diagnosis, classification of severity, prescription of controller medications, medication adherence, and self-management support and trigger control interventions. The PPS and the Asthma Coalition of the Capital Region (ACCR) will be responsible for achieving project goals by training primary care providers and staff on the "Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma" developed by the National Heart, Lung and Blood Institute. Staff training through the asthma educator program to become certified asthma educators will also be conducted.

The AMCH PPS will develop an asthma registry for care management support, medication adherence, health service utilization and to track project metrics across the system. The registry will also identify high-utilizers of ED and hospital services for referral for additional service interventions to decrease further use of those services.

The project will target the following groups: low income children and adults with diagnosed asthma residing in the AMCH PPS service area; low income children with asthma enrolled in

schools located in the AMCH PPS service area; patients with recent asthma related visits to an emergency department/urgent care/hospitalization; high-risk asthmatics as identified and referred by their primary care/specialist provider, managed care organization, health home and/or pharmacy; patients with poor medication adherence; and patients with current tobacco exposure, primary or secondary.

Using SPARCS data we estimate that the average length of stay for Medicaid beneficiaries hospitalized for an asthma-related reason is 2.3 days. *Exhibit 19* summarizes modeling results and projected target state impacts of this DSRIP clinical improvement project. By 2020 the net projected annual utilization impact associated with this DSRIP clinical initiative is the following:

- A reduction of 60 emergency visits
- 40 fewer inpatient days
- 780 fewer urgent (unscheduled) primary care visits

The projected workforce impact includes:

- Approximately 2 asthma health educators to provide services to 4,310 patients
- **In office/outpatient settings:** Very minimal change, with slight decreases in FTEs associated with providers in this setting
- **In the ED setting:** No substantial changes in demand for FTEs
- **In the inpatient setting:** No substantial changes in demand for FTEs

Exhibit 19: Asthma Management Projected Workforce Impacts (by FTE)

Workforce Impacts by Care Setting and Job	Total Workforce Impacts
Office/Outpatient	
Primary care providers	-0.5
Direct medical support	-1
Direct admin support	-0.5
Emergency Department	
Emergency physicians	0
Nurse practitioners & physician assistants	0
Registered nurses	0
Inpatient	
Hospitalists	0
Registered nurses	-0.5
Licensed practical nurses	0
Nurse aides/assistants	0
Asthma health educator	2

Patient Education Workforce Gaps

The results of the analysis suggest that this DSRIP initiative will have only a small effect on workforce numbers and mix providing direct medical care to this asthma population. The greatest impact projected to occur is an increased demand for Asthma health coaches for the provision of asthma self-management services. This increase in demand will likely be felt in DY2, assuming initial project implementation impacts, but will primarily increase starting in DY4 through DY5 as the PPS engages increasingly more Medicaid attributed lives in asthma

self-management services. Based on the current workforce state data, the PPS's network includes approximately 5 certified asthma educator FTEs with 1 vacancy reported for this position. Based on this reported data, workforce gaps for this position do not currently exist but as demands increase throughout the project's implementation, this may change as patients become actively engaged and asthma self-management service utilization increases.

K. Other DSRIP Projects where Workforce Impacts were Not Projected

a. Project 2.a.i: Creation of an Integrated Delivery System

In an effort to serve AMCH PPS's population through evidence-based coordinated care, AMCH PPS is implementing an Integrated Delivery System ("IDS") and transforming healthcare delivery through an organized and collaborative network of primary, behavioral, specialty, long-term and post-acute care providers as well as through social service and community-based providers.

A review of the literature on this topic suggests that better integration can allow some services currently performed by specialists to instead be performed by generalists, some services currently performed by physicians to instead be performed by non-physicians, and thus reduce duplication of tests.[7] For purposes of projecting target workforce needs, it was assumed that better integration of the delivery system does not have an independent effect on health workforce needs that have not already been addressed through other projects (other than the addition of Health Information Technology personnel to implement network integration). However, the IDS is necessary for the PPS's other DSRIP projects to be successful in identifying and risk stratifying patients to provide interventions, and coordinate and manage care for these patients. As previously noted, project integration results in economies of scale and efficient and effective utilization of the workforce.

b. Domain 4 Projects – Project 4.b.i and Project 4.b.ii

The analysis within the Target State Report does not separately model the two population-wide prevention projects. While Project 4.b.i is not explicitly modeled, the workforce impact of other transformation projects that are modeled (e.g., project 2.d.i – Implementation of patient activation activities, project 3.a.i – Integration of primary care and behavioral health, project 3.b.i – Evidence based strategies to improve CVD, project 3.d.iii - Implementation of guidelines for asthma management) will capture most of the workforce needs of this project and incorporate features to strengthen tobacco use cessation. AMCH PPS anticipates using

