

# REPORT

VOLUME I: TECHNICAL REPORT

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## **Evaluation of Health Care Innovation Awards (HCIA): Primary Care Redesign Programs First Annual Report**

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## **GLOSSARY**

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<b>Awardee Name</b>	<b>Abbreviation</b>
Atlantic General Hospital	AGH
CareFirst Blue Cross Blue Shield	CareFirst
Cooper University Hospital and Camden Coalition of Health Care Providers	CUH
Denver Health and Hospital Authority	Denver Health
Finger Lakes Health Systems Agency	FLHSA
Foundation for California Community Colleges and the Transitions Clinic Network	TCN
Pacific Business Group on Health	PBGH
PeaceHealth Ketchikan Medical Center	PeaceHealth
Research Institute at Nationwide Children's Hospital	NCH
Rutgers Center for State Health Policy	CSHP
Sanford Health	Sanford Health
TransforMED	TransforMED
University Hospitals of Cleveland Rainbow Babies and Children's Hospital	UHC
Wyoming Institute of Population Health, a division of Cheyenne Regional Medical Center	WIPH

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## EXECUTIVE SUMMARY

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### I. Introduction

In July 2012, the Center for Medicare & Medicaid Innovation (CMMI) awarded cooperative agreements to a select group of programs proposing innovative ways to improve the quality and lower the cost of care for Medicare, Medicaid, and Children’s Health Insurance Program (CHIP) enrollees. This initiative, the Health Care Innovation Awards (HCIA), is a central part of CMMI’s overall objective of finding effective and efficient ways to achieve better quality of care, improved population health, and lower costs. The initiative also seeks to increase and improve the performance of the health care workforce through enhanced training and education, as well as to rethink the roles and functions of different types of health care workers. CMMI subsequently classified 14 of the 107 HCIA awards as primary care redesign (PCR) programs, representing a broad range of intervention models, target populations, and organizational settings. These PCR programs are as follows:

- Atlantic General Hospital
- CareFirst Blue Cross Blue Shield
- Cooper University Hospital and Camden Coalition of Health Care Providers
- Denver Health and Hospital Authority
- Finger Lakes Health Systems Agency
- Foundation for California Community Colleges and the Transitions Clinic Network
- Pacific Business Group on Health
- PeaceHealth Ketchikan Medical Center
- Research Institute at Nationwide Children’s Hospital
- Rutgers Center for State Health Policy
- Sanford Health
- TransforMED
- University Hospitals of Cleveland Rainbow Babies and Children’s Hospital
- Wyoming Institute for Population Health, a division of Cheyenne Regional Medical Center

CMMI selected Mathematica Policy Research to evaluate these PCR programs. The evaluation will assess whether and how the 14 programs are redesigning primary care practices and improving the coordination, efficiency, and quality of patients’ care. This is the first of three planned annual reports on the PCR programs. It has two primary purposes: (1) to summarize the implementation experiences and effectiveness of the 14 HCIA programs, identifying the barriers and facilitators encountered during program implementation and using those factors to assess the effectiveness of program implementation at each site; and (2) to synthesize key findings across awardees, focusing on providing CMMI with insight on the primary determinants of implementation effectiveness. This first report contains no impact or survey findings; we will

begin reporting on those findings in the second annual report. In addition, we will continue reporting on quantitative findings in the quarterly reports.

## **II. Methods and limitations**

The information presented in this report is based on a qualitative analysis of the implementation experiences and effectiveness of the 14 PCR programs two years into their three-year award period, with exceptions, using the Consolidated Framework for Implementation Research (CFIR) framework. The CFIR methodology uses a core set of constructs based on a comprehensive and systematic review of the implementation science literature. It provides a conceptual framework and a consistent typology, terminology, and set of definitions that can be used to assess which implementation is effective in a specific context and setting.

We based our analysis on information collected through telephone interviews with program administrators, in-person interviews with clinic administrators and frontline staff at two to four sites from each award, and a review of quarterly program reports collected by HCIA's monitoring contractor. We purposively selected the sites to visit in an effort to obtain a range of perspectives, to cover as many components of each innovation as possible, and to minimize travel time and expense. The site visits lasted about four days on average and were conducted from April to June 2014.

Because we visited only a small number of sites and spoke only with selected staff at those sites, our findings might not be generalizable to all practices and providers engaged in the HCIA-funded transformation process for PCR awardees. In addition, although we asked respondents to describe the perceived effect of the innovation on providers' practice and patients' health, the purpose of the qualitative analysis was to evaluate implementation effectiveness. Any findings in this report related to patients' effects are only suggestive of the perceptions of those we interviewed for this study. Future reports will include results from the quantitative analysis of patient outcomes.

Based on the CFIR framework, we organized our analysis around three key domains that the literature has shown to be important determinants of implementation effectiveness (Damschroder et al. 2009). These domains include (1) the underlying design features or characteristics of the program (Section A), the facilitators and barriers commonly encountered during the implementation process (Section B), and (3) the internal and external environmental factors that can influence implementation effectiveness (Section C). Given the importance of the primary care workforce to practice transformation, we also included a set of findings related to workforce development and training (Section D).

For the purposes of our analysis, implementation effectiveness was measured mainly by the timeliness with which the core components of each program were implemented and the degree to which the direct or indirect enrollment targets were met. Other CFIR-based implementation outcome measures were either less relevant for a federal initiative based on the principle of innovation (such as fidelity and dosage) or will be considered in greater depth at the end of program funding (such as sustainability and replicability).

### III. Findings

Table ES.1 presents the factors in each domain that our analysis indicated are the most closely associated with implementation effectiveness. We identified these factors by coding each program individually, and then aggregating the individually identified constructs across the 14 awardees. Although the table summarizes the most commonly cited facilitators and barriers to implementation effectiveness, these factors do not apply to all programs and should not be considered an exhaustive list of individual awardee experiences. (Information on the relevant facilitators and barriers to implementation effectiveness at the program level is available in the individual awardee summaries in Section II.B of this report.) We briefly discuss each factor by domain, as well as the special workforce issues, in the following section.

**Table ES.1. Summary of key determinants of PCR implementation success**

Domain	Factor	Description of factor
Design factors	Adaptability	The program can be adapted or tailored to meet the needs of the program
	User control	Frontline staff are empowered to address implementation challenges on their own and modify how program components are applied in practice
	Perceived relative advantage	Stakeholders perceive advantages of implementing the program versus an alternate solution or the standard delivery of care
Implementation factors	Staff engagement	Involves attracting and including appropriate people in the implementation and use of the intervention
	Stakeholder engagement	Involves attracting people not directly staffed on the program, but important for successful program implementation
	Program resources	The extent to which resources are dedicated to implementing the innovation; includes physical space and equipment, health information technology (IT), general IT, and staff time
	Self-monitoring	Reflecting and evaluating using quantitative and qualitative feedback about the progress and quality of the implementation
Environmental factors	Leadership	The extent to which organization and practice leaders who are not directing the program affect implementation through support and leadership style
	Prior experience	Practices' and organizations' experiences with similar interventions within the setting or with the target population
	Patients' needs and resources	The extent to which the needs and preferences of the target patient population affect implementation
	Payment system	The extent to which external payment models from private and public payers affect implementation

Sources: Review of program documents and interviews with program administrators, May 2014.

#### A. Key design features associated with successful PCR programs

The underlying design characteristics of a program and its individual components are a critical determinant of implementation effectiveness, as they can facilitate or challenge program implementation. Three common design factors emerged as important drivers of implementation effectiveness: (1) adaptability of the programs to overcome implementation challenges, (2) control given to frontline staff during implementation to maximize program effectiveness, and (3) perceived relative advantage of the programs compared with the standard delivery of care.

**1. The adaptability of program components of the PCR intervention to the local context was critical to overcoming implementation challenges and maximizing implementation effectiveness.**

Because awardees were encouraged to innovate and refine their programs to increase implementation effectiveness, program adaptations were common across all awardees. First, several awardees adapted programs to broaden their reach by either expanding the disease categories that were eligible for enrollment or narrowing the eligibility criteria and referral sources to enroll only those patients who would benefit the most from intervention services. Second, program administrators also adapted their interventions to better meet the needs of their participants after enrollment. Several programs extended the duration of their intervention episode to prepare patients for successful transitions out of the program and to increase patients' ability to self-manage their conditions.

Third, program administrators adapted their programs to align the intervention services with their organizational structures and staffing needs. For example, before implementing the intervention, one awardee site already had a program that served formerly incarcerated patients. Rather than dedicating clinic hours to providing transitional care to this patient population, as stipulated in the program guidelines, the site decided to provide transitional care as part of its existing integrated program.

Finally, adaptations to program staff roles also facilitated implementation effectiveness. For example, one awardee developed the role of a regional integrator to promote practice transformation in its participating sites. The regional integrators are responsible for identifying a core team in each site and serving as liaisons between the program administrators and the core team to incorporate new program workflows into individual practices. Program administrators for another award also created the role of panel managers to assume responsibility for organizing data and developing reports. The shift in duties enabled health coaches to work closer to the top of their licensure.

**2. Giving frontline staff control over how they implement the intervention to meet the needs of individual patients, define staff roles and practice workflows, and address implementation challenges was an important facilitator in implementing PCR programs.**

Giving frontline staff the freedom to decide how to implement the intervention protocols to meet their patients' diverse needs was important for successful implementation of PCR programs. First, several programs reported matching staff skills to the specific needs of individual patients. Frontline staff from several programs described working with certain types of patients based on staff members' levels of experience addressing the patient's individual needs, such as cultural expectations or the need for social services. They reported that being familiar with their patients' life experiences helped them engage their patients and provide more effective care, improve the quality of care, and achieve better health outcomes.

Second, frontline staff also had the freedom to modify the intensity or duration of care to meet the needs of individual patients. For example, frontline staff from two programs were empowered to test alternative appointment times, follow-up modes, and schedules to meet the needs of individual patients. Another program allowed its frontline staff to amend individual care

plans to accommodate changes in patients' circumstances and goals. Staff believed this flexibility enabled them to engage patients and help them make progress on their stated goals. Finally, several program administrators gave frontline staff the freedom to prioritize implementation activities based on the characteristics of their practices. For example, frontline staff from one clinic were able to adjust program workflows to align with their clinic's physical layout, staffing schedules, and personnel resources. Frontline staff in another program described working together to decide how to organize and share clinical responsibilities.

### **3. The perceived relative advantage of PCR models over traditional delivery systems for primary care was a critical determinant for overcoming frontline staff's resistance to adopting new practices and increasing their motivation for program implementation.**

Respondents at all levels perceived their respective programs to have advantages over the traditional delivery of care for two main reasons. First, respondents believed the programs to have a relative advantage over traditional care because previously unmet needs of patients were now being met, specifically among high-risk patients. Respondents described the advantages of implementing a staffing structure that enabled support staff (such as care coordinators, social workers, and community health workers) to provide care that was more patient-centered than the standard delivery model; the new model of care is advantageous because support staff are able to develop relationships with patients, build trust between patients and clinicians, and understand and meet individual patients' needs. Respondents also perceived advantages in providing patients with a single point of contact to assist them in understanding their medical conditions, medications, appointments, discharge instructions, community resources, and social supports. For example, support staff said they were able to empower their patients to proactively engage with their providers rather than passively accept the information they received, as was previously done.

Second, frontline staff described the relative advantage of PCR programs over traditional care models because of the increased efficiency of patients' visits. Checking in with patients between appointments, sharing information with them, and helping them address issues that do not require provider involvement—such as medication management or patient education—were perceived as advantages for patients. According to frontline staff, PCR programs were advantageous because they reminded patients about services they need, such as laboratory or diagnostic tests, which staff did not do before implementing the program.

## **B. Process-related factors that were important drivers of implementation effectiveness**

The way in which a primary care innovation was implemented was an important determinant of program success. Four common implementation process-related factors were (1) engaging program personnel to promote staff buy-in, (2) engaging community stakeholders to expand and coordinate services and increase program enrollment, (3) ensuring that the program has sufficient resources to achieve its goals, and (4) collecting and analyzing data to refine operational plans.

### **1. Engaging and obtaining buy-in from clinicians and other frontline clinical and nonclinical staff were critical to effective program implementation.**

Many program administrators acknowledged that it takes time to develop trust among frontline staff and to ensure that providers have a strong understanding of the intervention model. Administrators stated that an understanding of the intervention and trusting the care team made

clinicians more comfortable referring their patients to care coordinators and care managers. Program administrators used four main strategies to foster staff buy-in. First, most programs integrated care coordinators and other support staff into existing clinical care teams so that providers became familiar with the services they offered and viewed them as part of the clinical team. When care managers were integrated into the clinical team and able to establish trust with physicians by providing high quality care to their patients, physicians were more willing to refer patients to the program. Second, several programs educated clinicians by providing written materials to providers and attending staff meetings to clarify the role of care coordinators, emphasizing how they can reduce burden and improve patients' care. Third, a few programs used incentives to motivate staff, such as a care manager at one site who implemented a gift card drawing to improve attendance at team huddles. Fourth, several programs engaged staff through trainings. For example, one awardee used most of its HCIA funds to develop a series of program-related trainings, which staff at all levels were required to attend, to promote understanding and buy-in.

**2. PCR programs often collaborated with community stakeholders to increase intervention awareness, augment patient referrals, and improve access to and coordination of community-based services; to facilitate stakeholder engagement, programs used ongoing communication, data-sharing, and outreach strategies.**

Transforming the primary care delivery system was difficult to achieve without the support and partnership of stakeholders across the health care spectrum, including hospitals, post-acute care facilities, social service organizations, primary care offices, and other community-based organizations. Programs fostered relationships with external stakeholders to ensure they were aware of the intervention services and willing to refer their eligible patients to the program. Care coordinators also communicated with community organizations to coordinate services for their patients. For example, staff leveraged their relationships in the community to obtain services—such as housing referrals, social services, specialist appointments, or durable medical equipment—more quickly than they otherwise would have, thereby increasing participants' access to needed services.

Programs have used several strategies to engage community stakeholders, each of which stressed constant communication with external partners. Several programs conducted outreach activities to engage external stakeholders. For example, staff hosted an in-person open house every other month for people in the community to learn more about their program. One awardee employed concurrent strategies to engage a broad group of stakeholders, including meetings with program administrators, direct practice facilitation, a quality- and process-based incentive plan, provider advisory group meetings, and continuing medical education events. Another awardee also used its health information exchange as a way to build and strengthen collaborations with community-based providers, sharing data with local hospitals, post-acute care facilities, and primary care offices to engage them and boost their patient identification and enrollment processes.



**3. Successful PCR programs invested significant resources in several key areas for effective program implementation, most notably, the hiring of new staff to provide or expand care management and care coordination services.**

All programs dedicated resources to hire additional staff to coordinate and manage patients' care, supporting primary care clinicians who otherwise would not have time to perform these activities. Investment of program resources in hiring new staff was particularly important under a fee-for-service (FFS) payment system in which care management and care coordination activities have historically not been reimbursable. Most programs have hired new support staff to address patients' psychosocial needs and nonmedical barriers to care so providers can more appropriately focus on delivering clinical care. One administrator noted that additional staff enabled the program to expand its office hours, increasing access to care.

Awardees also used program funding to provide physical space for care coordinators, administrative assistance, and training materials and support. Several programs used funds to provide nearby offices for care coordinators, which helped to promote integration and communication among staff. In addition, programs dedicated resources to administrative support, such as clerical tasks and grants management. Finally, most programs used a significant proportion of their HCIA resources to fund training programs. For example, one awardee used the award funds to develop and purchase training curricula and compensate staff for time spent in training. Administrators noted that it was particularly important to dedicate resources to compensate clinicians for time spent in training or other implementation activities in a busy FFS environment. They also used resources to fully or partially fund team members' salaries and to purchase software to produce special case-monitoring reports.

**4. The internal collection and analysis of data to monitor and evaluate program performance improved program operations and facilitated the communication of progress toward meeting program goals among staff and stakeholders.**

Several awardees integrated self-monitoring data into their ongoing program operations, providing performance feedback on a regular basis and adjusting their operational plans or intervention models as needed. Awardees collected a range of quality-of-care process and outcome measures, including patient enrollment, hospitalization admissions and readmissions, emergency department visits, total costs, and number of care team hours spent treating patients. A few programs also created dashboards to track performance metrics and provide formative feedback to practice administrators and frontline staff for ongoing program improvement. One awardee's dashboard, for example, indicated whether families scheduled and attended their follow-up appointments.

To address the challenges of incorporating data into primary care settings, several programs allocated a portion of their HCIA funds to train staff to use the new data systems, emphasizing the importance of incorporating data into program implementation. For example, staff at one clinic said they were initially unfamiliar with their online data platform and needed additional training to collect data correctly. Several program administrators also noted the importance of understanding the reason for collecting data for ongoing performance improvements and receiving complete and accurate information. Program administrators explained that, because data have not traditionally been used to monitor clinical care, frontline staff benefitted from

developing an understanding and appreciation of the need for self-monitoring data to inform program implementation and progress.

### **C. Common environmental factors that can facilitate or impede implementation effectiveness**

The characteristics of the organization implementing a program and the features of the environmental context within which an organization operates can also facilitate or impede program implementation. Although programs might have limited influence in the short run on the environmental factors that are internal and external to their organization, program administrators and staff can take steps to maximize the facilitators and minimize the barriers presented by environmental factors. The relevant environmental factors are also important for policymakers to understand when thinking about expansion. Four common environmental factors influencing program implementation were (1) leadership of practice and organization administrators, (2) prior experience implementing similar interventions, (3) needs of patients with complex conditions and limited patient and community resources, and (4) external payment models.

#### **1. Active support and commitment from practice, organization, and corporate leaders was critical to implementing practice transformation.**

The levels of engagement and active support from practice and organization leaders were key drivers to the implementation of PCR programs. For programs that engage primary care practices directly, the engagement of a leader within the practice was important for obtaining buy-in from providers and staff. For instance, practice leaders at several programs motivated primary care physicians to increase their engagement with the care planning process.

Leadership style also played a key role in provider and staff engagement. Effective leadership in practice transformation often entailed soliciting and being receptive to feedback from frontline staff or program administrators, enabling frontline staff to be innovative and to tailor the intervention protocols to the needs of their patients, and displaying a clear and consistent commitment to improving the care of target populations. For example, in one program, practice administrators described their organizations as innovative and their leadership as willing to take risks to improve patients' care. Similarly, hospital executives in another program were willing to allow trial and error in the program and aided implementation by prioritizing program needs, such as modifications to the hospital's electronic health record (EHR) system. Program administrators fostered support from hospital executives by explaining the need to make improvements based on data and by having project goals that aligned with the hospital's financial incentives.

#### **2. Programs increased the likelihood of implementation success by replicating similar or related work.**

Several awardees implemented expansions of existing small-scale or pilot versions of their programs, which enabled them to build on the experiences of staff and the existing infrastructure. For example, several awardees had prior experience implementing medical homes in a few practices or for patients with less complex needs. This experience enabled the awardees to refine existing care processes (such as risk stratification) and add new services that were found to be important but not included in their prior interventions (such as transitional care and health

coaches). Another awardee had experience implementing two of its program components, but program administrators used these early experiences to build a broader program for primary care quality improvement and cost reduction. Programs also used experienced practices or organizations as mentors for less experienced practices or organizations. For example, one awardee already led a large pediatric accountable care organization (ACO); through its HCIA award, it mentored another children's hospital in the development of its own ACO.

**3. The complex and often unexpected medical, mental health, and social service needs of many targeted high-risk populations can facilitate or impede program implementation and required program administrators and staff to frequently adapt program processes and reevaluate program goals.**

Many awardees created their programs specifically to address the complex medical and social needs of their target populations. For example, one program targeted people recently released from prison, several programs included many patients in rural and frontier areas, and one program targeted publicly insured children with complex needs such as severe mental illness. Nonetheless, many programs were required to adapt their interventions to meet their patients' unexpected and evolving health care and social service needs. For example, in two programs, the development of care plans for enrollees took more time than program leaders expected due to the complexity of their patients' needs. Program administrators responded by revising enrollment goals and evaluating the level and skill mix of care coordination staff required to meet the identified needs. Many programs struggled with limited community resources to address the social needs of their enrollees, such as unstable housing, lack of transportation, immigration status, and remote location. These programs used a variety of strategies to address these challenges, including embedding social workers in primary care settings and on care coordination teams, using community health workers and trained peers familiar with community resources, and providing care through telehealth services.

**4. The recent shift in health care payment systems and incentives away from FFS and in favor of value-based purchasing among public and private payers created new opportunities to support and sustain many common practice transformation strategies.**

The traditional FFS payment system generally does not reimburse for the innovative care delivery services being implemented by awardees, such as multidisciplinary care management and coordination teams, community health workers, care navigators and coaches, and telehealth. However, local, state, and federal policy changes have begun to change the payment environment for the core components of primary care transformation. For example, the Centers for Medicare & Medicaid Services (CMS) recently announced that, starting in January 2015, Medicare will begin paying physicians a monthly fee to coordinate the care of beneficiaries with two or more chronic conditions (CMS 2013). CMS also authorized state Medicaid agencies to reimburse services from community health workers (U.S. Congress 2013) and several state Medicaid agencies have authorized payment for telehealth services (National Conference of State Legislatures 2014).

In newer models of payment, private and public payers have enhanced payments to practices that achieved PCMH recognition. Several programs aligned with or directly developed ACOs that supported services through capitated or shared-savings arrangements. For example, one state recently began including a special payment for care coordination in its capitated payments to

Medicaid managed care organizations. The Medicaid ACO for children led by one awardee was able to negotiate with managed care organizations to pass on those payments to support the care coordination interventions developed in its HCIA program. Two other awardees anticipated support for their programs through the state's move to an all-payer global payment model for hospitals. Many program administrators reported that the anticipated adoption of value-based purchasing as the dominant payment model in the near future motivated them to take on the challenges of transforming the delivery of primary care.

#### **D. The special role of workforce development in primary care transformation**

Implementing an innovative approach to primary care required developing an organization's workforce to effectively execute new tasks and workflows. Developing the workforce to transform primary care included (1) creating new positions and redefining existing ones, (2) recruiting and retaining appropriate staff, and (3) training staff to deliver care in new ways.

##### **1. Introducing or enhancing team-based primary care often involved creating new positions and redefining existing ones to fill new roles tailored to the provision of comprehensive and patient-centered care.**

All awardees incorporated new positions and roles not commonly used in traditional primary care settings. These new positions included care managers, care coordinators, community health workers, health coaches, panel managers, patient navigators, and transitional care specialists, among others. However, there was tremendous variation in how clinics defined these new positions, and responsibilities can overlap across multiple positions. One awardee hired care coordinators and gave them responsibility for transitional assistance, disease management, and chart review, effectively collapsing care coordination, care management, transitional care, and panel management into one position. Nurses and social workers commonly assumed the duties associated with care coordination, care management, health coaching, and transitional care. Clinics generally assigned nonclinical duties associated with panel management to medical assistants, and lay people frequently served as community health workers and peer navigators.

In addition to these new support roles, many programs incorporated specialists into the primary care teams, particularly behavioral health providers, pharmacists, dietitians, and diabetes educators. One program added behavioral health triage therapists to follow up and assist patients who exhibited mental health problems during their medical appointments and to provide ongoing help addressing their mental health needs or referrals to specialists. Another program added clinical pharmacists to its primary care teams to offer medication management therapy and care coordination to high-risk patients.

##### **2. Staff recruitment and retention emerged as an important challenge to primary care transformation, requiring sites to adopt workforce policies to facilitate hiring of appropriate staff and reduce staff burnout.**

Placing the right people in the right positions was critical to successful implementation, but proved difficult to achieve before positions were fully defined and integrated into care teams, or as the intervention was modified. Awardees commonly changed descriptions of positions, facilitated teamwork and communication, and identified appropriate leadership for new roles after implementing the staffing change. One awardee created a panel manager position after realizing that existing clinical staff lacked the research skills and motivation to complete panel

management tasks. Another awardee reassigned chart review duties from care coordinators to medical assistants in an effort to increase efficiency. Staff retention was also a major challenge. A certain amount of churning was common in specific positions, such as nurses who had the option of working in different clinical settings.

Burnout was also a common challenge in primary care, stemming from long hours, the stressful nature of clinical work, and the pressure of having to address the complex needs of some patients. Inadequately staffed programs can result in staff working long hours with few days off. For example, one transitional care program required an on-site nurse to be available seven days per week to follow up with patients within 48 hours of discharge. Because transitional care coordinators were allocated based on patient discharge volume, programs serving rural communities often had only one transitional care coordinator, creating challenges for recruitment and retention. However, even with policies ensuring staff were not overworked, burnout remained a risk. Patient-centered primary care attracted people who are highly invested in patients, and patients with complex conditions often required extended help.

To combat burnout, several programs conducted morale-boosting activities, such as luncheons, retreats, or early Friday closures. Other awardees incorporated work/life balance issues into trainings and supervision. Opportunities to debrief with supervisors and other team members also helped staff cope with work-related stress. Managers of a program serving homeless people explained that they employed a trauma-informed care model, which used a help-for-the-helper approach and built self-care into the care process, to address work-related stress.

### **3. Training was the main facilitator to workforce development, but it was challenging to enhance staff skills with minimal workday disruption; to do so required employing multiple training modalities with applicable content targeted to different types of staff.**

Every PCR program had a major training component and executed it using a variety of modalities, including instructor-led classes, online courses, video conferences, webinars, in-service presentations, and learning collaboratives. Scheduled staff and departmental meetings also offered a convenient time for many awardees to train and develop their staff. Although the approach to training varied among awardees, training tended to proceed from general to specific content. Programs often started at a high level, introducing the new approach to care and the purpose of the transformation. Providing the overview and context was critical to obtaining buy-in and understanding the purpose of new roles and responsibilities, but staff quickly expressed interest in receiving more applied training to help with specific goals and challenges, an especially common experience with learning collaboratives.

Although collaboratives offered a valuable opportunity for staff to meet across clinics and organizations and share ideas and experiences, the challenge was ensuring that staff were able to learn practical and usable skills relevant to their workflows. For example, clinics with similar EHR systems benefitted from meeting to discuss specific challenges with their platforms, and groups serving similar populations appreciated having breakout sessions to discuss effective care management.

Three subjects emerged as particularly important to workforce development. First, most awardees trained staff in motivational interviewing. Motivational interviewing is a way of

engaging patients that is collaborative and facilitates self-management of health conditions, goal-setting and achievement, and healthy behaviors. Respondents uniformly offered praise for this technique, reporting that it helped staff develop rapport with patients and facilitated their ability to work with patients to achieve better outcomes. Second, most awardees provided health information technology (IT) training as well. Common health IT tasks included pre-appointment planning, population management, and quality reporting. Finally, most awardees offered training in care management, which consisted of reviewing protocols for identifying and enrolling patients, developing care plans for patients with chronic diseases, performing medication reconciliation, and working with patients to make healthy lifestyle changes. Care management training could include motivational interviewing, health IT, transition assistance, and communication with physicians. Learning collaboratives were a common setting for care management training, enabling care managers within and across organizations to learn from one another.

#### **IV. Next steps for the evaluation of the PCR programs**

We have developed a comprehensive understanding of the strategies the programs are using to redesign primary care and some of the common barriers and facilitators to implementation effectiveness through this first-year assessment. However, we cannot yet identify the most promising program components for transforming care and improving patient outcomes, which is CMMI's ultimate goal for this evaluation for two reasons. First, we are currently in the early stages of collecting and analyzing data for the impact evaluation. Second, we just began collecting data for the first round of a primary care clinician survey, which aims to understand clinicians' perceptions about effectiveness of the PCR interventions through a survey of physicians, nurse practitioners, and physicians assistants participating in practices or other organizations that are part of the PCR initiative at two distinct times (September 2014 and April 2015). A second survey of personnel who participated in the awardee training programs, expected to be fielded in spring 2015, will focus on experiences with training, effectiveness of training, and job satisfaction. Combined with a second round of qualitative data collection in early 2015, these will enable us to assess which factors, if any, are likely contributing to program impacts in the second annual report, due in the summer of 2015, and expanded in the final annual report in August 2016.

## I. INTRODUCTION

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### A. Introduction

In July 2012, the Center for Medicare & Medicaid Innovation (CMMI) awarded cooperative agreements to a select group of programs proposing innovative ways to improve the quality and lower the cost of care for Medicare, Medicaid, and Children’s Health Insurance Program (CHIP) enrollees. This initiative, the Health Care Innovation Awards (HCIA), is a central part of CMMI’s overall objective of finding effective and efficient ways to achieve better quality of care, improved population health, and lower costs. The initiative also seeks to increase and improve the performance of the health care workforce through enhanced training and education, as well as to rethink the roles and functions of different types of health care workers. CMMI subsequently classified 14 of the 107 HCIA awards as primary care redesign (PCR) programs, representing a broad range of intervention models, target populations, and organizational settings.

CMMI selected Mathematica Policy Research to evaluate these PCR programs.<sup>1</sup> The evaluation will assess whether and how the 14 programs are redesigning primary care practices and improving the coordination, efficiency, and quality of patients’ care. To that end, evaluators will pursue several goals to answer the key research questions:

- **Understanding the development, implementation, and reach of programs** and how they vary across awardees and over time
- **Explaining the relationship between program and beneficiary characteristics, delivery systems change, and observed outcomes**, as well as potential spillover effects and unintended consequences for other patients and providers
- **Describing workforce development/training programs** and their effects on enhanced duties, recruitment, job creation, and job satisfaction
- **Describing providers’ experiences in the program**, including their perception of changes in access to and coordination and patient-centeredness of primary care
- **Estimating the impact of programs on patients’ health, health care utilization, and expenditures measures**, and investigating differential effects across key subgroups

Mathematica’s evaluation approach examines the PCR initiatives across four key areas of inquiry: (1) program implementation, (2) workforce development, (3) program effects on providers, and (4) program effects on patients. We will use a mixed-methods methodology, essential to conducting a comprehensive and policy-relevant evaluation of the HCIA initiative, but will tailor the components of the general approach to reflect the specific details of each of the 14 programs. This mixed-methods approach addresses the complexity of the PCR programs and ensures that the analyses of impacts on outcomes and implementation progress feed into each other using techniques such as triangulation. We will use multiple data sources—such as

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<sup>1</sup> HCIA funding was awarded to the 14 sites by July 2012. The evaluation contract began in September 2013; if all option years are funded, the evaluation will run through September 2016.

program documents, implementation telephone calls and site visits, quarterly monitoring reports, clinician and trainee surveys, and claims data—to conduct analyses. Mathematica will report findings to CMMI in nine quarterly reports, with the first submitted in March 2014, and three annual reports, with this being the first. Next, we discuss the purpose of this report.

## **B. Purpose of this report**

This first annual report has two key purposes: (1) to summarize the implementation experiences and effectiveness of the 14 HCIA programs, identifying the barriers and facilitators encountered during program implementation and using those factors to assess the effectiveness of program implementation at each site; and (2) to synthesize key findings across awardees, focusing on providing CMMI with insight on the primary determinants of implementation effectiveness to date.

Because the timing of the multiple data collection and awardee reporting activities varies, the content of each annual report will likewise be different. For example, this first report contains no impact or survey findings; we will begin reporting on those findings in the second annual report. In addition, we will continue reporting on quantitative findings in the quarterly reports.

## **C. Approach and limitations of implementation evaluation**

Most of the information presented in this report is based on a qualitative analysis of the implementation experiences and effectiveness of the 14 PCR programs two years into their three-year award period, using the Consolidated Framework for Implementation Research (CFIR) framework. The CFIR methodology uses a core set of constructs based on a comprehensive and systematic review of the implementation science literature (Damschroder et al. 2009). CFIR provides a conceptual framework and a consistent typology, terminology, and set of definitions that can be used to assess which implementation is effective in a specific context and setting. Our approach builds on the CFIR-based framework developed by RAND for the Centers for Medicare & Medicaid Services (CMS) to guide the evaluation of the HCIA-funded programs and refined by RTI International over the past year for its meta-analysis of the initiative.<sup>2</sup>

As illustrated in Figure I.1, the CFIR methodology provides a framework for organizing the constructs of program implementation into three implementation experience-related inputs (program characteristics, implementation process, and inner and outer settings); three implementation effectiveness outcomes (timeliness, program reach and spillover, and sustainability and replicability); and two program effects (effects of providers and effects on patients). We discuss the meaning of each of these terms and our steps to coding the qualitative information into each of these domains and subdomains in the following section.

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<sup>2</sup> CMMI contracted with the RAND Corporation before awarding the HCIA evaluation contracts to develop an overarching framework for the evaluation of HCIA-sponsored innovations as a whole. CMMI ultimately divided the HCIA awards into seven thematic groups and executed an evaluation contract for each group individually. CMMI contracted with RTI International to coordinate and synthesize the results across all seven evaluations in a meta-analysis.



**Figure I.1. Overview of CFIR methodology**



Using the CFIR methodology tailored to the needs and circumstances of this study, we coded the qualitative information into three domains: (1) program characteristics, (2) implementation process-related factors, and (3) characteristics of the inner and outer settings. Program characteristics reflect the underlying features of the program and are often determined during the design phase of the innovation. They can include such subdomains as adaptability, complexity, feasibility, perceived relative advantage, and user control. Implementation process-related factors reflect the features of the process through which the program or components of the program are implemented. The most common subdomains in this area are program resources, self-monitoring, and staff and stakeholder engagement. Finally, the characteristics of the inner and outer settings reflect the characteristics of the implementing organization and external environment, respectively, and are considered to be outside the control or influence of the program administrators, at least in the short run. Examples of inner setting characteristics include the culture and capacity of the host organization, the level of support and the style of the organizational leadership, and the type and structure of the implementing organization. Examples of outer setting characteristics include the structure of health care financing and organization within which the program operates, including Medicare and Medicaid programs and policies; the technological environment; and unanticipated patient needs and resources.

In addition to the three implementation experience domains that describe the characteristics of each program’s design, implementation, and context (factors that CFIR treats as explanatory variables or key facilitators of or barriers to implementation success), we also coded the qualitative information into a fourth (outcome) domain that we use to assess implementation effectiveness. According to CFIR, the key measures of implementation effectiveness are program reach and spillover, timeliness, fidelity and dosage, and sustainability and replicability. Given that the intent of the HCIA awards was to foster innovation and further the understanding of what works (and does not work) in various program settings and for different patient populations, fidelity to the model. Similarly, the adaptations of the operational protocols over the first few years of the awards (as well as the variation in their applications depending on practice settings and patient needs) made intensity of intervention services (dosage) difficult to assess during this initial evaluation period. We will focus on dosage as an outcome measure during the second phase of the implementation evaluation. Because we have based the first annual report on implementation experience two years into awardees’ three-year funding period (with exceptions), there is also relatively less to say at this phase of the evaluation on program sustainability and replicability (although many awardees have begun thinking about these

issues). As a result, most of our attention in this report is on two primary measures of program effectiveness: timeliness (the extent to which programs implemented individual components on schedule) and reach (the number of patients who have benefitted either directly or indirectly from intervention services).

Finally, we coded the qualitative information into two additional subdomains based on innovation components and workforce development and training activities. The purpose of the innovation components domain was to capture the range of intervention strategies that awardees are using to transform the delivery of primary care. Core components include care management, care coordination, transitional care, and patient-centered care. Contributory components include team-based care, health information technology (IT), risk stratification, workflow processes, and payment reform, among others. Workforce development (including both workforce deployment and staff training) is fundamental to the goal of primary care practice transformation and underlies everything that awardees are doing to achieve the goals of improved patient care and health outcomes at lower cost. Because of its importance to primary care transformation, we developed and applied a set of codes to characterize staff training (format, frequency, and content) and deployment (new roles versus existing staff). We also developed codes to capture workforce process and outcome subdomains (including recruitment, quality, retention, satisfaction, and utility), as well as general workforce policies within the implementing organization.

We based our analysis mainly on information collected through telephone interviews with program administrators, in-person interviews with clinic administrators and frontline staff at two to four participating sites from each award, and an ongoing review of quarterly program reports. We purposely selected the sites to visit in an effort to obtain a range of perspectives (for example, urban versus rural clinics and community versus hospital-based clinics); to cover as many components of each innovation as possible; and to minimize travel time and expense. We also attempted to interview as many frontline staff involved with or affected by the intervention as possible, including local program and clinic administrators, physicians, nonphysician clinicians, pharmacists, nurses, care coordinators, medical assistants, community health workers, and trainers, among others. We did not speak with patients or patients' advocates during our visits. The site visits lasted about four days on average and were conducted from April to June 2014.

Because we visited only a small number of sites and spoke only with selected staff at those sites, our findings might not be generalizable to all practices and providers engaged in the transformation process. In addition, although we asked respondents to describe the effect of the innovation on providers' practice and patients' health, the purpose of the qualitative analysis was to evaluate implementation effectiveness. Any findings in this report related to patients' effects are only suggestive of the perception of those we interviewed for this study.

#### **D. Road map for this report**

Chapter II of this report details our implementation findings to date for each awardee, including a brief overview of their innovations; a descriptive update on the current status of program operations; an analytic summary of the awardee's implementation experience to date; key stakeholders' perceptions of program effects, sustainability, and replicability; and lessons

learned. The report concludes with a cross-awardee synthesis (Chapter III) summarizing implementation findings, highlighting common successes and failures, and describing facilitators and barriers by group or subgroups of awardees. Appendix A describes how we plan to report impact findings in future annual reports. Finally, Volume II of this report includes case studies on the 14 sites as of February 2014.

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## **II. IMPLEMENTATION FINDINGS BY AWARDEE**

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### **A. Overview of 14 PCR awardees**

The 14 HCIA PCR programs vary widely in terms of their program, intervention, and market characteristics (see Table II.1). For example, 7 initiatives are spearheaded by provider organizations; 4 by foundations, universities, or other nonprofit community-based organizations; and one each by a payer, a business coalition, and a regional health care planning agency. Five programs target individuals for their interventions, 8 focus the intervention on the practices with which they work, and one program focuses on both individuals and practices. Twelve programs are based in provider settings and 2 are based in community settings, attempting to engage patients where they live, such as in their homes, in temporary or transitional housing, or in social service agencies.

The initiatives also represent a range of target populations and program components. As shown in Table II.1, 9 programs focus on specific age groups (4 on pediatric and 5 on elderly patients) and 12 focus on specific health conditions (11 on chronic conditions, 6 on mental health disorders, and 4 on both). Of the 14 programs, 10 focus on high health care utilizers (such as patients with more than two visits to the emergency department [ED] in six months) and those at risk for hospital readmission, aiming to reduce the inappropriate use of inpatient and emergency services.

The 14 HCIA PCR programs implemented a variety of intervention components. Four components are common across most programs and central to the aims of the transformation process. These include (1) care coordination (defined as a set of actions designed to help organize patient care activities between multiple providers [McDonald et al. 2007]); (2) care management (defined as a set of actions designed to improve medical practice and assist patients and their support systems to their manage medical, social, and mental health conditions more effectively [Mechanic 2004]); (3) care transitions (defined as a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location [Coleman et al. 2003]); and (4) patient-centered care (defined as care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions [Institute of Medicine 2012]). All 14 awardees are implementing care management, 13 are implementing care coordination, and 10 are implementing transitional care as a core component of their programs. Ten programs are also implementing interventions aimed at improving the provision of patient-centered care.

Depending on the goals and needs of the program, five additional components help support care coordination, care management, transitional care, and patient-centered care. Although these components do not represent the core aims of the innovation programs, they support the implementation of the main components and contribute to transforming the way in which services are provided. Ten programs are improving the use of health IT, 8 programs are creating integrated multidisciplinary care teams, and 4 use risk stratification techniques to identify patients at high risk for unnecessary and avoidable use of medical services. Four programs also incorporated new payment reform approaches and 3 redesigned workflow processes to improve primary care.

Because these 14 programs are being implemented in 32 states and territories, they have the potential to influence the delivery of primary care services in diverse health care markets and in all regions of the country. Five programs are attempting to transform the delivery of primary care in local health care markets only and 3 focus on regional markets within a single state. Two other programs are attempting to change the way in which primary care services are delivered statewide and 5 strive to redesign primary care delivery systems in more than one state. Three programs focus on urban health care markets and 2 on rural health care markets; the remaining 9 include health care markets in both urban and rural areas.

**Table II.1. Characteristics of PCR HCIA programs**

	Total	Atlantic General Hospital	CareFirst Blue Cross Blue Shield	Cooper University Hospital	Denver Health and Hospital Authority	Finger Lakes Health System Agency	Foundation for California Community Colleges and the Transitions Clinic Network	Pacific Business Group on Health	PeaceHealth Ketchikan Medical Center	Research Institute at Nationwide Children's Hospital	Rutgers Center for State Health Policy	Sanford Health	TransformED	University Hospitals of Cleveland Hospital	Wyoming Institute of Population Health, a division of Cheyenne Regional Medical Center
<b>Program characteristics</b>															
<b>Program awardee</b>															
Provider	7	✓			✓				✓	✓		✓		✓	✓
University/foundation/NP	4			✓			✓				✓		✓		
Payer	1		✓												
Business coalition	1							✓							
Planning agency	1					✓									
<b>Intervention focus</b>															
Practice	9	✓	✓		✓	✓			✓			✓	✓	✓	✓
Individual	6			✓			✓	✓		✓	✓			✓	
<b>Program setting</b>															
Provider-based	12	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Community-based	2			✓							✓				
<b>Program site</b>															
Practice-based	11	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓
Hospital-based	4	✓								✓				✓	✓
Community-based	2			✓							✓				
<b>Intervention characteristics</b>															
<b>Target population</b>															
All patients	8	✓				✓			✓	✓		✓	✓	✓	✓
Chronic conditions	11	✓	✓		✓		✓	✓	✓	✓	✓	✓		✓	✓
High utilizers	10	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	
Mental health disorders	6			✓	✓		✓			✓		✓		✓	

Table II.1 (continued)

	Total	Atlantic General Hospital	CareFirst Blue Cross Blue Shield	Cooper University Hospital	Denver Health and Hospital Authority	Finger Lakes Health System Agency	Foundation for California Community Colleges and the Transitions Clinic Network	Pacific Business Group on Health	PeaceHealth Ketchikan Medical Center	Research Institute at Nationwide Children's Hospital	Rutgers Center for State Health Policy	Sanford Health	TransformMED	University Hospitals of Cleveland Hospital	Wyoming Institute of Population Health, a division of Cheyenne Regional Medical Center	
Elderly	5		✓	✓		✓		✓								✓
Children	4				✓					✓		✓		✓		
Other	1						✓									
<b>Core components</b>																
Care management	14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Care coordination	13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transitional care	10	✓		✓	✓	✓	✓		✓	✓	✓			✓	✓	✓
Patient-centered care	10	✓	✓	✓	✓	✓				✓	✓	✓	✓		✓	✓
<b>Contributory components</b>																
Health IT	10	✓	✓	✓	✓				✓	✓		✓	✓	✓	✓	✓
Integrated care teams	8	✓			✓	✓			✓	✓		✓		✓	✓	✓
Risk stratification	4	✓	✓		✓			✓								
Payment reform	4		✓			✓				✓				✓		
Workflow redesign	3				✓	✓				✓						
<b>Market characteristics</b>																
<b>Market area</b>																
Local	5			✓	✓				✓		✓				✓	
Regional	3	✓				✓				✓						
Statewide	2		✓													✓
Multistate	5						✓	✓			✓	✓	✓			
<b>Market location</b>																
Urban	12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rural	11	✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

HCIA = Health Care Innovation Awards; IT = information technology; NP = nonprofit; PCR= Primary Care Redesign.



## **B. Individual program summaries**

In the remainder of this chapter, we present a detailed summary of operational updates for each of the 14 PCR programs, and a detailed discussion of the primary determinants of implementation effectiveness. These summaries are organized in alphabetical order, as shown below (each summary is self-contained to facilitate its readability):

- Atlantic General Hospital
- CareFirst Blue Cross Blue Shield
- Cooper University Hospital and Camden Coalition of Health Care Providers
- Denver Health and Hospital Authority
- Finger Lakes Health Systems Agency
- Foundation for California Community Colleges and the Transitions Clinic Network
- Pacific Business Group on Health
- PeaceHealth Ketchikan Medical Center
- Research Institute at Nationwide Children’s Hospital
- Rutgers Center for State Health Policy
- Sanford Health
- TransforMED
- University Hospitals of Cleveland Rainbow Babies and Children’s Hospital
- Wyoming Institute for Population Health, a division of Cheyenne Regional Medical Center

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**ATLANTIC GENERAL HOSPITAL**

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## ATLANTIC GENERAL HOSPITAL

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of Atlantic General Hospital's (AGH's) Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, nearly two years after program award. We based the summary on a review of the awardee's quarterly reports and information collected during the first-round site visit conducted April 8–10, 2014. The site visit included interviews with AGH program leaders and staff, as well as providers at three AGH primary care practices: Berlin Primary Care and Pulmonology, Ocean Pine's Primary Care and Women's Health, and Pocomoke Medical Center. We also interviewed representatives from AGH's community partners, including staff at the Worcester County Health Department (WCHD) and the hospital chaplain working with local faith-based organizations. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the AGH primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) AGH received a three-year, \$1.1 million HCIA to implement a patient-centered medical home (PCMH) model in all seven of its primary care practices located throughout eastern Maryland and southern Delaware and supported by a clinical team at AGH. This initiative aims to provide patients diagnosed with chronic conditions with timely, coordinated, and less costly outpatient care and to decrease overuse of high-cost, high-acuity services. AGH aims to reduce hospital admissions and emergency department (ED) visits by 20.0 percent and total cost of care by 15.5 percent through implementation of the HCIA program.

**Table 1. Summary of AGH primary care redesign program**

Awardee's name	Atlantic General Hospital
Award amount	\$1,097,512
Implementation date	January 2013
Program description	<ol style="list-style-type: none"> <li>1. Implement a PCMH model at AGH and its seven primary care practices to expand access to care and <ul style="list-style-type: none"> <li>• Provide care coordination for patients with chronic conditions</li> <li>• Provide care transitions for patients discharged from AGH</li> <li>• Conduct ongoing surveillance to identify high utilizers</li> </ul> </li> <li>2. Educate patients and providers to promote awareness and use of PCMH services</li> <li>3. Establish an online portal to support provider-patient communication and give patients access to health information</li> </ol>
Innovation components	Care coordination, care management, transitional care, patient-centered care, health information technology, risk stratification
Intervention focus	Practice
Workforce development	Care coordinators, social worker, registered nurse, patient advocate
Target population	High utilizers of inpatient services; patients with chronic conditions
Program setting	Provider based (hospital and primary care practices)
Market area	Regional (eastern Maryland and southern Delaware)
Market location	Rural (Worcester County, a federally designated medically underserved area)
Core outcomes	<ul style="list-style-type: none"> <li>• 20.0 percent reduction in hospital ED visits</li> <li>• 20.0 percent reduction in hospital admissions</li> <li>• 15.5 percent reduction in total cost of care</li> </ul>

Source: Review of AGH program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

Key components of the AGH program include: (1) a PCMH model of care based on National Committee for Quality Assurance (NCQA) standards, including care coordination, care transitions, and high-utilization surveillance services; (2) education of patients and providers to increase awareness and use of PCMH services; and (3) an online portal to support communication between patients and providers and to offer patients access to health information to improve self-care. Originally targeting Medicare beneficiaries with an admitting or primary diagnosis of chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), or diabetes mellitus (DM), AGH expanded its program to include patients with other chronic illnesses, such as hypertension and obesity, as well as patients with non-Medicare insurance younger than 65 who referring providers believe will benefit from participation in the program. AGH also works with community partners to support the PCMH model. For example, program staff at WCHD provide care transition support to patients discharged from AGH, including assessments of care transition needs, home visits, connection with community resources, and education about PCMH services. AGH also works with 15 faith-based community organizations to disseminate information on PCMH services to their congregations and to provide on-site access to the online portal.

**III. Operational update**

In this section, we provide an update on the operational aspects of the AGH primary care redesign program as of April 2014 (see Table 2). To meet the needs of patients who do not require the level of intervention services offered through its care coordination and transitional care programs but who could benefit from ongoing follow-up to help manage their chronic conditions, AGH began training retired nurses who volunteered to implement the Keeping in Touch (KIT) program. KIT volunteer nurses make follow-up calls to participants in the program to monitor their progress and identify changes that may require additional assistance to effectively manage their conditions and avoid unnecessary use of inpatient and ED services. In addition, community education and outreach activities about the PCMH model have now become part of AGH’s public relations work. As part of this ongoing effort, AGH created an informational brochure to educate patients about the services offered through the PCMH model. Finally, AGH launched an online portal to enable patients to communicate directly with providers, request appointments and referrals, order prescription refills, and access their medical records and health information.

**Table 2. Status of operational aspects of AGH primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. PCMH	Continued to implement PCMH model in 7 primary care practices, including care coordination, transitions in care, and high-utilization surveillance programs
	2. Patient and provider education	Completed initial patient and provider education and prepared PCMH brochure
	3. Patient portal	Launched patient portal at hospital
Workforce development		Experienced turnover in WCHD nurse and social worker positions on transitional care team, and began training retired nurses who volunteered to implement the KIT program
Patient enrollment		Cumulatively enrolled 698 patients (as of April 2014)

Source: Interviews with program staff and review of program reports, April 2014.