[7] Weiner, JP, Blumenthal, D, Yeh, S. The Impact of Health Information Technology and e-Health on the Future Demand for Physician Services. Health Affairs. November 2013. 32:11
http://www.michigan.gov/documents/mdch/The_Impact_of_Health_Information_Technology_and_e-Health_on_the_Future_Demand_for_Physician_Services_441001_7.pdf

tobacco educators for this project; however, this will be a small piece of the care management function and is not expected to require significant increase in providers.[8]

Project 4.b.ii aims to increase access to chronic disease preventive care and management. The project has not been modeled as it is not anticipated to have a significant workforce impact outside of the workforce impact that is projected as part of the Domain 2 and Domain 3 projects. Including explicit workforce projections for these two Domain 4 projects could result in a duplicative count.

c. Information Technology Workforce

It is estimated that there will be an increased need for IT staff as a result of implementing the DSRIP projects. The AMCH PMO, with the input from the Technology and Data Management committee, developed a survey to assess the current state of the IT landscape within the PPS which included EHR utilization, connectivity, hardware and software infrastructure, security safeguards, staffing expertise, and analytic capabilities. The survey outcomes are being used to drive the PPS's IT change management strategy. The PPS aims to increase the availability and access to clinical data and utilize the RHIO to promote and enhance connectivity across PPS practitioner organizations. The PPS will address the IT workforce needs as it implements its IT initiatives.

L. Other Identified Workforce Gaps

As detailed throughout the report, current workforce gaps exist within specific DOH job categories, based on the data reported by the PPS. The PPS's highest reported vacancy rates were identified for psychiatric nurse practitioners (31.9%), LPN care coordinators/case managers (29.6%), and CHWs (23.3%). It is worth noting, however, that these job titles all have fewer than 100 FTEs reported. Among job titles with at least 100 FTEs reported, the highest vacancy rates were identified for RN and NP care coordinators/case managers/care transitions (23.0%) and peer support workers (19.7%).

Other DOH job categories that are likely to be impacted as a result of DSRIP and non-DSRIP related factors include health educators and nursing. Similarly, these positions also reported above-average vacancy rates across the PPS. Further, as noted in the CNA, there is some concern over the lack of sufficient Behavioral Health professionals, as well as a growing need for CHWs and service navigators, as previously mentioned.

In addition to gaps in staffing, the PPS network will need to address existing cultural and linguistic barriers and health literacy gaps to appropriately transition the workforce. Although many organizations within the network offer services in languages other than English, 56% of mission statements do not incorporate the need for culturally competent and health literate service delivery.[9] Within the PPS structure, the Cultural Competency and Health Literacy

[8] PPS communication to IHS.
[9] AMCH PPS – CCHLC – Cultural Competency /Health Literacy Strategy

Committee (CCHLC) was formed to develop strategies for organizations to provide culturally competent care at a literacy level that patients can comprehend.

V. Conclusion

As detailed throughout the gap analysis, overall DSRIP project workforce impacts are projected to occur mainly for PCPs, MAs and administrative support staff, nurses and the care management workforce. However, in specific instances where high workforce vacancies are reported that already impact the PPS's provider community, the impacts of DSRIP projects can work to either minimize or increase gaps that currently exist within the PPS's workforce. Assuming that DSRIP projects are implemented successfully and that actively engaged goals are met, the AMCH PPS is likely to experience overall the greatest workforce impacts during DY4 of the DSRIP program.

As a result of the DSRIP projects within the primary care / outpatient settings, the PPS's workforce is anticipated to experience an increase in demand for PCPs as patients are redirected to seek care from providers outside of the ED setting due to combined impacts of the Medical Village project, Patient Activation project, and increased referrals through the co-location of primary care and behavioral health services. In addition to increasing the demand for PCPs, project impacts are estimated to result in the increase in demand for clinical and administrative support positions to support the projected increase in utilization of primary care and outpatient services.

For the anticipated project impacts of the co-location of primary care and behavioral health services, an increase in demand for behavioral health positions is projected, specifically for LCSWs, care managers, and administrative support. Similarly, the Crisis Stabilization Services project also anticipates a need for LCSWs and administrative support. Although there are no existing identified workforce gaps for these positions, the projected impacts of the aforementioned projects are likely to create new workforce gaps within the PPS.