In terms of program staffing and workforce development, the nurse and social worker from WCHD who started on the project as members of the transitional care team were reassigned to other positions, and new staff assumed their responsibilities in January 2014. Staffing updates for program positions not funded under the HCIA included hiring a part-time data manager to assist with program reporting tasks and the assignment of two retired nurses who volunteered for the KIT program. A dietician from the AGH diabetes education program was assigned to the project to assist PCMH patients with diabetes, but has not yet been integrated into the care coordination team. AGH plans to conduct additional staff training, including a motivational interviewing seminar to help the PCMH team learn new strategies to engage noncompliant patients, as well as provider education on topics such as patient engagement and feedback about program impacts on patients' outcomes. By April 2014, AGH enrolled 698 patients into the PCMH program, 161 (23 percent) of whom were enrolled in the first three months of 2014.

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

##### **A. Implementation process**

Three implementation process factors facilitated the implementation of the AGH program: (1) engaging AGH primary care providers, (2) dedicating resources to support the program, and (3) monitoring progress to guide ongoing improvement. First, AGH used education- and data-driven approaches to engage providers in the PCMH model. Care coordinators initiated weekly meetings with physicians to provide reports that identified patients with targeted diagnoses who might benefit from the program; monitored the progress of enrolled patients; and shared case studies of patients who improved their compliance, stabilized their conditions, and avoided ED visits. Achieving providers' buy-in has been important for obtaining patient referrals and coordinating care for enrolled patients. In addition, convincing providers of the value of the program for managing chronic diseases led to a physician-initiated expansion of the target population to include patients with other diagnoses who could benefit from PCMH services.

Second, program leaders used HCIA funding to hire new staff to expand AGH's capacity to provide care coordination and care transitions services under the PCMH program. Commitment of additional staff resources helped minimize the added burden that would have been imposed on providers and practice staff already struggling to follow up with patients and help connect them with outside services on top of the already-high demands of delivering primary care services in a busy clinical practice. In addition, AGH provided physical space to collocate WCHD program staff with the PCMH team, which facilitated communication and coordination among staff.

Third, AGH established a self-monitoring process that guided ongoing program revisions and quality improvement efforts. Program administrators tracked monthly patient enrollment, PCMH service use, hospitalization and ED visits, readmissions, and total costs. Low patient enrollment early in the program prompted AGH to refine the high-utilization surveillance program, including implementing a daily review of hospital and ED visits to identify patients who might benefit from PCMH services. This refinement helped expand program reach. An

analysis of observed increases in readmissions revealed that most readmissions occurred among patients admitted from skilled nursing or rehabilitation facilities and home health agencies outside the AGH system. In response, AGH began building relationships with these facilities and agencies to identify the root causes of readmissions and to develop strategies for preventing the unnecessary use of health care services.

Engaging program partners has been one process-related factor that presented implementation challenges for AGH. Despite a history of collaboration with WCHD, AGH leaders described experiencing communication problems between program staff from the two organizations. To improve communication, WCHD staff received additional training in the use of AGH's electronic medical record system, which serves as the primary communication tool between the program team and providers. In addition, AGH arranged for WCHD program team members to relocate to the central program office and to attend team meetings as a way of facilitating communication. AGH also encountered challenges related to program staff turnover at WCHD. WCHD reassigned staff filling the nurse and social worker positions on the project, which required training new staff to assume these roles. AGH faced challenges working with its faith-based partners, as well. The distribution of computers to local churches was delayed due to the death of a chaplain who championed PCMH outreach efforts in the community. AGH continued to build relationships with its faith-based partners and to engage local champions, resuming the installation of computers in April 2014. Several church staff initially hesitated to accept free computers, expressing concerns about restrictions on the computers' use and limited technical expertise to operate and maintain them. AGH reassured church staff that, in addition to offering parishioners access to the online portal, they could use the computers for other purposes. AGH also began providing church staff with technical support.

## **B. Program characteristics**

In addition to the implementation process factors, three characteristics of the AGH initiative helped it implement the program: (1) providers' perceptions of the relative advantage of the program compared with the standard delivery of care, (2) frontline users' flexibility in implementing the program, and (3) adaptation of the program to meet patients' and providers' needs. First, AGH program administrators, providers, and staff view the PCMH model as offering an advantage for improving care, improving patients' health, and reducing costs, compared with the standard delivery of care. Sharing case studies of patients who benefited from PCMH services provided convincing evidence and contributed to the perception of relative advantage. Care coordinators understand the benefit of providing patient-centered care, including the adoption of weekly patient follow-up, targeted education and tools to improve patients' self-care, and a single point of contact to answer patients' questions and triage urgent matters for same-day appointments. Providers recognize that they benefit from receiving weekly updates of patients' progress and the identification of issues requiring attention between regularly scheduled visits. PCMH team members also believe that, by providing information to patients via telephone or arranging for timely office visits, the PCMH model has improved patients' outcomes and lowered costs through the prevention of unnecessary hospitalizations and ED visits.

Second, AGH's program gives frontline staff flexibility in implementing the PCMH model to meet each patient's needs. Program administrators are developing a set of standard procedures for patient referrals, as well as a set of operational protocols for the care coordination,



transitional care, and KIT programs. However, AGH intended these guidelines to be living documents that standardize the services offered but still allow providers and care coordinators freedom to modify the intensity or duration of follow-up care to meet patients' variable needs. Care coordinators found that "each physician is unique, and we have to learn how they like to manage things . . . some providers don't like to use the same set of standards for all of their patients and prefer to look at them individually to set patient-specific goals." For example, for patients who might benefit from continued care coordination after meeting their initial goals, providers expressed a desire to have greater flexibility to revise care plans and adjust patients' duration in the care coordination program.

Third, AGH has been able to adapt its program to reach more patients and better meet its existing patients' needs. Physicians initially referred only patients with DM, COPD, or CHF to the PCMH program. However, they later began to refer patients with other diagnoses who could benefit from the program's services. AGH also implemented the high-utilization surveillance program to identify patients eligible for the program who might not be identified through physician referrals. In addition, AGH enhanced its program offerings by adding the KIT program to help meet the needs of patients who no longer require care coordination services, but could benefit from less intensive follow-up to manage their health conditions over time. The transitional care program continues to evolve as AGH develops strategies for working with other facilities to prevent readmissions.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located, can influence implementation. Four internal factors have facilitated implementation of the AGH program: (1) leadership commitment, (2) prior experience implementing the PCMH model, (3) team collaboration, and (4) implementation climate. First, AGH's chief executive officer led the transition to a PCMH model of care over the past five years, creating a spirit of innovation within the implementing organization. Second, AGH's previous experience implementing a PCMH model at two primary care practices helped facilitate implementation of the model at all seven primary care practices by enabling AGH to build on processes established and knowledge gained through development of its PCMH pilot infrastructure. The program represents an expansion of work AGH was already doing in two practices. Because many providers were already familiar with the PCMH model, AGH program leaders were able to engage staff and providers by alleviating concerns about the anticipated burden associated with launching a new initiative. Third, administrative and program staff described a culture of caring in their community that characterizes the AGH organization, with employees sharing a strong commitment to teamwork and respecting one another's roles in the delivery of high quality care. Several staff pointed out that program administrators regularly listen to feedback from providers and other PCMH members and make it easy to implement changes to improve the PCMH program.

Three external factors have presented challenges to implementing the PCMH initiative: (1) patients' needs and resources, (2) independent providers, and (3) payment models. First, some patients in the target population face significant barriers to care. Several providers estimated that 5 to 10 percent of their caseloads are low-income patients with limited literacy, restricted access to transportation, and limited caregiver support—factors that contribute to poor compliance with

care plans. Although care coordinators make multiple attempts to engage reluctant patients, some still refuse to participate. Care coordinators expressed interest in learning new skills to engage difficult-to-reach patients, and program administrators are planning a training session on this topic. In addition, about 10 percent of AGH's patients live in Delaware. Although patients from Delaware can participate in the care coordination program, the needs assessments and home visits provided by WCHD staff through the transitional care program are available only to Maryland residents. AGH attempted to develop a relationship with the Delaware Department of Health and Human Services, but its representatives have not expressed interest in supporting the program at this time. Second, program administrators estimated that patients in the AGH system account for only about a third of readmissions at AGH; most readmissions at AGH are for patients treated by independent providers outside the AGH system. AGH is exploring ways to work with independent practice physicians to improve care transitions. Third, program administrators admit that, under the current fee-for-service model, reducing admissions and ED visits results in financial losses for AGH. However, under a January 2014 agreement with the Centers for Medicare & Medicaid Services (CMS), Maryland is shifting to a global payment model that will reward hospitals for avoiding unnecessary hospitalizations. Having made investments to establish its PCMH infrastructure, AGH expects to benefit financially under the new payment model.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which AGH implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover, and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

AGH has successfully implemented all planned program components, including the care coordination, care transition, and high-utilization surveillance services that comprise the PCMH care model; an online patient portal; and ongoing community education and outreach activities with its faith-based partnerships. With the exception of the delay in launching the online portal and distributing computers to its faith-based partners (delays now resolved with both tasks progressing as planned), AGH has so far implemented its HCIA program according to its established time line. As discussed earlier, AGH has implemented its program design flexibly, deviating from original plans in ways that make it more effective in reaching patients and improving care. Dosage was not relevant as an outcome measure for this program.

### **B. Program reach and spillover**

As of March 2014, AGH had enrolled a cumulative total of 698 patients into the PCMH program, exceeding its March 2014 target of 262 and nearly reaching the Year 2 target of 700 unique direct participants. This includes patients with the originally targeted chronic conditions (CHF, COPD, and DM), as well as patients with other diagnoses who providers have identified as high utilizers likely to benefit from program services. According to program administrators, about half of all enrolled patients have CHF, COPD, or DM. The remaining patients participating in the program have other chronic conditions, such as hypertension and obesity, and need additional support to manage their conditions and prevent unnecessary hospitalizations and ED

visits. Monthly enrollment increased steadily from project launch in January 2013 through September 2013, but dropped in the fourth quarter (October to December) of 2013. AGH has not identified the cause of the enrollment drop, but reports that enrollment recovered in the first quarter (January to March) of 2014.

Despite reaching initial enrollment targets, program administrators and staff believe they are reaching only a portion of the patients who can benefit from services provided through the PCMH program. Eligible patients are currently identified through either a physician referral after a patient visits one of AGH's primary care practices or notification after a patient is discharged from the hospital. With enrollment leveling off and care coordinators managing caseloads of about 40 patients compared with a target capacity of 100 patients per coordinator, AGH is taking several steps to improve the effectiveness of these strategies and has developed new approaches to identify eligible patients. First, the PCMH high-utilization surveillance team is monitoring hospital service utilization and distributing a report of patients with a hospitalization or ED visit for one of the target conditions to providers to help them identify patients who might not have already been referred to the program. Second, AGH shares with providers a list of patients with more than two admissions or ED visits within six months for any diagnosis (high utilizers) to identify patients who might benefit from additional support to better manage their conditions. Third, AGH plans to identify patients with three or more chronic conditions for physician review, with the objective of anticipating patients' needs for care management support and intervening early to help them avoid hospitalization or ED visits.

### **C. Sustainability and replicability**

AGH leadership demonstrated a commitment to adopting the PCMH model of care before receiving HCIA funding. HCIA provided additional resources that supported the continuation and expansion of AGH's pilot PCMH model for three years. Administrators are also committed to securing the resources needed to maintain the program after HCIA funding ends, and they believe Maryland's recent agreement with CMS to reform the Medicare rate-setting system for hospital services by shifting to a global payment model will provide the financial resources needed to sustain the PCMH model. The new global payment model requires Maryland to generate \$330 million in Medicare savings over a five-year period; it also incentivizes hospitals to work in partnership with other providers to prevent unnecessary hospitalizations and readmissions. Each Maryland hospital will receive a budget, based on historic revenues, to care for a defined population in its community. Instead of charging for individual services, hospitals will have an incentive to keep people healthy, provide fewer services, and avoid unnecessary utilization. AGH plans to share information about the cost savings resulting from reductions in admissions and ED visits and discuss potential cost sharing opportunities with commercial insurers.

AGH's HCIA program demonstrates the replicability of the PCMH model, expanding from two practices before the award to all seven primary care practices after the receipt of program funding. In addition, AGH is pursuing opportunities to integrate other providers in the PCMH model of care, including collaborations with several post-acute health care facilities to reduce readmissions related to cancer care and palliative care. Finally, AGH is exploring opportunities for expanding service offerings to other patient groups through the use of telemedicine.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Front-line staff said the PCMH program has had a positive effect on provider satisfaction and behavior, including more teamwork and collaboration in patient care delivery, additional support to meet patient needs, and increased satisfaction associated with the PCMH model of care compared with the traditional care model. First, providers reported an increase in teamwork associated with implementation of the program. In addition to working closely with care coordinators to monitor patient progress between office visits, providers have enhanced their communication with hospital staff and the care transition team from WCHD. As one provider expressed, “Social work and the health department—we really didn’t have a lot of dialogue with them before. Some of the other ones, like the diabetic group at the hospital, that’s just improved because they know what we’re doing. We’ve started a lot of communication with folks we didn’t talk to before.”

Second, the care coordination team has reduced the burden on providers and other clinic staff by serving as the first point of contact for patients, answering telephone calls, and triaging patients with urgent care needs. One physician, describing the impact of the additional resources available to support implementation of the PCMH model, stated “My role hasn’t changed. But I have a lot more support staff and tools that I previously didn’t have. Not only just having the care coordinators taking burden off of us and our staff trying to get patients coordinated with other specialists, home health, and those types of things, but they are out in the community finding resources. I wouldn’t have the time to do that or know those opportunities exist.”

Finally, providers and members of the care coordination and transitional care teams expressed satisfaction with their ability to improve patient care, reduce costs, and improve health outcomes through implementation of the PCMH model. Care coordinators derived satisfaction from developing relationships with patients and helping meet previously unmet needs for education and self-care support. Transitional care team members value their role in providing comprehensive patient needs assessments and identifying opportunities to improve patient self care during home visits. Providers report that weekly updates of patient progress between scheduled office visits enable them to intervene when necessary to address patients’ emerging care needs more promptly and effectively and to help avoid hospitalizations and ED visits.

The primary challenge that providers have encountered has been an increased workload associated with managing a high volume of communication with the PCMH team. Reviewing numerous messages from the PCMH team each day takes time for providers to identify issues requiring their attention. Yet, no providers were willing to delegate the triaging of messages to care coordinators, preferring to have “...too much information rather than too little and miss something.” Several providers also mentioned an added burden posed by care coordinator participation in patient office visits. Care coordinators provide detailed information about patient progress and offer reminders to providers to address specific issues. However, while a three-way conversation between providers, care coordinators, and patients can reveal social barriers to care, it can also lead to longer office visits. One provider indicated that he deals with this challenge by initially directing the conversation to the priority issues that he has identified and then offering time for the care coordinator and patient to remain in the exam room to review the care plan and to address any new recommendations, while the physician begins another patient visit.

## **B. Perceived effects on patients**

PCMH staff and providers reported that participation in the PCMH program has had positive impacts on patients. Benefits to patients in the PCMH program include more patient-centered care, ongoing education to manage chronic conditions, better care coordination across providers and settings, and timely access to providers. Weekly follow-up calls with patients offer them the support they need to manage their chronic conditions and to meet their care plan goals. In addition, PCMH team members shared multiple examples of cases in which they were able to help patients avoid hospitalizations or ED visits by providing information over the phone or arranging for same-day office visits. As one provider said, “Patients who are care coordinated become better educated, more stimulated, more motivated. Patients tell us they like the attention. They really like the fact that they’ve got a lot of people looking after them.”

## **VII. Conclusions**

Two years into its three-year program agreement, AGH successfully implemented all of the components of its HCIA program and achieved high levels of provider and staff engagement in the PCMH model of care. From the beginning, AGH’s implementation process has included ongoing monitoring and feedback from frontline staff to guide continuous improvement. Adaptations have included expansion of the target population to increase program reach, as well as additional service offerings to meet patients’ needs for continued but less intensive follow-up care after hospital discharge. AGH identified several opportunities for further improvement, including strengthening communication between the care coordination team and providers; standardizing care coordination, transitional care, and KIT program services, while allowing flexibility to accommodate individual patient needs; developing new approaches to identify patients to supplement provider referrals and high-utilization surveillance; and developing strategies to engage patients who face barriers to participating in the program. AGH leadership and program administrators have taken a long-term view in adopting the PCMH model. While HCIA funded the program staff needed to implement the PCMH model in all of its primary care practices, AGH has begun to explore ways to ensure the program is sustainable. Maryland’s shift to a Medicare global payment model might provide a financial support for AGH’s continued efforts to reduce costs by avoiding unnecessary hospitalizations and readmissions through the transformation of care delivery using the PCMH model.

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## CAREFIRST BLUE CROSS BLUE SHIELD

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of CareFirst Blue Cross Blue Shield's (CareFirst's) Health Care Innovation Award (HCIA) primary care redesign program as of May 2014, nearly two years after program award. It is based on a review of the awardee's quarterly reports and information collected during the first-round site visit conducted May 5–8, 2014. We interviewed 5 of the 139 primary care providers (PCPs)—representing three panels—participating in the HCIA initiative. We also interviewed three local care coordinators (LCCs), one regional care coordinator, two program consultants, and two information technology (IT) staff involved in the program. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the CareFirst's HCIA-funded expansion of its commercial Total Care and Cost Improvement program, the core of which is a patient-centered medical home (PCMH) program, to Medicare fee-for-service (FFS) beneficiaries in Maryland (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) CareFirst received \$24 million in HCIA funding, with the goal of reducing hospital costs for program participants by 7.5 percent and total health care costs by 6.0 percent by the end of the award.

**Table 1. Summary of CareFirst primary care redesign program**

Awardee's name	CareFirst BlueCross BlueShield
Award amount	\$24,000,000
Implementation date	August 1, 2013
Program description	CareFirst received HCIA funding to extend its commercial PCMH program to Medicare FFS beneficiaries in Maryland. Key components of the program include the following: <ol style="list-style-type: none"> <li>1. Attribute patients.</li> <li>2. Assign illness burden scores.</li> <li>3. Develop care plans for patients with multiple chronic conditions.</li> <li>4. Implement care plans and support these efforts with care coordination activities.</li> <li>5. Utilize beneficiary-specific and population data to influence physician behavior.</li> <li>6. Financially reward PCPs who reduce costs while improving quality.</li> </ol>
Innovation components	Care coordination, care management, health IT, payment
Intervention focus	Practice
Workforce development	Create 36 new positions to help PCPs implement the program; train new staff based on their specific job responsibilities
Target population	Medicare beneficiaries with chronic condition who are high utilizers of health care services
Program setting	Provider-based (primary care practices)
Market area	Statewide (Maryland)
Market location	Suburban, urban
Core outcomes	<ul style="list-style-type: none"> <li>• 7.5 percent reduction in hospital costs for program participants</li> <li>• 6.0 percent reduction in total health care costs for program participants</li> </ul>

Source: Review of CareFirst program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

The HCIA-funded initiative unites the two largest payers in the region (CareFirst and Medicare) into a single health care financing model that seeks to incentivize PCPs to reduce health care costs while increasing quality. The HCIA initiative is organized around medical care panels, which are groups of 5 to 15 PCPs who voluntarily agree to be a performance unit. Panels can be formed by solo or small, independent group practices that agree to work together (referred to as a virtual panel); independent group practices that already fall within the size range; or a subsection of a large group practice. The HCIA initiative includes six key components: (1) attribute patients to panels, (2) provide PCPs with claims-based illness burden scores to indicate who might benefit from additional care coordination services, (3) develop care plans for high-risk patients, (4) implement care plans with assistance from care coordination teams and support services, (5) utilize beneficiary-specific and population data to influence physician behavior, and (6) financially reward PCPs who reduce total costs while improving quality.

**III. Operational update**

In this section, we provide an update on the operational aspects of the CareFirst primary care redesign program as of May 2014 (see Table 2). CareFirst launched the HCIA initiative in August 2013, after reconciling delays in the receipt of Medicare data used for program implementation. Its model uses LCCs to facilitate the development and implementation of care plans for high-risk patients as defined by claims-based illness burden scores. From January to March 2014, more than 500 care plans were activated, bringing the total number of care plans activated under the award to more than 800. CareFirst continues to add resources that LCCs and PCPs can use to support their care coordination efforts, such as home health assessment (which evaluates potential in-home risks and includes medication reconciliation) and enhanced in-home monitoring (which uses monitoring devices to send data directly to LCCs). In addition, CareFirst hired three program consultants to review utilization data to help panels achieve better outcomes for their patient populations while identifying cost-saving opportunities.

**Table 2. Status of operational aspects of CareFirst's primary care redesign, May 2014**

Operational aspects	Program components	Current status
Innovation components	1. Patient attribution	Since June 2013, CareFirst attributed 35,000 Medicare beneficiaries to participating panels, using an attribution method based on its commercial program.
	2. Illness burden scores	Since August 2013, CareFirst provided participating panels with an illness burden score for each attributed Medicare patient.
	3. Care plans	The intervention currently focuses on developing care plans for the highest-risk patients. The number of care plans increased significantly in the first quarter of 2014.
	4. Care coordination activities and resources	CareFirst has added extra support services, such as home-based health assessment and enhanced in-home monitoring services.
	5. Use of beneficiary and population data to influence physician behavior	CareFirst assists panels in identifying health care trends among their Medicare population, which can help lead to increased care quality and cost savings.

Table 2 (continued)

Operational aspects	Program components	Current status
	6. Financial incentives	CareFirst will pay panels an outcome incentive award (OIA) if they generate cost savings and achieve quality targets for their attributed patients. OIAs will be calculated for panels in July 2014 for care delivered from August 2013 to December 2013 (with claims run out through March 2014).
Workforce development		Through its vendor, Healthways, CareFirst has hired and trained 33 LCCs. CareFirst has directly hired three program consultants. New staff receive customized training based on their job categories.
Patient enrollment		CareFirst has attributed more than 35,000 Medicare beneficiaries to the 14 participating panels (since inception). Of these, 841 of the highest-risk patients had received a care plan as of March 2014.

Sources: Interviews with program staff, May 2014. Patient enrollment information is from Health Care Innovation Awards, seventh quarterly reporting period, January to March 2014.

Through its vendor Healthways, CareFirst has hired 33 nurse LCCs to help facilitate the care planning process since August 2013. These LCCs have undergone a structured four-week training/orientation class (160 hours per person) and all are currently actively working in the field. CareFirst has also directly hired three program consultants as noted above, who received comprehensive training during their first three months. LCCs and program consultants participate in monthly training forums, as well as weekly update calls, which provide opportunities for continued learning and collaboration. CareFirst plans to add 11 additional LCCs, two additional program consultants, and four case managers (a new position), which were approved as part of the Year 1 carry-over funding request.

**IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

**A. Implementation process**

Three implementation process factors facilitated the expansion of the commercial PCMH program to Medicare beneficiaries: (1) selecting highly engaged physicians to participate in the initiative, (2) integrating care coordination resources into existing clinical teams, and (3) using data to monitor progress and identify areas for achieving better patient outcomes while generating cost-saving opportunities. First, CareFirst began its commercial PCMH program three years ago and recruited 14 of its most engaged panels to participate in the HCIA initiative. Many PCPs felt privileged to have been selected and excited about the opportunity to expand the program to their Medicare patients. The level of engagement and knowledge of the commercial PCMH program has facilitated the implementation of the HCIA initiative, especially because PCPs are supposed to lead the intervention.

Second, PCPs reported that the addition of LCCs has been a key resource to facilitate the implementation process; they acknowledge that they would not have had time to focus as intensely on high-risk patients without program funding to integrate LCCs as part of the care

team. LCCs proactively work with PCPs to determine which patients should receive care plans, develop care plan goals, and coordinate care. LCCs, who are registered nurses, are responsible for drafting patients' care plans, reaching out weekly to coordinate care for patients who receive a care plan, and communicating with PCPs about their patients' progress. LCCs are expected to add new patients to their caseload until they reach capacity at 40 to 50 care plans per LCC. Care plans are updated continuously. The PCPs review each care plan and its progress, depending on the patient's chronic condition or the timing of the patient's follow-up appointment with the PCP. LCCs schedule telephone calls with patients at least weekly while they are in a care plan, with the length of the call varying from 15 to 30 minutes depending on the patient's needs. For example, patients with mental health issues or auditory impairment might require longer calls. LCCs report that teamwork with PCPs is important and that the most successful interactions were those in which the PCP allowed the LCC to interact directly with the patient and responded promptly to issues raised by the LCCs through an established, routine mode of communication. LCCs report this collaboration with PCPs enables the panel to increase the number of care plan participants and have more success achieving their patients' stated goals.

Third, program implementation is facilitated by using self-monitoring data to inform practice changes for some panels. SearchLight reports—which are available through CareFirst's online portal, iCentric—enable PCPs to access detailed patient information and track patients' outcomes over time. Program consultants also meet quarterly with physicians to help identify care patterns among their Medicare beneficiaries that aim to increase quality and cost savings. In addition, regional care coordinators review the quality of each care plan using a common set of metrics to ensure the selection of appropriate patients and that the care plans are all-inclusive and actionable. Each of these data sources provides ongoing feedback to PCPs, panels, and LCCs that can help to communicate progress toward meeting program goals.

Two process-related factors that presented barriers to implementation were (1) lack of engagement among some PCPs involved in the initiative and (2) slow accumulation of additional support service resources available to high-risk participants with a care plan. First, our discussions with frontline staff revealed that PCP engagement varies within panels. In several panels, the lack of PCP engagement has made it difficult to activate care plans and provide needed services to patients. Second, panels were initially unclear about the additional support services that would be available and when they would become available. Over time, CareFirst has added home-based assessments, mental health services, and enhanced in-home monitoring for high-risk participants. LCCs report that these resources have been helpful and well received, particularly the enhanced in-home monitoring.

## **B. Program characteristics**

In addition to the process-related factors, three characteristics of CareFirst's program helped facilitate implementation: (1) the HCIA-funded initiative is based on CareFirst's commercial PCMH program, (2) each panel adopts its own workflow and process for engaging patients using CareFirst's SearchLight reports, and (3) panels have control over the issues that are most important to them. First, CareFirst's goal was to make the HCIA initiative similar to its commercial PCMH program—a common model with similar incentive rules, infrastructure, data sharing, transparency, and accountability. The panels selected for the HCIA initiative already participated in the commercial program, so they knew their roles and general processes.

CareFirst purposefully minimized the differences between its commercial and Medicare programs; the commercial program features remain largely intact with minimal modifications to the Medicare program. PCPs were able to build off their knowledge to implement the HCIA initiative and to expand the model of care to its Medicare patients.

Second, a core component of the intervention is selecting high-risk patients for enhanced care coordination services. Although CareFirst sets minimum eligibility guidelines and develops tools for panels to use when selecting which patients receive care plans, it gives each panel the freedom to develop its own process to select beneficiaries for care plans and to engage with them. Although most PCPs rely mainly on the illness burden scores that CareFirst generates to identify high-risk patients for the program, some PCPs use other methods or their own practice-based records. For instance, some LCCs and PCPs use CareFirst's list of the 50 highest-cost and highest utilizers as a starting point to identify patients who might benefit most from care plans. One practice with a nurse who provides transitional care services to recently discharged patients identifies candidates through her inpatient work. PCPs also use their judgment about who would benefit most from a care plan, based on their relationships with patients and their understanding of patients' medical and social needs. This adaptability helps to ensure that the program is targeted to those who would benefit most from a care plan.

Third, panels are able to control the issues they think are most important and target program resources accordingly. Program consultants are available to work with panels to identify important trends in service use patterns, dominant episodes of care, and strategies to achieve better outcomes for their patients while identifying cost-saving opportunities. Program consultants make recommendations, which can vary based on how aggressively the panel is pursuing practice transformation and its internal technical capabilities. For example, one panel chose to focus on medication reconciliation and fall safety issues. Another panel is focusing on transitional care after a hospital stay, using a dedicated nurse that it hired to enhance its practice infrastructure.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located, can also influence implementation. Leadership commitment is a key internal factor that helped facilitated the implementation of the HCIA initiative. Each panel we visited had a clear leader who championed both the commercial PCMH program and then the HCIA-funded expansion of the model to Medicare beneficiaries. In all panel types, these leaders motivated other PCPs in their panels to participate in the care planning process and were responsible for implementing operational changes throughout their practices.

Two external factors that facilitated implementation are (1) a shift in the state's health care payment policy and (2) CareFirst's decision to allow small and independent practices to participate in the program by leveraging their existing networks. First, Maryland is transitioning from an all-payer rate-setting system for hospital services to a model that focuses on overall per capita expenditures for inpatient services, as well as on improvements in quality of care and population health outcomes. The HCIA initiative is well positioned to benefit from this payment change because the overall aims of the initiative are to shift care toward the outpatient setting as appropriate and to reduce the use of more costly inpatient services. Second, CareFirst allowed

solo or small, independent group practices to form virtual panels, which often consist of physicians who had existing professional networks that shared responsibility for responding to night and weekend emergency calls from patients. The HCIA initiative enables these PCPs to strengthen their existing professional connections by working together as a single performance unit, which encourages peer consultation across practices, expanded office access, and continuous coverage for their patients. Because approximately 40 percent of all PCPs in the initiative are part of a virtual panel, many solo or small and independent group practices have been able to leverage their existing networks to focus on and be rewarded for achieving quality improvements and cost savings, and to strengthen their professional relationships.

Two external factors that presented implementation challenges are (1) the complexity of Medicare patients compared with commercial patients and (2) the technological environment in which some panels operate. First, staff reported that it is more difficult and time consuming to develop care plans for Medicare patients due to the fact that they generally have higher rates of chronic disease, are on more medications, and are treated by more specialists. Respondents stated that the relative complexity of Medicare patients made the development of care plans more difficult and slower than expected. Second, several PCPs (often those participating in virtual panels) reported that they face technological challenges associated with sharing the data necessary for care coordination and management. Although all participating PCPs have access to CareFirst's iCentric platform, they use their own medical records to treat patients because they contain the most up-to-date and complete patient information. Each practice in a panel can have its own electronic or paper-based health record, making information-sharing and collaboration difficult.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which CareFirst implemented its HCIA initiative. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

As of April 2014, CareFirst had successfully implemented four of its five program components, including (1) attributing Medicare patients to panels, (2) assigning illness burden scores to attributed patients, (3) developing care plans for high-risk beneficiaries, and (4) coordinating care for beneficiaries with care plans. (The fifth component—paying financial incentives to eligible providers—is expected to begin in July 2014.) However, not all components were implemented on the expected timeline: CareFirst experienced significant implementation delays due to problems obtaining complete data for patient attribution (which were acquired in June 2013), so all subsequent program components were also delayed by approximately one year until program launch in August 2013. Several data issues have yet to be fully resolved. Specifically, CareFirst has not been able to adequately distinguish primary payer status and beneficiaries are not consistently appearing in the monthly enrollment files. CareFirst reports that it continues to work through these data issues and to refine the data delivery process with the Centers for Medicare & Medicaid Services. Due to the delay in obtaining patients' data, panels were still ramping up the number of care plans in May 2014 and respondents expressed

concern about their ability to demonstrate program impacts over the remaining period of the award.

As discussed previously, panels have demonstrated flexibility in identifying high-risk participants to receive care plans and in deciding how to target resources to improve patients' care, while still demonstrating a strong degree of fidelity to the commercial program on which the HCIA-funded initiative is based. Dosage was not relevant as an outcome measure for this program.

## **B. Program reach and spillover**

As of March 2014, a cumulative total of 841 participants had received care plans, 503 of whom were enrolled during the first quarter of 2014. Its projected target for this quarter was 954 care plans. The increase in the number of care plans in early 2014 has been driven by the 33 LCCs now active in the field. CareFirst expects LCCs to add two or three new participants to their caseloads each week until they reach capacity at 40 to 50 care plans per LCC. CareFirst continues to recruit additional staff to support its enrollment efforts. As of March 2014, it had begun to recruit 11 additional LCCs, four case managers, and two program consultants.

Some spillover seems to have occurred: the HCIA initiative appears to influence the way panels provide care to patients who are not enrolled in the program and do not receive care plans. Although it varies by practice, several practices have instituted changes for all of their Medicare patients, rather than only those receiving care plans. One practice hired nurses dedicated to focusing on care management and transitional care planning, aiming to improve patients' outcomes and reduce costs. They also conduct a comprehensive review of medical records before each patient comes in for a visit, treating sick visits like a comprehensive care visit and aiming to close gaps in care by offering screenings based on a set of clinical quality measures. Another practice allocates time for an administrative staff member to assist LCCs with additional risk assessment screening and medication reconciliation for all of its Medicare patients.

## **C. Sustainability and replicability**

Respondents indicate that one key to sustainability is that PCPs must be regularly compensated for the additional time that it takes to coordinate care for Medicare patients. Outcome Incentive Award (OIA) payments to participating panels will be made from HCIA funds during the HCIA initiative, so these would have to continue through a different mechanism after the HCIA initiative ends in order to sustain the program for Medicare patients. To date, other funding has not been identified.

CareFirst's HCIA initiative also seeks to demonstrate the replicability of its existing commercial PCMH model for its older and sicker Medicare patients. CareFirst is using the HCIA initiative to demonstrate that the iCentric data platform it set up on the commercial side can be extended to the Medicare population and scalable to handle a larger patient population in the future.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

PCPs and LCCs report that the HCIA initiative has had a generally positive effect on providers' satisfaction and behavior. PCPs' satisfaction with the program depends largely on finding a good fit with the LCC for that panel, and those we interviewed indicated that it is rare for a practice to request a new LCC for their panel. PCPs also reported that the HCIA initiative has enabled them to make process-related changes in how they treat Medicare patients: it has enabled them to spend more time with patients and made them aware that they can do more to manage their care. Program consultants and regional care coordinators report that providers are increasingly receptive to using data to inform their clinical decision making. Since the HCIA initiative began, respondents indicated that providers are now actively trying to keep patients from having unnecessary hospitalizations and avoidable emergency department (ED) visits.

One of the primary challenges that PCPs have encountered since implementing the HCIA initiative has been the increased demand on their time. Providers reported that it takes more time to coordinate care for participants with a care plan, to communicate with LCCs and program consultants, and to review and sign off on their care plans. Program consultants also noted that, although all PCPs have access to the Searchlight reports, some providers do not access them because of the additional time it takes to review the data. Program consultants try to reduce the burden on providers by scheduling training sessions to walk them through the reports and to identify actionable themes, as well as by running reports and providing a synthesis on requested reports.

### **B. Perceived effects on patients**

Respondents reported that, because of the delayed start of the HCIA initiative, it is too early to determine whether the HCIA initiative has had an impact on patients. However, they acknowledge that anecdotal evidence suggests that the program is having a positive effect during this early phase. Benefits to participants who receive care plans include ongoing engagement in the management of their chronic conditions, greater patient satisfaction, better care coordination across providers and settings, and timely access to providers. Weekly follow-up calls from LCCs offer patients the support they need to manage their chronic conditions and to meet their care plan goals. Patients continue to learn self-management skills, such as healthy eating; taking classes; adhering to medications; and testing for diabetes, asthma, and other chronic conditions. In addition, LCCs and PCPs report that they have been able to help patients avoid hospitalizations and ED visits. When a participant calls the LCC with an urgent care need, the LCC will attempt to schedule a same-day appointment with the PCP or direct the participant to an urgent care facility, as appropriate. LCCs will also proactively check in with more complex patients every few days to see how they are doing and will send physicians emails to notify them if something needs their immediate attention.

## **VII. Conclusions**

Two years into its three-year program agreement (and one year after implementing the program), CareFirst successfully implemented the five care components of its HCIA initiative, with plans to implement the payment component in July 2014. CareFirst's implementation process recognizes the importance of including engaged and experienced PCPs, recruiting 14 of



its most engaged panels to participate in the HCIA initiative. The implementation of the program also relies heavily on data, using program consultants to help providers improve care delivery and providing PCPs and LCCs access to detailed reports through the online portal. CareFirst sets eligibility guidelines and develops tools to help panels select patients for enrollment, though. However, panels have some latitude in selecting high-risk participants for care plans and in deciding how to dedicate resources to best improve care for patients in their panels. The HCIA initiative has achieved high levels of PCP engagement and participants' satisfaction through the use of LCCs to coordinate care for high-risk Medicare beneficiaries. PCPs and LCCs have also identified the challenges associated with coordinating care for patients with complex care needs and continue to dedicate resources to support them, such as in-home monitoring and behavioral health services. CareFirst's HCIA initiative seeks to demonstrate the replicability of its commercial PCMH model for an older, sicker Medicare population, as well as the capabilities of its interoperable data platform for scaling the program to other populations in the future. However, due to initial implementation delays, some respondents expressed concern about the ability to meet original target program goals within the shortened operational time frame.

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**COOPER UNIVERSITY HOSPITAL AND CAMDEN COALITION OF HEALTH CARE  
PROVIDERS**

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## COOPER UNIVERSITY HOSPITAL AND CAMDEN COALITION OF HEALTH CARE PROVIDERS

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of Cooper University’s (CUH’s) and Camden Coalition of Healthcare Provider’s (Camden Coalition’s) Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, nearly two years after program award. We based this summary on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted over four days in April 2014. The site visit included interviews with the CUH program leaders and frontline staff, as well as community providers that interact with participants but are external to the HCIA program. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of implementation.

### II. Overview

In this section, we provide a summary of the CUH primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) CUH received a three-year, \$2.8 million award to expand the care coordination program it operates in Camden, New Jersey. This community-based intervention targets people with high rates of inpatient utilization and uses multidisciplinary care teams to help program participants stabilize their medical and social conditions. Program staff work with participants for an average of 60 to 90 days, aiming to reduce the need for costly acute care services, improve health outcomes, and meet patient-centered goals. CUH estimates that it can reduce participants’ inpatient and emergency department (ED) costs by 35 percent. Combined with expected increases in primary care, specialty care, and medication expenditures resulting from improved care coordination and care management, CUH estimates that it can reduce the total health care costs of its participants by 30 percent.

**Table 1. Summary of CUH primary care redesign program**

Awardee’s name	Cooper University Hospital
Award amount	\$2,788,457
Implementation date	October 2012
Program description	<ol style="list-style-type: none"> <li>1. Identify high utilizers using municipal health information exchange (HIE) and hospital electronic health record (EHR) systems</li> <li>2. Deploy multidisciplinary care teams to help participants manage medical and social conditions</li> <li>3. Transition participants to primary care medical homes after 60 to 90 days</li> <li>4. Leverage health information technology (IT) to document encounters and improve program operations</li> </ol>
Innovation components	Care coordination, care management, transitional care, health IT
Intervention focus	Individual
Workforce development	Hired nurses, social workers, and community health workers to form mobile care teams
Target population	Medicare and Medicaid beneficiaries with chronic conditions who have high utilization of inpatient services
Program setting	Community
Market area	Local
Market location	Urban (Camden, New Jersey, a federally designated medically underserved area)
Core outcomes	<ul style="list-style-type: none"> <li>• Reduction in inpatient stays and ED visits, resulting in a reduction of inpatient and ED costs of 35 percent</li> <li>• Increase in appropriate use of primary care, specialty services, and medication resulting in a reduction in total health care costs of participants by 30 percent</li> </ul>

Source: Review of CUH program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

### III. Operational update

In this section, we provide an update on the operational aspects of the CUH primary care redesign program as of April 2014 (see Table 2). CUH’s intervention identifies participants using a citywide health information exchange (HIE) and inpatient electronic health record (EHR) systems; a triage specialist manually verifies eligibility through the EHRs before enrollment. To be eligible for the program, participants must be from 19 to 80 years of age, have two or more admissions in six months to one of Camden’s hospitals, have two or more chronic conditions, and have health insurance. Participants must also meet at least two of the following five criteria: (1) five or more outpatient medications; (2) difficulty accessing services; (3) insufficient social support at home or in the community; (4) mental health comorbidity; and (5) active user of drugs or is homeless. Participants with admissions related to oncology, pregnancy, acute disease, injuries, surgeries for acute conditions or injuries, chronic conditions for which there is limited treatment, and mental health issues with no comorbid conditions are excluded. Administrators recently started to allow pregnant women and patients from an additional zip code (08107) into the program.

In March 2014, administrators piloted a randomized controlled trial (RCT) and assigned an enrollment manager to randomize patients admitted to CUH and identified as eligible into treatment and control groups. Full implementation of the RCT, which will include randomization of eligible patients also admitted to Our Lady of Lourdes Medical Center, will begin in June 2014.

Each enrolled program participant is assigned to a licensed practical nurse (LPN), who takes the lead on medication reconciliation, self-management support, setting goals, and development of a care plan. Community health workers and health coaches assist participants with identifying social services and navigating the health system, such as scheduling and accompanying them to medical appointments. Care teams see each participant at least once per week over a 60- to 90-day period. The program allows for extended engagement of care (longer than 90 days) to address complex issues, such as homelessness, substance abuse, or behavioral health. Care teams can also use a social worker and intervention specialist to assist participants with complex needs.

**Table 2. Status of operational aspects of CUH primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. Patient identification and enrollment process	Receive list of high utilizers from Camden HIE and review EHRs to determine eligibility; approach eligible patients in hospital setting
	2. Care coordination and care management activities	Focused on defining roles and streamlining workflow process
	3. Community outreach activities	Launched a campaign to engage primary care providers (PCPs) to provide follow-up visits within seven days of discharge

Table 2 (continued)

Operational aspects	Program components	Current status
Self-monitoring and evaluation	Data dashboard	Helped identify barriers in implementation and progress toward program goals
	Randomized controlled trial (RCT)	Began pilot phase in March 2014; implementation phase from June 2014 through June 2015
Target population	Eligibility criteria	Started to allow pregnant women and patients from another zip code (08107) into the program
	Reach	Enrolled 231 participants from inception until April 2014
Workforce development	HCIA-funded hires	Hired program manager and explored options for behavioral health staff
	Externally funded hires	Hired enrollment manager and triage specialist

Source: Interviews with CUH program staff and review of program reports, April 2014.

Administrators encourage frontline staff to document the details of their daily activity with patients in the field, which are tracked and used for self-monitoring activities. Program managers use the data collected by care teams in several ways, including to identify and address implementation challenges and to develop strategies for increasing efficiency. Several metrics that CUH reported in its most recent quarterly report (January–March 2014) include the following:

- Acceptance rate, defined as the number of patients who enrolled divided by the number of patients asked to enroll (78 percent acceptance rate, above the target of 75 percent)
- Proportion of patients with a home visit within 72 hours of discharge (44 percent with a home visit in 72 hours, below the target of 60 percent)
- Proportion of patients with a primary care provider (PCP) follow-up visit within seven days of discharge (38 percent with a PCP follow-up visit in seven days, above the target of 30 percent)
- Total number of hours devoted to patients per week (144 hours per week, below the target of 200 hours)

A dashboard of these metrics helps staff communicate progress on program goals and prioritize participants’ activities each day. For example, CUH hired (non-HCIA funded) staff dedicated to patient enrollment and launched a 7-Day Pledge outreach program in the fourth quarter of 2013 to increase the proportion of participants with a PCP follow-up visit within seven days of discharge. Administrators also hired a program manager to reduce the administrative burden on care teams so that team members could increase the number of hours they spend with participants and the number of patients receiving home visits within 72 hours. In the future, program administrators hope that the dashboard will automatically alert staff to complete each of these critical aspects in the workflow.

In addition, program administrators changed management and supervisory activities to streamline communication with and among care team members. For example, administrators replaced the team’s daily case conference—which typically ran for 90 minutes—with a 15-

minute morning huddle that focuses on past successes and the goals to achieve that day. A clinical supervisor also meets individually with LPNs at the end of each day to offer guidance in care planning.

CUH administrators continue to make staffing changes to support the intervention. The program has experienced minimal staff turnover, with an employee retention rate of 93 percent. (Potential reasons for this high retention rate are discussed in Section IV.C). Using its HCIA funds, CUH hired a program manager in the first quarter of 2014 to help care teams streamline workflows and prioritize daily activities. Program administrators also plan to use HCIA funds to contract with a behavioral health provider in the final year of the program. In addition, CUH secured external funding to hire an enrollment manager and triage specialist to help identify patients and enroll them in the RCT. By April 2014, CUH had enrolled 231 participants (80 percent of the projected 290) into the HCIA program. In the first three months of 2014, the program enrolled 39 people (17 percent of the 231 enrollees).

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

##### **A. Implementation process**

Three implementation process factors have facilitated the implementation of the CUH program: (1) engaging other stakeholders, (2) ongoing monitoring of progress to guide improvement, and (3) teamwork among program staff.

First, engaging other stakeholders has helped program staff identify potential participants, connect participants to community services, avoid duplication of services, and collaborate with community providers. The relationships that CUH staff have built with local hospitals and post-acute care facilities have enabled them to incorporate the HIE and EHRs into their patient identification and enrollment processes. Building this HIE enabled CUH staff to use external clinical data to identify high utilizers in the community, which is fundamental to their intervention model. In addition, the program staff continue to foster professional networks with other service providers in the community—such as housing agencies or durable medical equipment providers—which enables participants to obtain needed resources more quickly. Although Camden-area primary care and specialist providers are not part of the HCIA program, their cooperation is essential to its success. Finally, program staff reported that the 7-Day Pledge outreach campaign to encourage PCPs to schedule patients' follow-up visits within seven days of discharge is going well. However, it is too early to tell whether or how much the campaign will increase the percentage of patients who receive timely follow-up visits.

Second, the CUH program collects and analyzes self-monitoring data to help program managers identify inefficiencies in program implementation and communicate progress toward meeting program goals. Although data managers reported that they have seen an increase in the number of hours the care team spends with participants after introducing the dashboard, frontline staff noted that the time associated with data documentation can be burdensome. As a result,



program managers are working with care teams to enable data entry in the field and to remove data fields that are not as useful for self-monitoring or program reporting.

Third, respondents cited team characteristics, including staff flexibility and group problem-solving as facilitators that help care teams meet program demands. For example, care teams have an open office space and friendly atmosphere that promotes informal collaboration across teams and staffing levels. The care team convenes in a morning huddle to discuss recent patients' successes and upcoming goals, which helps build confidence for the issues to be tackled that day.

Dedicating sufficient resources for program support has been the primary implementation challenge for CUH. HCIA funds do not fully support the administrative expense of CUH's program; Camden Coalition leadership, Camden HIE staff, and Camden Coalition performance improvement staff contribute in-kind support to the program. Administrators noted that they used other grant funding to cover initial administrative costs. The use of in-kind resources from the Camden Coalition distorted the true cost of the intervention and complicated sustainability plans. In addition to funding program support staff not covered under the HCIA, administrators could use additional resources to provide more training to staff and to augment organizational capacity. Using carry-over HCIA funds, CUH will contract with a behavioral health provider to address the complicated mental health and substance abuse issues of its participant population that the care team has found difficult to resolve.

## **B. Program characteristics**

Two characteristics of the CUH initiative have helped staff implement the program: (1) use of external sources for innovative processes and (2) adaptation of the program to meet patients' and staff needs. CUH staff have integrated ideas from other sources to inform their leadership and management strategies, as well as their clinical interventions. Management teams are organized into dyads—with one member focused on clinical issues and the other on management issues—that comanage each department. The Camden Coalition leadership team recently explored concepts from the Aravind Eye Care Hospital as a model for increasing participant volume and efficiency, while maintaining a focus on quality. For innovation in care coordination and care management, CUH staff continually exchange ideas with other high-utilizer programs, such as other HCIA sites administered by the Center for State Health Policy at Rutgers University.

The second program characteristic that facilitates implementation is CUH's effort to adapt the program to meet patients' and staff needs. The program's core elements include data-driven patient identification and relationship-based care management. However, CUH staff have adjusted other aspects of the intervention design, such as expanding enrollment criteria to increase participant volume and allowing complex patients to stay in the program longer than 90 days to improve outcomes. For example, program administrators now permit pregnant women and residents of an adjacent zip code to participate in the program. Frontline staff can also amend the care plan if a patient's circumstances or goals change, which staff believe helps to engage participants who were not previously making progress on care plan goals. Finally, program administrators reduced the length of regular meetings, freeing the care team to go into the field earlier in the day, and enhanced staff support by hiring a program manager.

The complexity of CUH's position as a service coordinator, rather than a direct-care service provider, simultaneously supports and challenges implementation. Program administrators reported that their role as service coordinators enables them to work with health systems and public agencies in Camden that might otherwise view them as competitors. However, CUH staff also face hurdles in enrolling patients in the hospital setting because they are not affiliated staff. For example, some patients are unfamiliar with their services or uncomfortable with nonhospital staff examining their medical records. Hospital- or clinic-based care management services might be initially more recognizable and welcomed by participants.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located, can also influence implementation. Two internal factors have facilitated the implementation of the CUH program: (1) leadership commitment and (2) program culture.

First, CUH leadership facilitate implementation by offering and modeling policies that promote work–life balance, given the demands that are associated with working with a high-utilizer population. Administrators encourage frontline staff to practice self-care and to take the initiative in planning team-building activities.