Within the ED / inpatient settings, the PPS's workforce is anticipated to experience a decrease in demand for ED physicians as well as a decrease in demand for nursing positions including RNs, NPs, and nurse aides/assistants as DSRIP project impacts are potentially realized and patients seek care outside of the ED and inpatient settings. However, in certain instances, given the vacancy rates reported both across the PPS as well as in the ED / inpatient setting, the projected reduction in demand for nursing positions is likely to be offset by the existing reported gaps within the PPS's workforce.

Additionally, the AMCH PPS also anticipates a significant increase in utilization of community-based health care navigation services as a result of the PPS's implementation of projects to redirect care. As a result, workforce demands for patient navigators, CHWs, and care coordinators are projected to increase. In addition, given the anticipated increase in utilization of patient navigation services and the significant vacancy rate reported for these positions currently, the existing gap for care management/care coordination staff is likely to increase as the AMCH PPS successfully implements the DSRIP projects proposed above.

VI. Appendix

Exhibit A-1: Demographics by Job Type

Job Type	Number of Orgs	Number of CBAs	Number of FTEs	Number of Vacancies	Vacancy Rate
Administrative Staff/ Human Resources					
Human Resources Staff (Managers and Human Resource Assistants) (9535)	36	4	128	6	4.7%
Office Clerks (9550)	36	10	285	13	4.6%
Patient Service Representatives (9555)	18	1	119	3	2.5%
Secretaries and Administrative Assistants (9560)	51	7	731	36	4.9%
Care Management/ Care Coordination					
Care Manager / Coordinator (2005)	31	7	217	9	4.1%
Care or Patient Navigator (2010)	5	0	21	1	4.8%
RN and NP Care Coordinators/Case Managers/Care Transitions (2015)	13	2	100	23	23.0%
LPN Care Coordinators/Case Managers (2020)	3	2	27	8	29.6%
Social Worker Care Coordinators/Case Managers/Care Transition (2025)	18	7	120	11	9.2%
Community Health Worker (2030)	7	3	30	7	23.3%
Health Coach (9015)	2	0	5	0	0.0%
Educators					
Certified Asthma Educators (9005)	1	1	1	0	0.0%
Certified Diabetes Educators (9010)	3	0	11	0	0.0%
Health Educators (9020)	12	2	60	7	11.7%
Health Coach (9015)	2	0	5	0	0.0%
Executives					
Executive Staff (CEOs and General / Operations Managers) (9515)	55	3	285	6	2.1%
Finance					
Coders / Billers (9505)	29	9	213	31	14.6%
Financial Services Representatives (9520)	5	0	20	0	0.0%
Financial Staff (Managers and Clerks) (9525)	49	10	682	43	6.3%

Job Type	Number of Orgs	Number of CBAs	Number of FTEs	Number of Vacancies	Vacancy Rate
Information Systems					
Computer Hardware Maintenance (8005)	18	0	45	2	4.5%
Computer Technical Support (8010)	20	0	48	3	6.3%
Health Information Technology Managers (8015)	12	1	17	1	5.9%
Software Programmers and Developers (8020)	4	0	18	1	5.6%
Licensed Practical Nurses					
Licensed Practical Nurse (LPNs) (4035)	30	7	654	31	4.7%
LPN Care Coordinators/Case Managers (2020)	3	2	27	8	29.6%
Non-Licensed Nursing/ Aides/ Assistants					
Medical Assistants (3010)	10	2	199	9	4.5%
Nursing Aides / Assistants (3015)	9	3	1,263	121	9.6%
Psychiatric Aides / Technicians (1025)	7	3	235	29	12.3%
Social and Human Service Assistants (2040)	9	2	215	12	5.6%
Patient Care Technicians (3020)	4	1	846	40	4.8%
Certified Home Health Aides (6005)	5	1	954	29	3.0%
Personal Care Aides (6010)	11	0	2,246	186	8.3%
Peer Support Worker (2035)	15	2	122	24	19.7%
Medical Interpreters (9545)	2	0	33	0	0.0%
Nurse Practitioners					
Nurse Practitioners in Primary Care (4005)	11	2	74	3	4.1%
Nurse Practitioners in Other Specialties (except Psychiatric NPs) (4010)	13	0	152	19	12.2%
Psychiatric Nurse Practitioners (1015)	7	1	19	6	31.9%
Other Ancillary Providers Requiring License/ Certificate					
Clinical Laboratory Technologists and Technicians (3005)	7	1	253	24	9.4%
Nutritionists / Dieticians (7005)	17	3	61	2	3.3%
Occupational Therapists (7010)	15	2	70	5	7.1%
Occupational Therapy Assistants / Aides (7015)	11	2	29	2	6.9%
Physical Therapists (7030)	12	2	110	9	8.2%
Physical Therapy Assistants / Aides (7035)	10	2	38	2	5.3%