Second, all members of the organization take seriously their culture of servant leadership. Staff view their mission as working with participants, starting where they are, rather than imposing objectives on them. Staff reported that this concept of supporting a patient to do what he or she is ready to do is central to the intervention. As one staff member stated, “We treat them as human beings, whereas medical providers or hospital staff [might see] the condition and what they might not be doing ... when you go in [without judgment] and you treat them with dignity and respect, you get a response.”

The lack of organizational capacity is the main internal contextual challenge. Respondents reported that a lack of managerial support within the organization decreased staff satisfaction and care team effectiveness. Program administrators recently hired a mid-level program manager and a chief operating officer to provide staff more guidance in how to optimize their daily tasks, discuss the challenges with their jobs, clarify accountability across care team roles, and help the program operate more smoothly.

Three external factors present challenges to program implementation: (1) the intensity of participants' needs, (2) the technological environment in Camden, and (3) Camden's under-resourced health care infrastructure. Participants' needs are intense, involving chronic social issues that often prevent people from self-managing illnesses and seeking appropriate treatment. These social issues include unstable housing; poor living conditions; criminal records; lack of identification; transportation; and low levels of literacy, English language proficiency, and education. Care teams also struggle to help patients overcome adverse childhood events and prior negative experiences with the health care system. Respondents agreed that, although rewarding, working with this population can be emotionally draining. As one respondent stated, “The work will have an impact on us... We have to recognize that and manage that. Part of it is taking care of yourself; you need to be stable to engage people that are coming to you with a lot of needs.”

Program leadership is aware of the need to prevent staff burnout and they encourage staff to develop boundaries with patients and to practice self-care.

The technological environment in Camden also complicates program implementation. Program administrators consider EHRs to be important tools for the intervention, but acknowledged that the variability in adoption and quality of EHRs in city health systems complicates patients' identification, enrollment, and care coordination activities. Internet dead zones in Camden are common, hindering the care team's ability to document activities in the field, which reduced data collection efficiency (and contributed to staff burden). In addition, patients who lack access to a telephone have difficulty performing basic patient navigation tasks, such as calling to make a medical appointment or to confirm a home visit with a care team member. Because telephones are vital to successful care coordination and management, frontline staff help participants enrolled in Medicaid apply for a free cell phone. However, staff reported that people with unstable housing or without a secure storage option have difficulty maintaining possession of the cell phones.

Finally, the general health care environment in Camden complicates program implementation. Respondents reported that the primary care landscape in Camden is under-resourced and poorly delivered; long waiting lists exist for services such as drug rehabilitation and mental health specialists and the medical system tends to blame the patient for nonadherence, rather than seeking to discover the reason for a patient's actions. Care team members reported that it can be difficult to rebuild relationships between patients and providers because of previous negative experiences with an under-resourced health care infrastructure.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which CUH implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

CUH has implemented all program components on schedule, including identifying participants through the HIE and EHR systems, medication reconciliation, self-management support, and the delivery of care coordination and care management services. The program continues to build infrastructure and internal capacity for the third year of the program, such as hiring a behavioral health clinician and ramping up enrollment to support the RCT.

As discussed previously, CUH has shown flexibility in implementing its program design, deviating from original plans in ways that appear to more effectively reach participants and improve care. One program administrator noted that they embrace the HCIA program's focus on innovation: "We have no fidelity to the model because we don't know the right way to do this. We know that you ... have to build a stable, trustworthy relationship with [participants], and you have to help them navigate through a complicated system and teach them to be independent. That's a pretty tall order. How to do that and who does that is totally up for grabs. We have not figured that out." Administrators use a data-driven, rapid-cycle feedback approach to continuously refine and improve the workflow and intervention model. For example, program

administrators are considering whether and how to begin the intervention at a patients' bedside, rather than waiting until discharge. Although this change diverges from the planned design to work with participants in their homes, administrators recognize the advantages of implementing an inpatient component to the intervention.

CUH staff emphasized the short-term and intensive nature of the intervention, while also recognizing that it will take longer to address the complex needs of a subset of program participants. As noted earlier, staff allow participants to extend program participation (longer than the expected 90-day limit) on a case-by-case basis. Program staff aim to increase the proportion of all participants (44 percent) who receive an initial home visit within three days of discharge and will seek to maintain the proportion of participants (38 percent) who see a PCP within seven days.

## **B. Program reach and spillover**

As of March 2014, the CUH program had enrolled 231 participants. Participants have an average of seven chronic conditions; the most common are hypertension, diabetes, depression, and anxiety. In addition, 25 percent of participants enrolled in the first quarter of 2014 have a language barrier and about 7 percent are homeless. The maximum caseload for LPNs is 25 participants, but as of April 2014, neither LPN was at full capacity. With the new enrollment specialist hired to recruit people to participate in the RCT, program administrators hope to enroll 12 new participants per week beginning in March 2014, with 6 assigned to the intervention group and 6 to the control group. Program staff reported that the enrollment specialist has been effective in connecting and communicating with potential participants in the hospital and believe CUH will reach the target enrollment rate.

Despite the expected increase in enrollment, CUH staff believe they will still reach only a small proportion of eligible patients in Camden who could benefit from program services. They estimate that there are from 800 to 1,500 additional patients who would meet the enrollment criteria and could benefit from program services. Staff aim to maintain a balance between efficiency and effectiveness as they expand enrollment within the existing infrastructure. As one staff member described, "As we're getting better and more efficient, we can see more people but still deliver ... high quality services and fill a need that doesn't really exist in the community. We try to not duplicate other services; we instead try to connect [participants] to other resources ... and try to catch everyone in the city and work together and be transparent about it. I think that is something [the HCIA] has helped us to do."

Program staff also reported being active in the Camden community and continuing several longstanding partnerships to strengthen the local primary care infrastructure. By providing salary support, HCIA funds have likely strengthened these community efforts and had a positive indirect effect on nonenrolled patients who receive care in the community. In addition, program staff have engaged social service and behavioral health agencies, primary care practices, and other community organizations at the program's monthly citywide meetings, bringing together community members to discuss the most appropriate use of resources to provide care to high-cost, high-needs patients. Program staff have also met with the mayor of Camden to discuss housing issues and promote funding for housing. Several care team members also spend a portion of their time working on the 7-Day Pledge Campaign, which they hope will improve care

for participants and nonparticipants by aiming to treat all recently hospitalized patients sooner after discharge.

### **C. Sustainability and replicability**

CUH administrators and staff spoke broadly about plans for sustainability, explaining, “If we can demonstrate that the value of what we do is greater than the cost to do it, there will be a path to sustainability.” Administrators believe that program sustainability will require a mix of federal grant funding and reimbursement from public and private payers to support the types of care coordination and management services they provide. Program administrators are also exploring the benefits of becoming an accountable care organization as a model for sustainability. In the short run, program staff are focused on maximizing the efficiency of the services they provide, while strengthening the health care delivery system in Camden and New Jersey.

Program administrators are committed to developing protocols and disseminating program components so that others can replicate their model. The development of protocols entails carefully documenting each aspect of the workflow process, such as the steps in pre-enrollment and the care planning processes. Although still in development, these protocols will vary by the clinical diagnosis, social needs, and complexity of the participant; program managers will then review the protocols to determine the best-suited frontline staff person for each task. In the future, program administrators may also assign a recommended length of time for completing each step in the process. Program administrators disseminate materials in several ways and promote cross-site learning with the Rutgers awardees and other community organizations. Every other month, CUH staff host an in-person open house for people from around the country to learn more about how the model is being implemented. They also share program materials—such as workflow, job descriptions, team structure, and enrollment forms—on their website as appropriate so others can use or adapt their tools as a guide.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

The program appears to affect the way that community providers interact with program participants, even though these providers are not funded under the HCIA or directly included in program operations. For example, respondents noted that participants’ clinical encounters now run more smoothly, with providers more engaged in their visits. One provider whose patients include program participants appreciated that care team members could help address participants’ psychosocial issues, which enabled him to focus on their medical conditions, stating “When I’m in the clinic and the patient shows up with [a care team member], I breathe a sigh of relief because ... I don’t know how to fix the psychosocial things. And [now] there’s someone there that knows how to navigate the system for them.... It’s not only good for the patient, it’s good for the doctor.”

The primary challenges to staff satisfaction relate to the demands of working with a high-utilizer population. Despite a high level of commitment and collaboration among staff, it can be challenging to work with patients whose health might not improve and who require additional emotional support. Administrators support frontline staff by improving the paid time off policy, encouraging work/life balance, modeling behaviors such as normal working hours and paternity

leave, and planning several morale-building activities. Administrators are also developing a training series to enhance staff members' clinical skills, harm-reduction approaches, and motivational interviewing. In addition, care team staff provide support for one another by discussing challenging cases and offering recommendations for dealing with a challenging situation.

## **B. Perceived effects on patients**

Frontline staff and administrators reported that the program appears to have an initial and beneficial effect on participants in two main areas: (1) empowering participants to engage in patient-centered care and (2) avoiding unnecessary ED visits or hospitalizations. First, program staff reported that many participants form trusting relationships with care team staff during the intervention, empowering them to better navigate the health care system or set and meet appropriate goals for their health conditions. According to one clinician, care team members are able to change participants' attitudes about the health care system: "If you have [a care team member] that is generally interested in you and is there to help you against all of the odds ... I think it changes the attitude.... My impression is that patients are more upbeat, positive, and motivated to make contributions to their health." Several respondents noted that a participant's engagement with care team members, and with primary and specialty care providers, has been a key aspect of changing the way that they seek less costly care when appropriate. In addition, staff think their ability to coordinate more timely access to appropriate primary care services helps to prevent avoidable ED visits and inpatient stays. For example, program staff reported cases in which checking in via telephone or arranging for a same-day urgent care visit prevented an ED visit, or in which as part of a patient's care plan they worked with the patient to diminish reliance on the ED for primary care. Respondents have observed a higher rate of PCP follow-up visits among program participants, compared with the follow-up rate among those not enrolled in the program.

## **VII. Conclusions**

Two years into its three-year program agreement, CUH has successfully implemented all components of its HCIA program, though enrollment has been lower than expected. Program leaders have engaged stakeholders in the Camden community throughout the implementation process and used detailed monitoring and feedback processes to guide continuous improvement of the intervention. As the core program elements of data-driven patient identification and relationship-based care management remain constant, administrators continue to modify the program by expanding enrollment criteria, developing a process for extended participant engagement, and changing workflow and administrative staffing to better support the care teams. CUH staff identified several areas for further improvement in program year three, including strengthening organizational capacity, devoting new staff resources to unmet behavioral health needs, and advocating for resources and infrastructure in the Camden community. They are also developing protocols and disseminating program components so that others can adapt their model. To ensure the program is sustainable, program leaders are seeking payment models that reimburse for care coordination services and exploring the benefits of becoming an accountable care organization.

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## DENVER HEALTH AND HOSPITAL AUTHORITY

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of Denver Health and Hospital Authority’s (Denver Health) Health Care Innovation Award (HCIA) primary care redesign program, 21st Century Care, as of July 2014, two years after the program award. It is based on a review of the awardee’s quarterly reports, information collected during the first-round site visit conducted May 27–29, 2014, and subsequent communication with program administrators in July 2014. The site visit included interviews with staff at two of three high-risk clinics and interviews with staff at two of Denver Health’s eight community health center clinics. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the Denver Health primary care redesign program, 21st Century Care (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) Denver Health, the largest provider of health care to Medicaid beneficiaries and uninsured patients in Colorado, received \$19.8 million in HCIA funding to transform its primary care delivery system to more effectively meet its patients’ medical, behavioral, and social needs. Denver Health implemented 21st Century Care primarily in its community health centers’ family medicine, general internal medicine, and general pediatrics clinics, and has created three new high-risk clinics for the system’s highest-risk patients. The program’s overarching aims are to improve patients’ health outcomes by 5.0 percent, increase patients’ satisfaction with between-visit care by 5.0 percent without decreasing visit-based care satisfaction, and decrease the total cost of care by 2.5 percent.

**Table 1. Summary of Denver Health primary care redesign program**

Awardee’s name	Denver Health and Hospital Authority
Award amount	\$19,789,999
Implementation date	October 29, 2012
Program description	<ol style="list-style-type: none"> <li>1. Stratify patients based on risk to more efficiently allocate additional resources</li> <li>2. Redesign Denver Health’s primary care system</li> <li>3. Leverage health information technology (IT) to provide between-visit support</li> <li>4. Create high-risk clinics to provide individualized care to patients with complex care needs</li> </ol>
Innovation components	Care coordination, care management, patient navigation, risk stratification, workflow or process redesign, population health approach to primary care, and health IT
Intervention focus	Practice
Workforce development	Added new staffing positions to expand the capacity of Denver Health’s community health centers and to create three new high-risk clinics for patients with complex care needs
Target population	Primary care users with a focus on adult and pediatric high utilizers with chronic conditions and/or behavioral health disorders
Program setting	Provider (community health centers and high-risk clinics)
Market area	Local (Denver, Colorado)
Market location	Urban
Outcomes	<ul style="list-style-type: none"> <li>• 2.5 percent decrease in the total cost of care</li> <li>• 5.0 percent improvement in patients’ health outcomes</li> <li>• 5.0 percent increase in patients’ satisfaction with between-visit care</li> </ul>

Source: Review of Denver Health program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

The 21st Century Care transformation plan includes four key components: (1) stratify patients into four tiers based on their risk of physical and behavioral health issues and their utilization history, and assign each tier to an appropriate level of intervention support; (2) redesign Denver Health's primary care delivery teams by adding new staff positions, including patient navigators, clinical pharmacists, registered nurses, and licensed clinical social workers; (3) leverage health information technology (IT) to provide between-visit support; and (4) create three high-risk clinics to provide individualized care to patients with the most complex conditions. Each high-risk clinic has a different care model and target population. The clinic for children with special health care needs (CSHCN) works with children with multiple chronic needs. It is a specialty consult service designed to wrap around primary care and provide clients with access to a multidisciplinary clinical team. The intensive outpatient clinic (IOC) is a primary care clinic that focuses on high-risk adults with a primary physical diagnosis and multiple comorbidities. The third high-risk clinic is located at the Mental Health Center of Denver (MHCD). HCIA funding was used to expand MHCD's community-based case management services to 100 additional adult patients with severe mental health conditions and two or more hospitalizations in the previous year.

### **III. Operational update**

In this section, we provide an update on the operational aspects of the Denver Health primary care redesign program, 21st Century Care, as of July 2014 (see Table 2). Patients are stratified into four tiers based on their risk of physical and behavioral health issues and the services they use. Denver Health continues to improve its tiering algorithm, most recently by incorporating Clinical Risk Group codes to refine assessments of patients' health risk. Denver Health performed a predictive modeling analysis using historical data to measure how well the algorithm predicted future adult utilization, stratified by tier. According to program administrators, this algorithm performed better than a publicly available risk scoring utility known as CDPS, which is used by Colorado Medicaid for risk adjustment.

With regard to redesigning primary care delivery teams, Denver Health has continued to work with award-funded staff in all eight community health centers to refine work roles and responsibilities and to incorporate these new staff members into the existing care delivery teams. In particular, Denver Health has focused on developing standard roles for patient navigators, because many other providers and staff in the community health centers were initially unfamiliar with patient navigators and what they could contribute to the clinics. Use of health IT for between-visit support remains another focus of the program. Denver Health has implemented five text messaging initiatives (known as eTouch programs) since award inception, along with a new process to collect patients' informed consent to receive electronic communications. The eTouch program messaging includes appointment reminders, diet support for healthy eating behavior, flu vaccine reminders, well-child check reminders, and a tobacco cessation support program. As of June 30, 2014, Denver Health had sent 219,847 program messages (not including enrollment invitations) to 20,592 patients. Finally, Denver Health has continued operating two high-risk clinics, staffed with multidisciplinary teams, to care for the system's patients with the most complex needs and the MHCD continued operating the third high-risk clinic. Although Denver Health has not added any new positions to the program in calendar year (CY) 2014, it has remained focused on retaining staff in positions funded by the HCIA award. As of July 2014, award funding covered the salaries of 21.4 full-time equivalent (FTE) patient navigators, 3.0

FTE clinical pharmacists, and 3.0 FTE nurse care coordinators. HCIA funds also support 11.6 FTE health IT positions. Behavioral health consultants, who had previously been funded by the HCIA award, are now operationally funded, as Denver Health begins to transition positions to other funding sources in order to sustain 21st Century Care when the HCIA award period ends.

Denver Health offers nine training courses for staff, most of which offer general training, such as new employee orientation. Staff have completed more than 8,000 hours of total training; 1,084 of these training hours have occurred in CY 2014. Denver Health employees have also participated in a patient navigation training course run by the University of Colorado, which 15 HCIA-funded staff have completed.

**Table 2. Status of operational aspects of Denver Health’s primary care redesign program, July 2014**

Operational aspects	Program component	Current status
Innovation components	1. Implement risk stratification	Risk-stratification has been a dynamic process with Denver Health continuously making improvements to algorithms to more accurately identify high-risk patients who would benefit from care coordination services.
	2. Redesign primary care delivery teams	Denver Health has added staff to all eight community health centers and continues to clarify the roles and responsibilities of these new staff in relation to other members of the multidisciplinary teams.
	3. Leverage health IT to provide between-visit support	Denver Health has sent 219,847 eTouch text message reminders (not including enrollment invitations) to 20,592 patients, as of June 30, 2014.
	4. Create high-risk clinics for patients with complex conditions	All three high-risk clinics have been operational since April 2013.
Workforce development	Staffing	In CY 2014, Denver Health has focused on retaining previously hired staff and transitioning award-funded positions to operational funding.
	Training	Award-funded staff completed 1,084 training hours in CY 2014, and 8,000 hours since the award began.
Patient enrollment		Denver Health’s HCIA-funded enhanced care teams served 14,387 unique patients since the program’s inception. This number includes only patients who have received personal two-way interactions, such as services delivered by patient navigators and nurse care coordinators; eTouch messaging is not included in this count.

Sources: Interviews with program staff and review of program reports, May–July 2014.

**IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

## A. Implementation process

Two process factors facilitated the implementation of 21st Century Care: (1) the addition of staffing resources to the Denver Health system and (2) a systemwide emphasis on self-monitoring and continuous quality improvement. First, Denver Health used its HCIA to expand the capacity of its primary care delivery system by adding new staff positions—including patient navigators, pharmacists, registered nurse care coordinators, and licensed clinical social workers—in its primary care clinics. These new staff members increased the system's capacity to address patients' social barriers to care, and their medical issues, by providing the additional time and expertise necessary to focus on the particular needs of high-risk patients in busy clinics. In addition, Denver Health created three new high-risk clinics, staffed by multidisciplinary teams. These clinics are specifically designed to meet the needs of patients with the most complex conditions at Denver Health.

Second, Denver Health implemented 21st Century Care using Toyota Production System's Lean methodology, a process and management improvement system that relies on self-monitoring, continuous quality improvement, and the elimination of waste. The health system had previously used the Lean methodology and recognized that the approach aligned well with the innovation aspect of the award. Using the Lean methodology involves holding frequent rapid-improvement events with 21st Century Care team leaders and frontline staff to refine staff roles, improve processes, and redesign workflows. Denver Health also piloted certain award activities to determine new interventions that would be most successful before implementing them on a larger scale. In addition, Denver Health has conducted several internal evaluations of 21st Century Care, including an analysis of how nurse care coordinators can improve their outreach to high-risk pediatric patients, how patient navigators can improve their outreach to children with asthma, how patient navigators can improve transitions of care, and a quantitative analysis of patients reached by the clinical and health IT interventions. The health system uses self-monitoring information to continuously refine 21st Century Care strategies and to ensure that the intervention targets patients who would most benefit from additional support services.

Two process-related factors that presented barriers to implementation were Denver Health's integration of patient navigators into care teams and engaging Denver Health providers not directly involved in 21st Century Care. First, it was initially challenging to integrate patient navigators into the primary care clinic care teams because some existing staff had little experience with patient navigation and the patient navigators' role was not clearly defined. Denver Health has been able to improve its execution of this piece of the program by working with clinic staff and navigators to more clearly define the role and responsibilities of patient navigators and by involving clinic staff in the hiring process for patient navigators.

Another challenge in the implementation process was engaging Denver Health providers not directly involved in 21st Century Care to make them aware of the new high-risk clinics, what types of patients the high-risk clinics serve, and how to refer patients to these clinics. Staff from the IOC and CSHCN clinics reported that initial outreach efforts—such as team leaders speaking about the new clinics during staff meetings and distributing written and electronic materials describing the new clinics—to other Denver Health providers helped raise awareness of the program. However, the IOC and CSHCN staff also acknowledged that outreach continues to be a challenge. For example, the team leader of the CSHCN clinic pointed out that some pediatricians

attempt to refer many of their patients with complex conditions to the clinic, but not all of these patients meet the clinic's stringent eligibility criteria. The referral criteria for IOC and MHCD are more automated, so providers are only allowed to refer patients if they meet strict criteria.

## **B. Program characteristics**

In addition to the implementation process factors, four characteristics of 21st Century Care facilitated the implementation of the program: (1) Denver Health's flexibility in adapting the program, (2) frontline staff's control over making their own operational adjustments, (3) the quality of evidence Denver Health used to inform program design and implementation, and (4) team collaboration in the high-risk clinics. First, Denver Health is committed to analyzing and adapting program components to ensure their effective implementation. For example, Denver Health recently piloted the use of high-risk, high-cost care coordination case conferences, which focus the attention of multidisciplinary teams on identifying and addressing factors that contribute to high utilization of hospital services by adult patients with multiple chronic conditions. Denver Health tested different case conferencing models at four community health centers and held a Lean event to develop a common set of roles and expectations for all clinics. The focus on adaptability also enabled Denver Health to refine the roles and responsibilities of patient navigators. The original patient navigator role (for those working with adult patients) focused on an intervention for a large number of moderate-risk adults with uncontrolled diabetes or hypertension. Denver Health realized that this approach failed to target high-risk patients, so administrators, with input from clinicians and other staff, redefined the patient navigators' role to focus on patients with the most intensive needs. Because patient navigator caseloads are based on daily pulls of high-need patient lists, their caseloads vary significantly day to day, based on the patient population and the eligibility criteria. Another example of the adaptability of the program is Denver Health's continuous refinement of its patient stratification tiering methodology to more accurately identify high-risk patients, such as the recent addition of pediatric behavioral health diagnostics to the tiering methodology.

Second, frontline staff are empowered to make changes to implementation strategies and activities based on the needs of their patients. For example, frontline staff in high-risk clinics reported testing different appointment lengths to better meet the needs of their patients with complex care needs, developing their own patient intake processes and forms and creating their own approaches to remind patients about upcoming appointments. This user control enabled frontline staff to continuously tailor and improve processes of care delivery.

Third, Denver Health recognizes the importance of using evidence-based guidelines and best practices in making choices about providing care. For example, in the interest of understanding different evidence-based programs for providing integrated behavioral health services and ways to use data effectively for 21st Century Care, Denver Health staff visited two integrated care clinics in Seattle, Washington. Denver Health staff also reviewed the evidence and methods for using patient navigators to help reduce barriers to care and to make care less expensive.

Finally, an important aspect of the new high-risk clinics is staff members' commitment to collaborate across multidisciplinary teams. This approach to care enables patients to see multiple professionals during one visit. Because patients at high-risk clinics often have serious barriers to accessing care—including transportation and mental health issues—staff reported that one-stop shopping for medical, behavioral, and social services improves patients' overall care compliance.

Several staff also commented that this approach provides staff with a support system to help patients with complex and multiple needs. When one provider lacks the expertise to help a patient with a particular concern, another member of the team is likely to have that expertise and can step in to assist.

### **C. Internal and external factors**

Internal characteristics of Denver Health, as well as external environmental features, influenced implementation. An internal factor that facilitated implementation of 21st Century Care was leadership characteristics. Staff reported that strong administrative leadership at Denver Health has been important in establishing goals and parameters for 21st Century Care, defining the roles of new staff (particularly patient navigators), and supporting team leaders in the community health centers and the high-risk clinics as they implemented the program. Denver Health is an integrated delivery system inclusive of primary care, specialty care, ancillary care, urgent care, emergency care, and hospital services. This structure has helped facilitate collaboration with affiliated clinics. Administrative leadership has also been vital in coordinating 21st Century Care throughout the system and determining where additional resources are most needed. In addition, at the individual clinic level, team leader physicians have played an important role in launching the new high-risk clinics and several staff reported that having these strong clinical leaders has been critical to the successful launch of the clinics.

One internal factor that presented challenges to the implementation of 21st Century Care is Denver Health's lack of an interoperable, systemwide electronic health record (EHR) system. When planning for 21st Century Care, Denver Health anticipated implementing a new EHR (independent of the HCIA award); however, an attempted roll-out was unsuccessful. 21st Century Care staff reported several health IT challenges related to Denver Health's current use of multiple, non-integrated electronic data collection systems, such as the need to design work-arounds to effectively gather and track information about patients receiving care coordination services. New plans for implementing a different EHR system are in process, but implementation is not likely to occur until after the end of the award period.

One external factor that presented challenges to the implementation of 21st Century Care is the fact that Denver Health's patients are primarily low income and face multiple barriers to health and health care, such as language barriers, financial impediments, transportation issues, and low health literacy and knowledge. Although Denver Health designed 21st Century Care to reach this population, certain patient barriers have emerged as being particularly challenging to implementation. For example, patient navigators reported that it is difficult to contact patients because many have pay-by-the-minute cell phones, which often run out of minutes and are changing their numbers constantly.

### **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which Denver Health implemented its HCIA program. As part of this qualitative evaluation, we consider the following outcome measures: (1) timeliness, fidelity, and dosage of implementation; (2) program reach and spillover; and (3) sustainability and replicability of the program.

### **A. Timeliness, fidelity, and dosage**

Denver Health has successfully implemented the key aspects of 21st Century Care on schedule, including implementing a risk stratification/tiering methodology; redesigning Denver Health's primary care delivery teams; leveraging health IT to provide between-visit support; and creating three high-risk clinics. With regard to fidelity, as discussed earlier, Denver Health is continuously adapting its operational plans to make 21st Century Care more effective in reaching patients and improving care. For example, Denver Health has held 18 Lean events to refine the roles and work processes of new staff. Denver Health has also held 10 Lean events to refine the work process and patient identification methods at the high-risk clinics. Because dosage of care for 21st Century Care is calibrated to suit the needs of each patient, with high-risk patients receiving more intensive services, there is no standard dosage measure to assess qualitatively.

### **B. Program reach and spillover**

Since the program's inception in September 2012 to the end of March 2014, 21st Century Care has reached 14,387 unique patients in Denver Health's community health centers and high-risk clinics, which is below projections by 422 patients. This number only includes direct services (so-called two-way touches) delivered by HCIA-funded staff, such as patient navigators and nurse care coordinators, to patients.

In addition, 21st Century Care has enabled Denver Health to reach patients through a new eTouch initiative, which has involved sending 219,847 text message reminders to 20,592 unduplicated patients as of June 30, 2014. These messages include appointment reminders, diet support for healthy eating behavior, flu vaccine reminders, well-child check reminders, and a tobacco cessation support program. Denver Health has slowly expanded its text message capacities, both in terms of offering new types of messages and expanding the service to all the clinics.

Program reach at the high-risk clinics has been mixed. The CSHCN clinic currently cares for about 110 patients as of September 2014. The target population for CSHCN is about 450 high-risk children, of which a much smaller portion are clinically screened and determined appropriate for the CSHCN. Clinic staff report that they are very busy and that their current patient load is set based on staffing limitations. On the other hand, current enrollment at the IOC is about 366 patients as of September 2014, which also falls short of the clinic's initial target enrollment of 400. The target population for the IOC is adults who meet high-utilizer criteria. Approximately, 1,400 patients are eligible in any given month. High-utilizers are individually targeted for services when they are admitted to the hospital. IOC staff report that it has been challenging to convince patients who qualify, many of whom are homeless and have severe mental illness, to visit the IOC rather than the emergency department (ED) when they need care. It has also been challenging to fill available placements at the MHCD high-risk clinic, where 90 of 100 slots are currently occupied. Staff attribute this shortfall to difficulties in identifying patients who meet the clinic's stringent criteria.

With regard to spillover effects, staff reported that the creation of the three high-risk clinics under HCIA funding has provided a medical home for many of the most challenging patients throughout the Denver Health system. For example, staff from IOC reported receiving positive feedback on the care coordination services they provide from other primary care clinics, the

hospital ED, and the inpatient intensive care unit. In addition, staff from the CSHCN clinic travel each month to the Eastside and Westside pediatric clinics and support providers in those clinics in the treatment and care of CSHCN. This enables these patients to remain in their medical homes while still receiving the more intensive care they require.

### **C. Sustainability and replicability**

Denver Health is working toward sustaining the transformational activities it has launched as part of 21st Century Care. To this end, Denver Health recently held a rapid-planning event to help identify core staff members who will have to be transferred from HCIA funding to internal operational support at the end of the award. This transfer process included developing a new staffing model for patient navigators, nurse care coordinators, social workers, and pharmacists to support panel management based on current patients' needs and panel composition. The team prepared a justification for each role, as well as recommended minimum staffing levels, average and risk-adjusted patient panel sizes, and optimal provider-to-staff ratios based on clinical FTEs and panel size and complexity. Denver Health used this information during a financial sustainability event in July 2014 to determine how to fund these positions, as well additional support staff, during the third year of the award and after the end of HCIA funding.

On replicability, Denver Health is committed to developing standards of work and sharing its work with others to encourage replication when appropriate. Denver Health staff have presented to numerous state and national audiences about 21st Century Care activities. Denver Health is also using lessons learned internally. For example, social workers have been added to most clinics using non-HCIA funding. They are an important component to the enhanced care team that 21st Century Care has helped build within primary care practices.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Staff reported that 21st Century Care has had a positive effect on providers' behavior, including increasing capacity to care for patients with complex conditions, many of whom previously fell through the cracks, and increasing team work across clinical and social services. However, the impact of 21st Century Care on staff satisfaction has been mixed. Several staff, especially physicians in the high-risk clinics, reported high satisfaction with the program because they are better able to meet the complex needs of their highest-risk patients due to the investment of HCIA-funded resources. In addition, many staff in the high-risk clinics reported that they enjoy working in a multidisciplinary team and that the professional collaboration is helpful. However, the program has also introduced new stresses for some staff. For example, several staff members in the IOC and CSHCN reported it is exhausting to work with such intensive, high-needs populations and at times there are difficulties setting boundaries when patients have so many medical and social needs. In addition, some staff members at the community health centers reported increased workloads associated with 21st Century Care, particularly with regard to the new case conferencing initiative.

### **B. Perceived effects on Patients**

Many staff members reported that 21st Century Care has had positive effects on patients, particularly patients' satisfaction. Several staff members also stated that efforts by patient



navigators and social workers to address barriers to care, such as transportation, have increased access to care. In addition, many staff conveyed that care compliance among patients in the high-risk clinics has improved because patients meet with several members of the multidisciplinary teams of providers during the same visit. Finally, staff shared multiple examples of cases in which they were able to help patients avoid an unnecessary hospitalization or ED visit by arranging for a same-day office visit. Some staff speculated that 21st Century Care might be decreasing the use of unnecessary inpatient services for high-risk adults, but increasing the total cost of care, particularly for high-risk children, because program participants are using more services and getting better care than before.

## **VII. Conclusions**

Denver Health has successfully implemented the key components of its HCIA program, with several adaptations based on the results of continuous monitoring and the convening of stakeholders to discuss how to maximize the impact of the award. Most significantly, Denver Health refined the roles and responsibilities of patient navigators to better integrate them into the multidisciplinary care teams at the community health centers and high-risk clinics. In addition, Denver Health introduced a new case conferencing intervention for high-risk, high-cost adult patients to identify and reach out to those who could benefit from intensive care coordination services. The three high-risk clinics continue to improve their operations, with frontline staff making changes as needed. Denver Health staff perceived that 21st Century Care is having a positive impact on patients and expressed a desire for the new staff, clinics, and interventions to continue past the end of the award. However, some staff members also emphasized the intensive nature of working with complex patient populations, suggesting that burn-out could be a concern for some, particularly in the high-risk clinics. Denver Health administrators have been working to identify ways to sustain 21st Century Health, including identifying new key staff and hosting a financial sustainability event to determine how to fund these positions when award funding ends.

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**FINGER LAKES HEALTH SYSTEMS AGENCY**

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**FINGER LAKES HEALTH SYSTEMS AGENCY**

**I. Introduction**

This summary provides an update of the implementation experience and effectiveness of Finger Lakes Health Systems Agency’s (FLHSA) Health Care Innovation Award (HCIA) primary care redesign program as of May 2014, nearly two years after program award. It is based on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted May 5–8, 2014. The site visit included interviews with FLHSA program leaders and staff, as well as providers, care managers, and key staff supporting the program at four participating primary care practices in Rochester, Webster, Nunda, and Geneseo, New York. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

**II. Overview**

In this section, we provide a summary of the FLHSA primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) FLHSA, a community health planning organization and convening agency in Rochester, New York, received a three-year, \$26.6 HCIA to transform primary care in 65 practices in six counties in the greater Rochester area. Through this practice-based program, FLHSA aims to improve intermediate health outcomes and quality of care for high-risk Medicare and Medicaid beneficiaries and, in turn, lower the cost of care by 3 percent. It expects to achieve this goal through a reduction of preventable hospital admissions and readmissions by 25 percent and avoidable emergency department visits by 15 percent by the end of the award period.

**Table 1. Summary of FLHSA primary care redesign program**

Awardee’s name	Finger Lakes Health Systems Agency
Award amount	\$26,584,892
Implementation date	September 2012
Program description	1. Redesign primary care processes, culture, and workforce to transform practices into patient-centered medical homes 2. Train care managers and community health workers to facilitate improved patient health and link patients with community resources 3. Develop a community-wide outcomes-based payment model
Innovation components	Care coordination, care management, care transitions, medical homes, workflow or process redesign, provider payment reform, patient decision support or shared decision making, population management
Intervention focus	Practice
Workforce development	Hire care managers at each of the participating practices, hire community health workers to work with a subset of practices, redefine responsibilities of existing practice staff
Target population	High-risk Medicare and Medicaid beneficiaries
Program setting	Provider-based (target of 65 practices)
Market area	Regional (six counties in the greater Rochester, New York area)
Market location	Urban (Rochester), suburban (Webster), and rural
Core outcomes	<ul style="list-style-type: none"> <li>• 3 percent reduction in cost of care</li> <li>• 25 percent reduction in hospital admissions and readmissions</li> <li>• 15 percent reduction in emergency department visits</li> </ul>

Source: Review of FLHSA program reports.

Notes: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

Key components of the FLHSA program include (1) redesigning primary care processes, culture, and workforce—for example, by creating care teams, integrating care managers into practice care teams, and implementing care team huddles—to transform practices into patient-centered medical homes (PCMHs);<sup>3</sup> (2) training and deploying care managers and community health workers to link patients with community resources; and (3) developing a communitywide outcomes-based payment model to ensure sustainability of program activities and personnel after the HCIA period. FLHSA expects that its primary care redesign program will reach all patients, regardless of payer—about 750,000 individuals—at 65 practices in the Rochester region (including 44 percent of all Medicare beneficiaries and 46 percent of all Medicaid beneficiaries living in the target area). As part of this program, FLHSA aims to reach approximately one percent of these patients (almost 7,500 individuals) with care management services. FLHSA recruited practices that (1) serve many Medicare and Medicaid patients (who tend to have a higher risk of hospitalization than other patients), (2) have used electronic health records (EHRs) for at least six months, and (3) are willing to participate in all program activities. Practices were enrolled in three cohorts. Practices in the first cohort began participating in the program in January 2013, second cohort practices began participating in July 2013, and third cohort practices began participating in July 2014.

### **III. Operational update**

In this section, we provide an update on the operational aspects of the FLHSA primary care redesign program as of May 2014 (see Table 2). FLHSA practice improvement advisors and clinical advisors engaged staff with new daily, biweekly, and monthly activities.<sup>4</sup> First, FLHSA practice improvement advisors meet biweekly with practice champions (a primary care physician, nurse practitioner, or physician's assistant at the practice responsible for spearheading participation in the program and motivating practice transformation) and other staff to facilitate practice transformation to team-based, patient-centered care. For example, the practice improvement advisors helped practice champions implement care team huddles to improve communication among staff and identify patients in need of care management. Second, FLHSA clinical advisors hold biweekly meetings with care managers to discuss challenges and provide guidance on identifying patients, managing their patient caseload, coaching patients to improve self-management of health care, and integrating practice staff into teams to coordinate care. Third, FLHSA staff hold monthly learning collaboratives in which practice champions discuss their approaches to practice transformation and quality improvement, and care managers share promising practices from their work and focus on improving skills such as the use of motivational interviewing to involve patients more directly in their own care. In addition—with the help of (1) an FLHSA social worker/resource coordinator who works across all practices and (2) community health workers who work at five practices—care managers connect patients with necessary services at community-based service organizations (for example, outpatient behavioral health treatment and transportation to medical appointments). Finally, FLHSA continues to work

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<sup>3</sup> The National Committee for Quality Assurance (NCQA) already recognizes some participating practices as PCMHs; however, the practices still require technical assistance to continue to improve. Other practices are not recognized as PCMHs; participation in this project will help them to achieve NCQA recognition.

<sup>4</sup> Practice improvement advisors assess practices' needs and work with practice staff to develop and test strategies to address to these needs. Clinical advisors provide ongoing, individual consultation with care managers on issues specifically related to the care manager position.

with two commercial insurers, Excellus Blue Cross Blue Shield (Excellus BCBS) and MVP Health Care (MVP), to develop payment models that will provide financial sustainability for the care managers and practice transformation activities currently funded by the award. In May 2014, FLHSA also started discussing these issues with the two regional accountable care organizations (ACOs) in the greater Rochester area.

As of May 2014, FLHSA was working to transform 48 practices (in Cohorts 1 and 2) into PCMHs and plans to start facilitating the transformation of 20 additional practices (Cohort 3) in July 2014.<sup>5</sup> Each of the practices in the first two cohorts hired one part- or full-time care manager; the practices employ a total of 44 care managers. As of March 2014, the program offered care management services to 8,431 unique Medicare and Medicaid patients, exceeding the target of reaching 7,500 patients.

FLHSA and the participating practices experienced some staff turnover during the first two years of program operation. FLHSA eliminated the part-time clinical director position in March 2013 and created two full-time positions (a clinical coordinator and a practice improvement team coordinator) to better meet the needs of practices. Several staff at FLHSA left their positions: (1) FLHSA’s clinical coordinator left the agency in favor of a position at a participating practice that was closer to her residence and (2) a practice improvement advisor who was concurrently working at a health system left FLHSA to accept a full-time position at the health system. FLHSA promoted an existing clinical advisor to replace the clinical coordinator and hired a new clinical advisor to fill that role. FLHSA also recruited and hired one person to replace the practice improvement advisor (and changed this position to full-time). Several practices also experienced staff turnover; 4 of the 15 care managers at Cohort 1 practices left the practices and were replaced. Care managers reportedly left the practices because of life changes or they felt they were a poor fit at the practice.

**Table 2. Status of operational aspects of FLHSA primary care redesign program, May 2014**

Operational aspects	Program components	Current status
Innovation components	1. Redesign primary care processes, culture, and workforce	Practice improvement advisors meet approximately biweekly with practice champions to facilitate practice change (such as practice huddles, workflow analysis, quality improvement strategies, and appropriate use of staff). Clinical advisors meet approximately biweekly with care managers to guide their integration into practices and provide direct coaching, mentoring, and technical assistance
	2. Train care managers and community health workers to link patients with community resources	A social worker/resource coordinator provides guidance to care managers. Care managers (at all practices) and community health workers (at five practices) connect patients with community services.

<sup>5</sup> In its quarterly reports, FLHSA grouped practice sites that shared one full-time care manager for a total of 65 combined practices. In this program summary, we report the entire number of unique practices (68 practices) participating in the program.

Table 2 (continued)

Operational aspects	Program components	Current status
	3. Develop a communitywide outcomes-based payment model	FLHSA meets with Excellus BCBS and MVP to draft payment models. Excellus BCBS are developing a new payment model. FLHSA has begun to discuss financial sustainability with regional accountable care organizations.
Workforce development	HCIA-funded hires	FLHSA hired and trained 44 care managers. FLHSA organized monthly learning collaborative for practice champions and care managers.
Target population	Practices	There are 48 participating practices in Cohorts 1 and 2. FLHSA recruited 20 practices for Cohort 3.
	Patients	Practices engaged 8,431 unique patients in care management.

Sources: Interviews with FLHSA staff and review of FLHSA program reports, May 2014.

#### IV. Implementation experience

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

##### A. Implementation process

Three implementation process factors facilitated FLHSA program implementation: (1) engagement of staff at participating practices; (2) care managers’ execution of care management activities; and (3) team collaboration. First, through biweekly meetings with practice champions and other staff at each participating practice, FLHSA practice improvement advisors engaged providers, office managers, and other medical and administrative staff in redesigning practices’ workflows to align with PCMH principles. Practice improvement advisors also engaged practice staff directly in quality improvement activities by showing them how to use data on patients’ access to improve their workflow and quality of care, such as using cycle-time analysis to understand and reduce patients’ waiting times, using best practices to integrate care managers into the care team, creating communication pathways, and initiating huddles and previsit planning. Care managers, in turn, engaged staff on initiating care team huddles and communicating with providers outside of the huddles to ensure they referred high-risk patients to care managers. Care managers adapted the huddles and other communication strategies to best suit the practice and its staff and ensure care team participation. For example, one care manager implemented a random drawing for gift cards to improve staff attendance at the daily huddles. Practice improvement advisors and FLHSA program leaders further engaged practice champions in the process through the monthly learning collaboratives, in which they discussed barriers and facilitators to practice transformation and quality improvement. Practice champions reported that they took lessons learned from these collaboratives and applied them to the implementation of practice workflows to improve quality of care.

Second, care managers developed a schedule for meeting with care teams at the practices and worked individually to ensure that necessary care was provided to patients at risk for hospital admissions or readmissions and emergency department visits. Care managers focused on



developing relationships with other practice staff so that providers felt comfortable referring patients to them, and to ensure that administrative and nursing staff understood the care managers' role in providing targeted care to high-need patients. Care managers at most of the practices we visited were responsible for leading the daily huddles and discussing with practice champions and other providers the high-need patients who required care management and coordination. Outside of these meetings, care managers reviewed hospital discharge lists to improve transitions between care at the hospital and the practice, to call and visit patients to remind them about appointments, to arrange transportation for appointments if necessary, and to connect patients to medical and community services.

Third, evidence suggests that team collaboration was strong. Practice staff reported that they met both formally (in huddles and other care team meetings) and informally (in hallways and provider's offices) to discuss coordinated approaches to patient care. At one practice, each care team (a provider, a nurse, and a care manager) shared an office, which enabled them to hold informal discussions about problem cases, and the providers met weekly to discuss problem cases and identify solutions.

Two process-related factors presented challenges for FLHSA in implementing its program: (1) the resources required to engage in practice transformation and (2) practices' execution of redesigning their workforce. First, practice champions and other providers struggled to devote sufficient time to the transformation activities. Practice champions and other providers reported that it was difficult to carve out time in their busy schedules to attend daily huddles, especially without being reimbursed for their time, as they are for providing direct patient care.<sup>6</sup> Second, some practices struggled to integrate the care manager into the practice; in several practices, staff did not see the care manager as part of the care team; in others, staff viewed the care manager as entirely responsible for practice transformation, rather than helping to manage patient care as part of the team. One care manager reported that she felt invisible when she was hired; nurses did not pay attention or refer patients to her. To address this issue, a practice improvement advisor held a meeting with practice staff to help them understand the care manager's role. Nurses now communicate with the care manager and refer patients to her.

## **B. Program characteristics**

In addition to the implementation process factors, one characteristic of the FLHSA initiative facilitated program implementation: providers' perceptions of the relative advantage of the program compared with the standard delivery of care. Before participating in the program, a number of practices held internal or groupwide discussions about how to transform their practices to become PCMHs. Hence, many practices embraced the PCMH model and understood the value of forming a care team to discuss high-risk patients' needs and including the care managers in the team. One physician assistant reported that the care manager was crucial in helping to understand all of the patients' needs. The physician assistant said that the care manager helped to "figure out what specific things are going on with the patient and then figure out what we need to do to get the patient to the appointment and get them to take the next steps." A nurse at another practice reported that, although the practice was previously team-oriented in

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<sup>6</sup> FLHSA provides a stipend to participating practices. The purpose of the stipend is to reimburse participating providers for time spent on program activities. Practices can allocate stipends at their discretion and are not required to report to FLHSA how they use the funds.

its approach to providing patient care, the FLHSA program provided parameters and clear direction on how to successfully work as a team to improve quality of care and patients' outcomes.

One program characteristic—the quality of program guidance—initially hindered implementation. At first, FLHSA envisioned that individual practices would take the initiative in determining the direction of their transformation activities. Hence, FLHSA did not develop concrete guidelines on specific activities that practices should implement as part of transformation. However, practices desired more structure and direction from the program's practice improvement team than FLHSA expected. Without concrete guidance, practices in the first cohort did not understand the steps they needed to take to transform care delivery. Upon recognizing the practices' need for guidance, FLHSA expanded its practice improvement staff (from three to six) to guide individual practices and hired three clinical advisors to provide technical assistance to care managers. With this added staff, FLHSA increased its bandwidth to facilitate practice transformation activities at individual practices; for example, practice improvement advisors began holding biweekly meetings that focused practice staff on achieving specific goals. The first cohort of practices started to move more concretely toward transformation (for example, through development of care teams, improved communication, and updated workflows) and better use of care managers (for example, to provide care management to high-need patients and connect them with community resources). When the second cohort of practices began to participate in the program, collaborations among practice improvement advisors, clinical advisors, and practice staff occurred more smoothly because there was established guidance from FLHSA for practice transformation and additional practice improvement advisors to help provide tailored assistance to each participating practice.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located, can also influence implementation. Two internal factors facilitated implementation of the FLHSA program: (1) leadership commitment and (2) implementation climate. First, practice champions and practice managers were committed to transforming their practice workflows; improving communication among members of the care team; and integrating care managers into the care team, particularly in light of national and statewide initiatives for new payment models based on the provision of patient-centered care and quality improvement. Several staff in one practice cited the practice champion as a driving force behind practice change.

Second, most staff were committed to improving how they provided care and worked with care managers. Two of the practices we visited were already moving toward practice transformation to patient-centered care before participating in the FLHSA program; at these practices, staff readily embraced the team huddles and the opportunity to practice at the top of their licenses. Although staff at the two other practices were initially apprehensive about integrating a care manager into their team, they became more accepting of the position when they met with practice improvement advisors and understood how care managers can ease the burden on providers and lead to improved health outcomes.

Two external factors also supported the implementation of the initiative: (1) external payment models and (2) the policy environment in New York. First, many participating practices

either joined or are in the process of joining one of the two ACOs in the Rochester area, operated by the Rochester General Health System and Strong Memorial Hospital. These ACOs provide practices with technical support to use their electronic health record (EHR) systems to produce quality measures and demonstrate meaningful use, with the goal of improving quality of care. Second, the state policy environment aligns well with the goals of the FLHSA program. State officials are encouraging practices to become advanced primary care sites (that is, recognized by the National Committee for Quality Assurance [NCQA] as a Level 3 PCMH) through the state 1115 Medicaid waiver. The state also participates in Center for Medicare & Medicaid Innovation's (CMMI's) Multi-Payer Advanced Primary Care Practice Demonstration, which pays a monthly care management fee for beneficiaries receiving care from participating funding to provide primary care practices with technical assistance to become advanced primary care practices.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which FLHSA implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

FLHSA successfully implemented two of the planned program components for the first two cohorts of practices—transforming practice processes, culture, and workforce, and connecting high-need patients with community services—and planned to implement these components with the third cohort in July 2014. FLHSA faced challenges in implementing its third component—developing payment models that the two commercial insurers will offer—in the scheduled time frame. As of May 2014, one insurer, MVP, had provided FLHSA with a draft model; the other insurer, Excellus BCBS, was still developing its draft model. Because we conducted interviews before the July 2014 deadline set by FLHSA, we do not know whether these insurers finalized their plans on schedule.

Throughout its early implementation period, FLHSA looked for ways to adapt its original operational plans in ways that would make the program more effective in reaching patients and improving care. Initially, FLHSA planned to have three dedicated staff to oversee practice facilitation across all participating practices and one clinical coordinator to train and provide guidance to care managers. However, after observing that practices and care managers in the first cohort required more technical assistance, FLHSA doubled the practice improvement advisor staff (from three to six) to focus on providing targeted guidance to specific practices; it also hired three clinical advisors to provide one-on-one technical assistance to care managers. Over time, FLHSA built the capacity of its practice improvement and clinical advisors to facilitate practice change and respond directly to practices' needs. In May 2014, FLHSA reported that staff met weekly to develop and discuss how to implement new strategies through which to facilitate practice transformation.

Dosage was not a relevant outcome measure for this program.