Job Type	Number of Orgs	Number of CBAs	Number of FTEs	Number of Vacancies	Vacancy Rate
Respiratory Therapists (7040)	5	2	127	6	4.7%
Speech Language Pathologists (7045)	11	1	52	2	3.8%
Medical Interpreters (9545)	2	0	33	0	0.0%
Other Support Staff					
Housekeeping Managers (9530)	12	2	36	1	2.8%
Janitors and Cleaners (9540)	30	6	536	36	6.7%
Dietary/Food Service Managers (9510)	15	2	30	3	10.0%
Pharmacology					
Pharmacists (7020)	10	2	111	5	4.5%
Pharmacy Technicians (7025)	5	2	88	3	3.0%
Physicians					
Psychiatrists (1005)	13	1	71	11	14.8%
Primary Care Physicians (5005)	18	3	187	6	3.2%
Other Physician Specialties (except Psychiatrists) (5010)	11	0	591	9	1.5%
Physician Assistants					
Physician Assistants in Primary Care (5015)	7	0	62	6	9.7%
Physician Assistants in Other Specialties (5020)	8	0	138	9	6.5%
Primary Care					
Nurse Practitioners in Primary Care (4005)	11	2	74	3	4.1%
Primary Care Physicians (5005)	18	3	187	6	3.2%
Physician Assistants in Primary Care (5015)	7	0	62	6	9.7%
Psychiatry					
Psychiatrists (1005)	13	1	71	11	14.8%
Psychologists (1010)	8	2	45	6	13.3%
Psychiatric Nurse Practitioners (1015)	7	1	19	6	31.9%
Other Mental Health / Substance Abuse Titles Requiring Certification (1020)	19	3	233	10	4.3%
Psychiatric Aides / Technicians (1025)	7	3	235	29	12.3%
Substance Abuse and Behavioral Disorder Counselors (1030)	19	5	160	10	6.3%

Job Type	Number of Orgs	Number of CBAs	Number of FTEs	Number of Vacancies	Vacancy Rate
Registered Nurses			**3,708**	**250**	**6.74%**
Care Manager / Coordinator (2005)	31	7	217	9	4.1%
Care or Patient Navigator (2010)	5	0	21	1	4.8%
RN and NP Care Coordinators/Case Managers/Care Transitions (2015)	13	2	100	23	23.0%
Staff Registered Nurses (4015)	37	8	2,866	196	6.8%
Other Registered Nurses (Utilization Review, Staff Development, etc.) (4020)	14	2	148	6	4.1%
Nurse Midwives (4025)	4	0	12	0	0.0%
Nurse Managers / Supervisors (4030)	26	4	344	15	4.4%
Social Work					
Social Worker Care Coordinators/Case Managers/Care Transition (2025)	18	7	120	11	9.2%
Master's Social Worker (MSW) (2055)	17	1	93	7	7.3%
Bachelor's Social Work (BSW) (2060)	8	0	34	0	0.0%
Licensed Clinical Social Workers (LCSW) (2045)	23	4	122	5	4.1%
Substance Abuse and Mental Health					
Other Mental Health / Substance Abuse Titles Requiring Certification (1020)	19	3	233	10	4.3%
Substance Abuse and Behavioral Disorder Counselors (1030)	19	5	160	10	6.3%

Note: Redundancies between job types anticipated

Exhibit A-2: Average Vacancy Rates by Organization Type

Organization Type	Number FTEs	Number Vacancies	Avg. Vacancy Rate
All Facilities	17,214.5	1,142.1	7.54%
Clinics (OPWDD) (Article 16)	724	63	8.70%
Diagnostic and Treatment Centers (Article 28)	174.8	15	8.58%
Home Care Agency	3117	179	5.74%
Hospital Inpatient	5941	395.7	6.66%
Hospital Outpatient Clinics (Article 28)	989	78	7.89%
Non-licensed Community Based Organization (CBO)	1,139.5	109	9.57%
Nursing Home/SNF	1039	115.5	11.12%
Other Type (select only if no other types apply)	856	62.5	7.30%
Outpatient Behavioral Health (Article 31 & Article 32)	425.3	27	6.35%
Private Provider Practice	2,808.9	97.4	3.47%