## **B. Program reach and spillover**

FLHSA recruited 68 practices (exceeding its target of 65)—19 practices in Cohort 1, 29 in Cohort 2, and 20 in Cohort 3. As of March 2014, FLHSA care managers provided services to 8,431 unique patients, exceeding the target cumulative enrollment of 7,500 for the entire award period. The initial target of 7,500 accounts only for patients receiving intensive care management. However, as the program is being implemented, many care managers do not differentiate between the more and less intensive cases; this might help to explain why practices reported providing care management to a larger-than-expected proportion of patients. Practices had difficulty in determining the optimal number of patients they should try to reach through care management. Because many patients have chronic conditions, providers and care managers worked with FLHSA practice improvement and clinical advisors to determine the types and number of patients who should receive care management. FLHSA estimated that each of the care managers in the first cohort of practices had 40 to 60 care management patients, and each care manager in the second cohort of practices had 20 to 30 care management patients. As they gain experience with providing care management, clinical advisors expect that Cohort 2 care managers will work up to a larger caseload as they spend more time in their position. Cohort 1 care managers, who have been employed by practices since February 2013, also started with smaller caseloads and worked up to the larger caseload. Community health workers had smaller caseloads: for example, a community health worker at one practice reported working with about 20 patients per month.

Practices reported seeing spillover effects from their HCIA-funded program activities. For example, care managers reported that people who had not previously been to the practice heard about the care management from their friends and families and made appointments with providers at the practices to connect with a care manager to help them manage chronic conditions. In addition, informants reported that social service organizations in the community were beginning to reach out to care managers to ensure that care managers were aware of the types of support services available in the community, such as adult day care and home health care.

## **C. Sustainability and replicability**

The ability to sustain the HCIA practice transformation in participating practices, and to replicate the transformation at other practices, will depend on FLHSA's ability to develop viable payment models after the HCIA program agreement ends. These models will share savings with practices based on their performance on specified quality and outcome measures. FLHSA estimated that, for each practice, the combined shared savings payment from the two insurers (which, combined, cover 60 to 80 percent of patients in the Rochester region) will cover any continuing costs of practice transformation and the cost of employing a care manager. Because many practices have joined or are joining the two ACOs in the Rochester region, FLHSA is also holding discussions with the ACOs to ensure that their payment models are similar to those developed through the FLHSA program. Even if payment models do not go into effect after the award ends, practice champions and other staff expected that they would sustain huddles and previsit planning because many practices now view these activities as integral to practice workflows. Practice champions in larger medical groups that are undertaking broader PCMH initiatives also expected that practices across the medical group would be able to put the huddles in place. However, practice champions and other staff expect they will no longer be able to

employ care managers unless they receive additional funding through the insurers' payment models or the ACOs. Without financial support for the care manager, several practice staff felt providers would not take on care management tasks connecting patients to services, because they would find it too time consuming.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Frontline staff reported that the FLHSA program had a positive impact on providers' behavior. Providers now communicate among themselves and within a larger team of staff, sharing information about their patients to improve the quality of care and health outcomes. Additionally, physicians, nurses, care managers, and other frontline staff are practicing closer to the top of their licenses, with tasks more likely to be delegated to the appropriate level. The practice champion at one site reported that nurses now conduct previsit planning activities (for example, reviewing EHRs to see whether patients have had or are due to have vaccines or tests) and care managers ensure that patients have adequate services (for example, transportation to appointments), thereby enabling physicians to focus on providing care to patients during their medical appointments. A physician assistant at another site reported that the care managers and community health worker helped to improve workflow by handling referrals, documenting changes in patients' medications, coordinating physical and occupational therapy appointments, and ensuring that patients have other necessary resources (for example, bath safety grab bars) and services (such as Meals on Wheels). This enabled the physicians, physician assistant, and nurses to spend more time providing medical care to patients. Physicians report they have also become more proactive than they were before in identifying patients who are at risk for hospitalizations, readmissions, and emergency department visits, and referring these patients to receive care management. One practice champion commented, "It's a more thorough visit than was done in the past."

### **B. Perceived effects on patients**

Frontline staff said that, although care management appears to motivate some patients to make small steps toward improving their health, other patients are not as motivated to make health care changes. Patients who used to have difficulties getting to appointments because of lack of transportation now have their travel arranged by the care manager and some patients also learned to come to appointments with lists of questions to ask their providers. Some patients are actively working with their care managers to manage their chronic conditions. For example, in one practice, after working with a care manager to control his diabetes (learning how to test his blood sugar and how to adapt his diet), a patient brought his blood sugar monitor with him to an appointment and showed the practice staff that he was now able to maintain appropriate blood sugar levels. Care managers used motivational interviewing techniques to attempt to move patients to take positive steps; however, they reported that some patients were not interested in participating in care planning—perhaps because of family dynamics, religion, stress, mental health, poverty, or other life issues. For example, one patient with diabetes was initially willing to meet with the care manager to learn how to monitor his blood glucose levels, but later told the care manager that he would no longer engage in medical care for religious reasons.

## **VII. Conclusions**

Two years into its three-year program agreement, FLHSA successfully implemented two components of its HCIA program—redesigning primary care processes, culture, and workforce; and integrating primary care with community services—in the two practice cohorts and is on schedule to extend these components to a third cohort in July 2014. FLHSA is slightly behind schedule in implementing its third component, a communitywide outcomes-based payment model. It expects to have the model in place by January 2015, when the first cohort of practices will no longer receive supplemental funds from the grant. Practice champions and practice staff were highly engaged and motivated to transform care toward a PCMH model, which supported implementation. Initially, implementation was impeded by the lack of formal guidelines for practice transformation. FLHSA addressed this by creating stronger guidance, expanding its practice improvement staff to provide more intensive technical assistance, and providing these staff with targeted professional development to help them work more effectively with practices. FLHSA practice improvement and clinical advisors continually modified their approaches to working with each practice, depending on where the practice was in terms of adapting workflows, improving team communication, and integrating the care manager in the care team. Practice staff welcomed the support they have received from FLHSA and, after initial uncertainty related to how a care manager could add value to a care team, accepted the support and specialized experience that the care manager brought to the practice. In the coming year, practice improvement and clinical advisors plan to devote their time to educating the practice staff and care managers in the third cohort and reduce the amount of time they spend with staff from the first two practice cohorts. The sustainability and replicability of the practice transformation and employment of care managers at participating practices will depend on the ability of the insurers' payment models and the two area ACOs to cover the associated costs.

**FOUNDATION FOR CALIFORNIA COMMUNITY COLLEGES AND THE  
TRANSITIONS CLINIC NETWORK**

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## FOUNDATION FOR CALIFORNIA COMMUNITY COLLEGES AND THE TRANSITIONS CLINIC NETWORK

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of the Foundation for California Community Colleges and the Transitions Clinic network’s (TCN’s) Health Care Innovation Award (HCIA) primary care redesign program as of May 2014, nearly two years after program award. It is based on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted over four days in May 2014. On site, we interviewed TCN program leaders and key staff supporting the program at two California clinics and a New York clinic. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the TCN primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) TCN received a three-year, \$6.9 million HCIA to provide high quality care to formerly incarcerated people at 13 clinics with specialized programs located in community health centers in six states (Alabama, California, Connecticut, Maryland, Massachusetts, and New York) and Puerto Rico.

**Table 1. Summary of TCN primary care redesign program**

Awardee’s name	Foundation for California Community Colleges
Award amount	\$6,852,153
Implementation date	August 2012
Program description	<ol style="list-style-type: none"> <li>1. Expand the reach of the Post-Prison Health Worker training program for formerly incarcerated community health workers (CHWs)</li> <li>2. Provide and coordinate primary care and other health and social services for chronically ill patients recently released from prison</li> <li>3. Improve quality of care provided at participating clinics through collection and use of patients’ data using a cloud-based data platform</li> </ol>
Innovation components	Care coordination, patient navigation, care management
Intervention focus	Patient
Workforce development	Hire new staff or retrain existing staff to serve as CHWs; provide training to CHWs, liaisons, and other clinical staff
Target population	Adults released from prison within the past six months, enrolled in Medicaid or Medicaid-eligible, and with chronic health conditions or older than 50
Program setting	Provider-based (13 clinics based in hospitals and community health centers)
Market area	Multistate (Alabama, California, Connecticut, Maryland, Massachusetts, New York, and Puerto Rico)
Market location	Urban (all)
Core outcomes	<ul style="list-style-type: none"> <li>• Improvement in quality of and access to care, clinical outcomes, patients’ satisfaction, and self-reported health status</li> <li>• Reduction in cost of care through decreased unnecessary hospital admissions, emergency department visits, and duplicated diagnostic tests</li> </ul>

Source: Review of TCN program reports.

Notes: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

The TCN program, an expansion of an existing care transition model for people recently released from prison, is administered by three partners—the University of California-San Francisco, the City College of San Francisco (CCSF), and Yale University; the Foundation for California Community Colleges is the program’s fiscal agent.<sup>7</sup> The TCN program targets adults who live in participating clinics’ service areas and were released from prison within the past six months, have Medicaid or are Medicaid-eligible, and either have chronic health conditions (related to behavioral health, substance use, or physical health) or are older than 50. These individuals are often released from prison without connections to primary care or other health services and face many barriers to accessing care, such as homelessness and lack of familiarity with the health care system. The program aims to improve patients’ clinical outcomes, self-reported health status, and satisfaction with their care, and to lower patients’ health care costs by reducing unnecessary hospital admissions, emergency department (ED) visits, and duplicated diagnostic tests.

The TCN program leadership recruited the 13 participating clinics based on their preexisting relationships. Five clinics were already implementing some aspects of the TCN program model. Program leaders assessed six clinics—identified through previous collaborations—as having the necessary resources and capacity. All participating clinics are located in a high-need community acutely affected by incarceration, have staff willing to implement the program model, and can accommodate additional staff (community health workers [CHWs]) and an increased patient population.

The TCN program includes three key components: (1) expand the reach of CCSF’s existing CHW certificate programs by converting the Post-Prison Health Worker certificate program to an online format to train formerly incarcerated people to be CHWs and developing a digital facilitator’s guide to accompany the CCSF CHW textbook; (2) provide and coordinate on-site primary care and other health and social services for formerly incarcerated patients; and (3) use a cloud-based data platform to provide participating clinics with real-time data on patients’ characteristics (such as patients’ housing, insurance status, and whether patients experienced relapse to illicit drug use) and services patients receive (for example, clinic services, ED visits, and hospital admissions) to improve clinic staff’s understanding of patients’ backgrounds and service use and the quality of care the clinics provide. The TCN program is hoping to reach 1,800 to 2,200 unique patients during the award period.

### **III. Operational update**

In this section, we provide an update on the operational aspects of the TCN primary care redesign program as of May 2014 (see Table 2). First, during the first two years of the TCN program, CCSF converted the Post-Prison Health Worker training program to an online format, applying best practices about online learning research. The 20 units of interactive online courses emphasize practical skills to be applied in the clinic setting (for example, motivational interviewing and management of chronic health conditions) and provide a conceptual understanding of the health impacts of incarceration (for example, the effect of solitary confinement on mental health). CCSF continues to work with the publisher, Jossey-Bass, to

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<sup>7</sup> The Foundation of California Community Colleges is responsible for managing the TCN program’s financial issues, but has no active role in program implementation.

create an online facilitator guide with lesson plans, activities, and competency assessments tied to CCSF’s CHW textbook, *Foundations for Community Health Workers*.

**Table 2. Status of operational aspects of TCN primary care redesign program, May 2014**

Operational aspects	Program components	Current status
Innovation components	1. Online Post-Prison Health Worker program	<ul style="list-style-type: none"> <li>As of May 2014, CCSF developed all online curriculum for its 20-unit Post-Prison Health Worker certificate program.</li> <li>From January to March 2014, CCSF solicited feedback from external CHW training experts on the draft facilitators’ guide to supplement the CHW textbook.</li> </ul>
	2. Provide and coordinate patient care	<ul style="list-style-type: none"> <li>As of May 2014, CHWs at 12 participating clinics are managing and coordinating care of the target population.</li> <li>TCN program leadership is working with clinics to develop patient outreach plans, track referral sources, and improve outreach strategies.</li> </ul>
	3. Quality improvement	<ul style="list-style-type: none"> <li>As of March 2014, 8 clinics are collecting patient data through health surveys on an online data platform; 1 clinic is collecting patient data through paper surveys.</li> <li>The evaluation team is providing data to clinics through online dashboards, monthly summaries, and feedback to clinics.</li> </ul>
Workforce development	New workforce roles	<ul style="list-style-type: none"> <li>13 clinics hired new staff or retrained existing staff to serve as CHWs.</li> </ul>
	Training	<ul style="list-style-type: none"> <li>CCSF faculty trained CHWs at participating clinics through the online Post-Prison Health Worker program.</li> <li>TCN program leadership provided liaisons (clinic program administrators) with training on the TCN program model and cultural competency training on how to provide patient-centered care to formerly incarcerated people.</li> <li>The evaluation team trained panel managers, CHWs, and other staff involved in data collection on the use of the online data platform.</li> </ul>
Target population	Clinics	<ul style="list-style-type: none"> <li>TCN added 3 clinics between January and March 2014 (New Haven, Connecticut; Santa Clara and Contra Costa, California), for a total of 13 HCIA-funded clinics.</li> </ul>
	Patients	<ul style="list-style-type: none"> <li>TCN provided services to 599 unique patients as of March 2014, 263 of whom enrolled in the program.</li> </ul>

Sources: Interviews with TCN staff and review of TCN program reports, May 2014.

Note: Information on data collection activities, including the number of patients served by clinics, is drawn from the most recently available TCN program reports (covering January–March 2014). The 599 patients who received program services but were not enrolled in the program include patients who did not meet the program criteria requirements, as well as those who declined to allow the clinic to enter their information in the online data platform. A total of 263 patients agreed to allow the clinics to enter their information into the online data platform, and thus were enrolled in the program

Second, CHWs at the 13 participating clinics continued to manage and coordinate care and resources for the program’s target population. The CHWs—all of whom have a history of incarceration—work with a clinic liaison (clinic staff who serve as liaisons for the TCN program and other clinic staff), primary care providers, and other clinical staff to engage patients in on-site primary care and connect them to additional health and social services, such as housing and food resources. CHWs also conduct outreach to potential patients and provide peer support to

help patients navigate the health and social service systems. In some clinics, providers work directly with the CHWs to coordinate patients' care; in others, providers work with social workers or other intermediate staff who, in turn, engage the CHWs. The CHWs' level of involvement with patient outreach and care management varies depending on the clinic.

Third, the evaluation team at Yale University continued to work with the participating clinics to collect and use patients' data to improve the quality of clinic care. As soon as they received approval from their institutional review boards and training from the evaluation team, participating clinics began collecting patients' data using electronic health surveys housed on the program's cloud-based data platform; as of March 2014, 8 of the 13 clinics collected patients' data electronically. CHWs also use the platform to track their interactions with patients. The evaluation team processes the data collected through the platform and provides monthly summaries to each clinic to highlight areas for improvement. Clinics can also use the data platform to access dashboards with visual displays depicting service use (for example, the percentage of patients referred to the clinic who attend their initial appointment). Five clinics were not yet collecting data electronically. One clinic does not collect data electronically because of institutional review board concerns about the online data platform. The evaluation team expects that the remaining four clinics will begin data collection through the online platform between April and June 2014. Of these four clinics, two received institutional review board approval, but had not yet started collecting data, and two were awaiting institutional review board approval.

As of March 2014, the program provided services to 599 unique patients in 10 of the 13 participating clinics. The TCN program does not yet have data on the number of patients served at the three clinics that joined the program between January and March 2014.

In addition to progress on all operational aspects of the initiative, TCN program partners continued to develop the workforce at participating clinics. First, the participating clinics hired new staff or retrained existing staff to serve as CHWs. All CHWs were enrolled in, or previously completed, the Post-Prison Health Worker certification program. Program leadership did not report any turnover among the CHWs at the participating clinics. Second, TCN program staff provided training and guidance on program implementation to clinic liaisons and other clinic staff through monthly meetings (with all clinics) and quarterly meetings (with individual clinics). Third, the TCN program offered additional training on cultural competency and the transitions clinic model to clinic staff. This training educated providers and other clinic staff on the unique needs of people recently released from prison to inform how they provide care to these patients. Finally, to foster connections among the workforce, the TCN program leadership hosted an in-person, two-day retreat in October 2013 for clinic staff to encourage shared learning across clinics; this retreat will take place annually during the TCN program.

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

## A. Implementation process

Two implementation process factors facilitated the implementation of the TCN program: (1) engagement of staff at participating clinics and (2) engagement of community stakeholders. First, TCN program leadership and CHWs at the clinics communicated with clinic staff to improve their understanding of the TCN program model and its usefulness to people transitioning from prisons to communities. The cultural competency training received by clinic providers and staff helped to increase their awareness about the unique needs of people returning from prison and how implementing the TCN program model can help to meet these needs. In addition, CHWs shared with their clinic colleagues their own experiences with incarceration and reentry, with a focus on the challenges they faced in receiving care after their release from prison. As a result, clinic staff became more aware of the presence of formerly incarcerated patients at their health centers and learned how to better coordinate care for those patients. One clinic staff person commented, “We were already seeing people who were formerly incarcerated, but we didn’t know it. They were invisible. Now [after becoming involved in the TCN program] we want to make them more visible in order to know what their needs are and to be better able to navigate them through the system.”

Second, CHWs conducted outreach to community stakeholders to identify formerly incarcerated people who are in need of medical care and to connect patients with available services and resources for the target population. One CHW reported that she felt her role was to bring “the voice of the clinic” into the community and build relationships to help organizations recognize that (1) formerly incarcerated people need medical care, in addition to mental health and substance abuse treatment; and (2) the CHW can help coordinate these services. Another CHW reported that he forged a relationship with local housing agency staff to smooth the passage of review and approval of patients’ housing applications; previously, such applications were rejected because of the patients’ criminal records.

One implementation process factor posed a challenge for implementation of the TCN program: collection and use of patients’ data for quality improvement. The TCN program provides funding to support a part-time panel manager. Initially, some clinics decided to allocate data entry responsibilities to existing staff rather than hire a separate staff person to carry out these tasks. TCN program leadership reported that clinic staff had trouble with data entry because staff were not familiar with the online data platform or data collection in general. In addition, it appeared that the evaluation team did not provide much initial training or guidance on how to collect and input patients’ survey data correctly into the online system. One clinic liaison noted, “We had to train every staff member multiple times in order to just do the basic things,” such as how to access the online system and enter data into the online survey form. In addition, administrative staff at the clinic reported that frontline staff did not initially understand that the data would be needed to help improve quality of care, and often did not enter information into the online survey. To help ameliorate this issue, the clinic recently hired a panel manager to take over data entry and remove the burden from the frontline staff. To address this challenge, the evaluators provided additional training to frontline staff at all participating clinics on how to collect baseline data. In addition, the evaluation team held data collection webinars and conducted ad hoc one-on-one telephone-based assistance.

## B. Program characteristics

In addition to the implementation process factors, two characteristics of the TCN initiative helped program implementation: (1) the ability to adapt the TCN program model at participating clinics and (2) the quality of the training program design. First, TCN's model was adaptable to suit the unique structures and staffing of participating clinics. TCN recognizes that the model implemented at its flagship clinic in California (two medical providers deliver care during dedicated hours with the support of two CHWs and a behavioral health therapist, and a panel manager collects patient data) is not feasible for all of the participating clinics, and allows clinics to modify components of the model to fit within their unique structures. For example, the New York clinic provides primary care to patients who meet the TCN program criteria as part of a broader program serving formerly incarcerated patients (rather than during specific hours dedicated to the transitions clinic). The clinic employs three social workers (also formerly incarcerated) who develop reentry plans with the patients, and two CHWs who help patients carry out elements of the reentry plans (for example, accompanying patients to local agencies to enroll in benefits).

Second, the online Post-Prison Health Worker training program was well designed and executed, facilitating CHWs' participation in training activities. CCSF faculty developed all of the online training materials with an appropriate health and computer literacy level, and structured courses to address the unique needs of formerly incarcerated people (for example, managing their own reentry into society, learning about the Internet, and using a computer). The CCSF faculty provided initial support to CHWs as they learned to use the technologies required for the online training program (for example, walking through how to set up a computer camera for a video conference). Although several CHWs initially reported concern that their inexperience with computers would prevent them from successfully participating in online training, they had little trouble adapting to the online course environment. In addition, CCSF faculty engaged CHWs' direct supervisors in training and required clinics to allow CHWs to use at least five hours per week of their time at the clinic for online coursework. One CCSF faculty member commented, "It's more hands-on work with a supervisor than would happen in a regular classroom setting historically. We're really involved. If students are falling behind or are missing assignments, we're calling them and we're calling their supervisor to figure out what we need to do. That partnership is what makes this situation unique."

One program characteristic, the quality of guidance on integration of CHWs into clinics, initially hindered implementation. A number of clinics originally misunderstood TCN program leadership's guidance on how CHWs are integral to the TCN model—using CHWs to conduct patient identification and outreach, and to manage and coordinate patients' care. For example, administrators at one clinic wanted to minimize CHW outreach activities because they felt that outreach took away from the CHWs' time in the office providing direct patient care management and coordination. TCN program leaders first became aware of these types of misunderstandings between January and March 2014 and are now attempting to address them. They are working with each clinic to develop structured outreach plans that involve designated roles for CHWs; these plans provide guidance for CHWs and other clinic staff on how to identify and track stakeholders for outreach.

### C. Internal and external factors

Characteristics of the organization implementing a program, and features of the environmental context in which the organization is located, can also influence implementation. Two internal factors influenced implementation of the TCN program: (1) organizational and staff capacity and (2) culture of program leadership and clinic staff. First, at least 7 of the 13 clinics were well prepared to serve the target population because of their previous experiences providing health care to patients recently released from prison and employing formerly incarcerated people. At one clinic in California, for example, CHWs with a history of incarceration have worked with people returning from prison since the TCN program model was first implemented in 2006. Similarly, the second California clinic had prior experience with the TCN program model and, as of 2011, employed a CHW with a history of incarceration. After joining the TCN program, the two clinics began collecting more targeted data on the patients and focusing more on improving the quality of care. Although several other clinics had prior experience serving people who were returning from prison, they did not have experience implementing the TCN program model. The New York clinic, for example, began providing such services—and employed social workers who were formerly incarcerated—in 2010.

Second, TCN program leadership was committed to improving the access to and quality of care provided to formerly incarcerated patients. One of the founders of the TCN program continued to provide oversight, and the current executive director of the TCN program demonstrated deep commitment to improving the care these patients receive, both through her position as a provider at one of the clinics and through her state and national advocacy for the patient population. Across the participating clinics, frontline and administrative staff described a personal commitment to reaching underserved populations. Several staff members reported seeking work in these clinics because of a desire to work with patients returning from prison. After developing relationships with staff from other participating clinics, one CHW commented, “They’re all doing the same work and they all care. It’s really rare that you can find [a situation] where people love their jobs and they are doing something they want to do and they’re helping a population that nobody used to even think about.”

In contrast, the culture of the broader institutions (hospitals and community health centers) within which the clinics are housed was an initial barrier to implementation of the TCN program for some clinics. When the program was implemented, some staff employed by the larger entity viewed patients recently released from prison as potentially untrustworthy or dangerous, and were reluctant to serve this population. As one provider reported, “Ancillary staff have resistance to the idea that there are a lot of people who come here who are sex offenders. There’s some anxiety around working with people who had been incarcerated.” TCN program leadership and CCSF faculty worked with clinic liaisons and CHWs to provide guidance on raising awareness and building understanding within their broader institutions. For example, to break down misconceptions about and barriers to serving formerly incarcerated people, one clinic liaison held a cultural humility speaker series for staff, during which formerly incarcerated people shared their personal stories. In another clinic, frontline staff addressed the topic more informally with their colleagues and explained why negative comments or jokes were inappropriate. One CHW reported that he told his colleagues that people who were recently released from prison were “no different from anyone else [being seen at the clinic], and everyone in this neighborhood is impacted by incarceration.”

One external factor, the federal policy environment, also facilitated the implementation of the TCN initiative. CCSF faculty reported an increasing local, state, and federal interest in CHW training materials and resources in the wake of a Centers for Medicare & Medicaid Services (CMS) final rule on Medicaid and the Children’s Health Insurance Program that, as of January 2014, allows state Medicaid agencies the option to reimburse for preventative health services provided by CHWs.<sup>8</sup> One TCN program leader described this rule as “the single most important, game-changing factor for CHWs,” noting that the rule led to state and national discussions of how CHWs should be licensed and credentialed and what scope of work is appropriate for this role. Another TCN program leader felt that the program was “developing resources right at the perfect historic moment when they’re needed.”

Although the federal policy environment supported implementation, the state policy environment posed a barrier to implementation at participating clinics in California. In response to federal court rulings that mandated that California significantly reduce its state prison population, the California legislature passed Assembly Bill 109 (commonly referred to as realignment) in April 2011. This legislation, which took effect in October 2011, shifted much of the correctional responsibility from state prisons to county jails, and from the state’s parole division to county probation departments. Before realignment, staff at California clinics were able to identify patients through referrals from state prison discharge planners and state parole officers. However, because of this shift in correctional responsibility, clinic staff had to adapt their plans and develop new relationships with probation officers to encourage referrals. In addition, because many potential patients will now be housed in county jails (rather than state prisons) before release, TCN leadership is working with local county jail officials on discharge planning efforts to maintain the prerelease connection to potential patients.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which TCN implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

The TCN program successfully implemented its plans for two of its three components on time. CCSF adapted the Post-Prison Health Worker training program to an online format on schedule; all 20 units of the training program were available online by May 2014. Clinics also hired or retrained existing staff as CHWs within the planned time line. CHWs are in the process of completing (or completed) the training program and are helping patients engage in on-site primary care and connect to other health and social services. However, TCN faced some challenges in implementing its third component—helping clinics collect and use patients’ data to improve quality of care—so it is on a slightly delayed schedule. Initially, TCN hoped that the clinics would be able to start collecting data within a few months of program start-up; however,

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<sup>8</sup> The CMS final rule, dated July 15, 2013, is available at <http://www.gpo.gov/fdsys/pkg/FR-2013-07-15/pdf/2013-16271.pdf>. To reimburse for preventive health services provided by CHWs, each state must first submit to CMS an amendment to its Medicaid state plan describing, among other details, the training and credentialing requirements of the providers of these services.



this proved infeasible for some clinics because of several issues: (1) delayed institutional review board approval (one clinic did not yet have approval to collect patients' data and a second clinic was not permitted to use the online platform, although its institutional review board provided conditional approval for the clinic to collect patients' data); and (2) frontline staff's difficulty collecting and inputting data, as discussed previously.

Throughout its early implementation period, TCN looked for ways to adapt and improve upon its original operational plans rather than remaining faithful to the original design. For example, CCSF conducted a formative evaluation of its online Post-Prison Health Worker training program and used feedback from participating CHWs to improve course offerings. In addition, as mentioned previously, participating clinics adapted the TCN program model in different ways to best fit within their existing organizational and staffing structures. Finally, based on feedback it received from frontline staff, the evaluation team revised its online tools for collecting data and continued to look for new ways to present real-time patient data.

Dosage was not relevant as an outcome measure for this program.

## **B. Program reach and spillover**

TCN is implementing its program at 13 clinics, and might expand to another clinic before the end of HCIA funding. As of March 2014, 10 participating clinics served 599 unique patients; the program fell short of its target by 991 patients.<sup>9</sup> TCN program leaders report that the program's modest patient reach is a result of several challenges, such as the length of the institutional review board approval processes, unexpected changes in the state and local policy environments in California, and several clinics' issues with appropriately using and supporting CHWs to conduct patient outreach. TCN program leaders plan to work with clinics on patient outreach strategies to increase the number of patients served.

The clinics generate spillover effects for patients not eligible for the program. CHWs at two clinics noted that they do not turn away patients who are not eligible for the program (for example, patients who have been out of prison more than six months); they work with all patients who need assistance, but collect data for the program (in the online data platform) only from those who meet TCN program criteria.

## **C. Sustainability and replicability**

Frontline and administrative staff at participating clinics hope to be able to sustain the TCN program model after HCIA funding ends. To do so, clinics will have to identify funding sources to cover the employment of CHWs and maintain buy-in from participating clinical staff and institutional leadership. TCN program leaders hope that clinics will receive additional financial support through CMS's recent final rule permitting reimbursement of preventative services provided by CHWs; however, this will depend on whether individual states pursue this rule change (currently unknown). In the meantime, clinics expect to pursue grant funding to support CHWs. CCSF also plans to sustain its online training program; faculty reported that they are

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<sup>9</sup> Three clinics recently began participating in the program and did not have data on the number of patients served at the time of preparing this report.

seeking additional resources to build on their existing work and make the curriculum more widely available.

The program model funded through the HCIA funding is a replication of the TCN program model initiated in 2006 at a clinic in California and is currently operating in the 13 clinics participating in the TCN program. The program partners currently provide technical assistance to other clinics interested in adopting the TCN program model outside of the HCIA-funded program, and plan to continue to disseminate the model and expand its network of transitions clinics through other funding sources after the HCIA funding ends. The online resources developed by the program partners—including the Post-Prison Health Worker training program, the CHW facilitators' guide, and educational videos—will support continued training of formerly incarcerated CHWs in additional transitions clinics.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Frontline staff reported that the TCN program positively affected providers' behavior, both for CHWs and other clinic staff. CHWs reported that they feel much more valued in their positions in the clinic than they had in other positions. Unlike previous jobs—in which they felt it necessary to hide their incarceration history from colleagues or potential employers—CHWs are valued for their knowledge of the prison system and the barriers to reentry into society. One CHW said that, because of her role in the clinic, “my self-esteem grows every day,” noting that “being surrounded by doctors and professional colleagues makes me feel important.” The TCN program also raised awareness of the needs of the specific patient population among other clinic staff. One primary care provider, a fourth-year medical resident, plans to continue to provide care at the clinic after his residency at the clinic ends because he now appreciates how great the need is for such care and, specifically, “how poor the transition is from prison back to society.”

The TCN program's effects on providers' workflow varied across sites, likely because participating clinics adapted the TCN program model differently to fit their existing organizational and staffing structures. Some providers had little interaction with CHWs and appeared to provide patients' care as usual. For example, in the New York clinic, providers appeared to work more directly with a social worker, who would then communicate directly with the CHWs about any care management or coordination needs. At other clinics, providers worked closely with CHWs, either individually or through team huddles, to discuss patients' needs and coordinate care. In one California clinic, the provider reported that he and the clinic liaison met at the start of the day to review the needs of any TCN patients who had scheduled appointments.

### **B. Perceived effects on patients**

Clinic staff reported that working with CHWs and other transitions clinic staff positively affected patients' experiences with the health care system. Before receiving care at the participating clinics, formerly incarcerated patients told the CHWs that they often faced stigma and received poor treatment when interacting with providers in correctional facilities or in the community. However, after working with CHWs who shared common experiences, patients told CHWs that they felt supported and welcomed at the clinics; they also were more likely to attend their scheduled appointments. Frontline staff also noted that patients were learning how to better navigate the health care system and communicate with providers. Clinic staff also reported that

the TCN program helped connect some formerly incarcerated patients with necessary services, such as housing and employment; they felt this could potentially have a positive impact on patients' health outcomes. As one CHW explained, "If I get them a place to live, they're going to make appointments, because then they're not bouncing around."

## **VII. Conclusions**

Two years into its three-year program agreement, TCN successfully implemented two of the three components of its primary care redesign program: expanding the reach of its Post-Prison Health Worker training program and providing and coordinating care for patients recently released from prison. CCSF successfully adapted its existing Post-Prison Health Worker training program to an online format and provided a user-friendly forum through which to train formerly incarcerated people as CHWs. The newly trained CHWs welcomed this opportunity to develop their skills and serve people who were transitioning from prison to society. Program implementation also went smoothly because clinic staff's previous experience working with formerly incarcerated patients, and the program model's adaptability, enabled participating clinics to integrate the program into their existing staffing structures. Although some clinics experienced difficulties understanding how to use and support CHWs to improve patient outreach and enrollment, TCN leadership expect this challenge to lessen over time as they work with clinics to develop outreach plans and work individually with CHWs on their outreach activities.

Compared with the relative ease of implementing its first two components, TCN faced challenges in implementing its third component, namely, helping clinics use patient and service use data for quality improvement. Program administrators reported that they experienced substantial challenges in collecting and using patient data because of delays in receiving approvals from institutional review boards and limited availability of resources for panel managers. Moving forward, the evaluation team plans to address these challenges through additional in-person training on data collection and will continue to work with two clinics to address the institutional review boards' concerns regarding the use of the data platform. As clinic staff become more comfortable collecting data, the evaluation team plans to focus on helping clinics use the data to inform quality improvement through the creation and use of dashboards and other tools that document the clinics' patients, their needs, and their service use.

Federal law provides hope that CHWs could be reimbursed for the preventative services they provide through the TCN program if states pursue this option. However, the participating clinics may still face funding barriers because some states do not allow reimbursement for individuals with a criminal record. As they await implementation of this federal regulation and statewide guidance on reimbursement eligibility, the TCN program leaders and participating clinics plan to look to other funding sources to sustain these services.

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**PACIFIC BUSINESS GROUP ON HEALTH**

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**PACIFIC BUSINESS GROUP ON HEALTH**

**I. Introduction**

This summary provides an update of the implementation experience and effectiveness of Pacific Business Group on Health’s (PBGH’s) Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, nearly two years after program award. It is based on a review of the awardee quarterly reports and information collected during the first-round site visit conducted April 20–25, 2014. The site visit included interviews with health system administrators and frontline staff members involved in the primary care redesign program at three participating medical groups (PMGs). The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

**II. Overview**

In this section, we provide a summary of the PBGH primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) PBGH is a nonprofit business coalition that works with health care stakeholders to improve access to and quality of care. PBGH received a three-year, \$19.1 million HCIA and provides technical assistance to 23 PMGs (which are either health care foundations or independent practice associations) in five states to implement a care management program, called the Intensive Outpatient Care Program (IOCP). Through the implementation of the IOCP, PBGH aims to reduce hospitalizations by 11 percent, emergency department visits by 5 percent and lower the total cost of care by 5 percent; it also intends to improve patients’ experiences, health care quality, and health status.

**Table 1. Summary of PBGH primary care redesign program**

Awardee’s name	Pacific Business Group on Health
Award amount	\$19,139,861
Implementation date	August 2012
Program description	Strengthen PMGs’ capabilities of identifying medically complex patients and provide them with personalized care management services
Innovation components	Care management, care coordination, risk stratification
Intervention focus	Patient
Workforce development	Create new positions and change roles and responsibilities of existing staff to embed care management and care coordination services in primary care practices
Target population	Medicare beneficiaries with chronic conditions and/or high utilization
Program setting	Provider-based (primary care practices)
Market area	Multistate (Arizona, California, Idaho, Nevada, and Washington)
Market location	Urban
Core outcomes	<ul style="list-style-type: none"> <li>• 11 percent reduction in hospitalizations</li> <li>• 5 percent reduction in emergency department (ED) visits</li> <li>• 5 percent reduction in total cost of care</li> <li>• 2 to 3 percent improvement in patients’ experiences</li> <li>• 2 percent improvement in health care quality and health status, as measured by condition-specific indicators</li> </ul>

Source: Review of PBGH program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

To implement the IOCP model, PBGH is working with the PMGs. Each PMG selects a sample of affiliated primary care practices in which to implement the program. Key components of the PBGH program include (1) stratification of patients to identify and enroll high-risk patients in need of care management services and (2) provision of personalized care management services to enrolled patients. Patients who enroll in the program are chronically ill Medicare beneficiaries whose use of hospital and emergency department (ED) services can be modified through care coordination, self management, and connection to appropriate clinical, behavioral, and community services. PBGH also works with two organizations—Renaissance Health and the Clinical Excellence Research Center at Stanford University—to provide technical assistance in training and program implementation.

**III. Operational update**

In this section, we provide an update on the operational aspects of the PBGH care management program as of April 2014 (see Table 2). PBGH’s role in the initiative is to provide guidance to PMGs in implementing patient identification and enrollment and care management processes. As of April 2014, most PMGs are focused on implementing the distributed care management model, a model that involves a care manager working with multiple primary care providers (PCPs) to maintain a specific IOCP caseload, although one PMG we visited was also implementing the intensivist care management model.

**Table 2. Status of operational aspects of PBGH primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. Patient identification and enrollment	Continued to refine effective patient identification and enrollment strategies.
	2. Care management	Focused on implementing the distributed model of care management, in which care managers work with multiple PCPs and maintain a specific IOCP caseload through an initial home visit (for medication reconciliation, personal safety and education training, assessments, and so on) and provide ongoing telephonic care management support
Workforce development	Program staff attended Care Coordinator Academy and PMG administrators attended quarterly leadership training	
Patient enrollment	Cumulatively enrolled 4,337 patients (since inception)	

Sources: Interviews with program staff and review of program reports, April 2014.

The PMGs we visited are refining their patient identification and enrollment strategies to ensure they are identifying patients who are appropriate for the program and can successfully enroll them in the program. Initial recruitment and enrollment efforts involved care managers using risk-stratification lists to call patients and introduce them to the program. Care managers are currently in the process of determining the size of a manageable caseload. Across the three sites, the average caseload is 130 patients per care manager, although several care managers stated a preference for a caseload of 85 to 100 patients. By April 2014, the PMGs enrolled 4,337 unique patients into the program, slightly below the projected target of 5,000 for that period.



PBGH is using a variety of strategies to facilitate the implementation of the program in the PMGs. For example, program staff attend classes at the Care Coordinator Academy (launched in October 2013), where in addition to learning about the program requirements (called guardrails), they learn about patients' psychosocial issues, motivational interviewing, goal-setting, and patient assessments and engagement. Beginning in July 2013, PMG administrators attended quarterly leadership trainings in which they share best practices for implementing the program.

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

##### **A. Implementation process**

Two implementation process factors facilitated the implementation of the PBGH program: (1) training program staff to provide care management and (2) engaging PCPs. First, the Care Coordinator Academy and quarterly leadership trainings provided care managers with the knowledge and skills they needed to implement their tasks with little oversight. The academy was particularly important for identifying patients for the program, administering the enrollment assessments and enrolling patients, and determining the appropriate case load for care managers. Because of the perceived benefit of the training, PMGs sent several staff to the academy, including staff members not directly involved in the program. At the quarterly leadership trainings, administrators noted that they learned about best practices and new tools and brought the information back to their organizations to support the program. For example, one PMG administrator presented on the use of triage nurses to identify patients for the program; other administrators we interviewed said that they learned about the role of the triage nurse at the leadership training and planned to implement a similar role in their organizations to increase the efficiency of their patient identification and enrollment processes.

Second, both medical directors and care managers played an important role in engaging PCPs in the program. Medical directors promoted buy-in among PCPs by discussing the IOCP program at regular staff meetings, sharing their personal experiences with the program, and providing evidence of its effectiveness in improving job satisfaction and patients' outcomes. They also reached out to PCPs on a one-on-one basis to discuss the program and identify patients for enrollment, which facilitated buy-in by helping PCPs identify high-risk patients and explaining how care managers can help them with the care of those patients. Care managers also promoted buy-in among PCPs by providing follow-up care to patients, such as helping them manage their medications or supporting patients in making lifestyle changes, and communicating the results of their care to the PCP. By providing quality care to high-risk patients and reducing the burden on providers, care managers build trust with PCPs and increase their willingness to refer patients to the program.

##### **B. Program characteristics**

In addition to the implementation process factors, one characteristic of the PBGH program also helped PMGs implement the program: the perceived relative advantage of the program compared with the standard delivery of care. Administrators, PCPs, and care managers regard the

program—particularly the role of the care manager—as an improvement to how care is delivered to complex, high-risk patients. Respondents talked about the important role of the care manager in supplementing standard patient care by providing emotional support and education to patients, and generally working with patients on issues that PCPs often do not have time to address, such as maintaining lifestyle changes or regularly measuring blood pressure or glucose levels. In addition, the program requires that care managers have an initial face-to-face interaction with each enrolled patient, whereas previously care manager interactions with patients were via telephone. Care managers described the telephone interactions as impersonal and one-sided, whereas face-to-face interactions help them develop trust with the patients and a better understanding of their overall health. The enhanced trust and understanding enables them to address patients' complex psychosocial needs along with the medical issues, which facilitates lifestyle changes that improve both physical and mental well-being. One care manager described the face-to-face interactions as allowing for "... a much deeper and wider scope of actually managing the patient." Care managers also build relationships with the patient's PCP. Patients observe the partnership between the care manager and PCP, reinforcing the trust between patients and providers. Finally, care managers improve the delivery of care to, high-risk patients with complex conditions by connecting them to community resources. Care managers said the program provides them more time to research community resources and work with patients to ensure they follow through and use those resources.

The feasibility of enrolling patients into the program began as a challenge to program implementation but became a facilitator through the trial-and-error implementation process employed by the PMGs. To enroll patients into the program, care managers initially used risk-stratification lists to cold-call patients and introduce them to the program. However, they found this method of enrolling patients to be unsuccessful with high-risk patients with complex conditions. Administrators and staff learned that care managers needed information from the patient's PCP to confirm why the patient was appropriate for the program. Relying only on information from the risk-stratification lists was not effective because some patients on the lists were inappropriate for the program—for example, deceased patients or those who already had a strong social support for their condition. In some cases, this process evolved to the point at which the PCP introduced the patient to the care manager and recommended that the patient participate in the program. Regular meetings among program staff to discuss implementation facilitated the process for effectively identifying and enrolling patients.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located, can also influence implementation. Three internal factors and one external factor facilitated implementation of the PBGH program: (1) experience with population health programs, (2) capacity before program implementation, (3) innovative implementation climate, and (4) ability to address unique needs of each patients.

First, before implementing the IOCP, the three PMGs we visited had already implemented population health programs. Therefore, they had registered nurses and social workers on staff who were familiar with the principles of care management or they were in the process of filling open care management positions. This prior experience with disease management also supported the establishment of trust between program staff and PCPs, which facilitated the integration of

program staff into the delivery of care management for enrolled patients. In addition, administrators who had already hired or were able to hire program staff with care management experience found this to be critical in implementing the program. In contrast, administrators who experienced trouble recruiting program staff with care management experience or training identified this as an important challenge.

Second, the three PMGs we visited had risk-stratification reporting processes in place before program implementation and, therefore, did not use the Milliman risk score reports to identify patients to enroll in the program. This facilitated program implementation by giving care managers immediate access to internally produced lists of high-risk patients who might be appropriate for care management. The risk-stratification information was important in knowing how to allocate program resources during implementation, in some cases permitting administrators to identify practices with higher numbers of high-risk patients and allocate care management resources accordingly.

Third, administrators described their organizations as innovative and their leadership as willing to take risks to improve patients' care. For example, when asked why his organization was committed to making the intensivist model a success despite experiencing several challenges, the medical director responded, "We're interested in being innovative, trying to see what works. I think the [intensivist] model will work. But I think it's going to take a lot of time." Administrators at the two other PMGs we visited echoed similar sentiments.

Fourth, the patients enrolled in the program have complex health and social needs that the program staff could address. Many of these patients benefit from face-to-face visits, which sometimes take place in a patient's home and facilitate the provider's understanding of each patient's unique circumstances and care needs. Care managers described how they are uniquely positioned to gain in-depth knowledge about the individual challenges patients face.

One internal factor and two external factors presented challenges to the implementation of the care management program: (1) structural characteristics of independent practice associations (IPAs), (2) payment models, and (3) technological environment. First, of the three PMGs we visited, two are health care foundations and one is an IPA. The respondents at the IPA described challenges that respondents at the two foundations did not identify, including the limitations of patients' data for identifying eligible patients and managing their care, not being part of an integrated network, and not having direct access to inpatient records. These challenges ultimately made it difficult to identify and track patients at the IPA site level. Second, because care management services are not prepaid, administrators said providing care management involves a significant amount of risk for their organizations. They agree that the program was underfunded; the resource investment on their part was significant; and the return on investment, if it occurs, will be realized only in the future. Third, for care management to be successful, providers need access to comprehensive medical information on their enrolled patients. The lack of coordination with other providers who treat enrolled patients and the wide range of electronic health record systems used by different providers impede care managers' ability to access patients' information, particularly in the IPA model. This lack of information also makes it difficult to conduct risk-stratification: as one physician stated, "We can only risk-stratify if we have all the claims."

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which PBGH implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

The three PMGs we visited implemented the distributed care model on schedule. As previously discussed, these PMGs had risk-stratification reporting processes in place before the implementation of the HCIA-funded program and were therefore not delayed by having to rely on information from Milliman to identify high-risk patients (whose risk stratification was delayed six months from the original schedule). PBGH demonstrated flexibility in implementing its program design, allowing PMGs to deviate from the original operational plans to more effectively identify high-risk patients with complex conditions. Dosage was not a relevant outcome measure for this program.

### **B. Program reach and spillover**

As of March 2014, PMGs enrolled 4,337 unique patients into the care management program, slightly below its enrollment target of 5,000 patients by March 2014. The main barrier to enrollment was identifying eligible patients and engaging them in the program. Respondents described difficulties identifying the appropriate population of patients to target for enrollment. For example, although one PMG initially enrolled more than 200 Medicare fee-for-service patients, many of the patients required only temporary care management support and either dropped out of the program or lost contact with their PCPs. In addition, PMGs lack access to encounter data to identify patients in a Medicare managed care plan who would benefit from extended enrollment in the care management program. One PMG attempted to recruit high-risk immigrants into the program. However, this population presented challenges due to language and cultural barriers. As described earlier, the enrollment strategies implemented by PMGs evolved to increase program reach, from cold-calling patients to working with PCPs to successfully engage patients in the program. Two administrators described increasing their patient enrollment to almost 100 percent of the patients who were approached after using a patient's relationship with a PCP to positively influence the patient's opinion about the benefits of participating in the program.

In terms of the extent to which the program affected patients and staff beyond the targeted area of focus, PMGs sent several staff not directly involved in the program to the Care Coordinator Academy. Administrators perceived great benefit in their staff developing skills covered in the training, including understanding patients' psychosocial issues and assessing their needs, motivational interviewing, goal-setting, and engaging patients in their care for all patients they serve, not only those enrolled in the program.

### **C. Sustainability and replicability**

Administrators from all three sites we visited expressed a commitment to expanding the program and sustaining it after the end of the award, but will have to identify funds for this to

occur. Although PBGH provided a small amount of funding for the program,<sup>10</sup> the PMGs are funding the majority of program costs out of pocket, about which one administrator stated, “To expect an organization to cover costs completely on their own for the long term [is] not sustainable. There needs to be something—you can call it a care management fee.” One administrator described a financing mechanism called value proposition funding, under which the PMG funds programs that have the potential to improve care delivery and patients’ outcomes. After five years of value proposition funding and demonstrating improvements in care, executive leadership would incorporate program funding into the PMG’s global budget. Respondents also identified nonfinancial barriers to sustaining the program—specifically, the low staff-to-patient ratio (approximately one care manager to 130 patients reported for all three sites) and lack of flexibility in certain program activities. First, program staff remarked on the need for more program staff to serve patients enrolled in the program; one administrator suggested tightening the criteria for eligible patients to prevent overburdening program staff. Second, respondents from one PMG expressed concerns about the time- and labor-intensive tasks involved in patients’ identification, enrollment, and assessment. As discussed in the section about internal and external factors, IPAs do not have direct access to inpatient records, requiring program staff to manually enter and report data in order to identify eligible patients and manage their care.

Because of the multiple benefits to patients’ care delivery, administrators are hopeful about the replicability of PBGH’s distributed care management model and they hope to hire additional care managers to expand the program to enroll more patients. The intensivist model, on the other hand, “has been a real struggle from the beginning,” because PCPs do not want to give up their patients and patients do not want to give up their PCPs. One barrier to replication is lack of sufficient data for an expansion to commercial populations, which includes patients with employer-sponsored or other private health insurance. It is not clear to us why, but currently, only patients with Medicare can be enrolled due to the data constraints of commercial payers. As one administrator stated, “If I could easily transfer the data to Milliman, the claims data, I would expand the program tomorrow. Right now I’m limited to who I can enroll in the program to 20,000 patients—the Pioneer ACO [accountable care organization] population.”

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Respondents from the three PMGs we visited described positive effects of the care management program on providers. For example, PCPs expressed appreciation communicating regularly with care managers about their patients and as a result felt more engaged in the care of high-risk patients with complex conditions than they did before the program. Second, care manager involvement in the care of such patients increased PCPs’ satisfaction by reducing the burden on them to meet the various care needs of those patients.

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<sup>10</sup> Approximately 38 percent of the award funding is allocated to PBGH and PMG personnel charges to design and build the program; PMGs receive funding to staff an information technology analyst and a project manager. Approximately 27 percent is allocated to subcontractors to conduct workforce training, build a care management platform, manage data systems and reporting, and conduct evaluation. Approximately 25 percent is allocated to PMGs to subsidize care management and data reporting.

## **B. Perceived effects on patients**

Respondents reported that participation in the care management program appears to be positively affecting patients. PCPs and program staff described benefits resulting from the program, including increased patients' satisfaction and improved delivery of care and health outcomes. First, respondents believe that patients are satisfied with the level and intensity of the care they receive. For example, one care manager noted her patients' satisfaction with the program when she calls them to check in; a PCP remarked that patients feel better not only medically, but also socially, because they learn to take better care of themselves and they know they can reach out to care managers for extra support. Second, administrators believe patients experienced an improvement in care delivery. As one care manager described, "... now, there is definitely this cohesion with the care team, the physician with the [program staff]. That really lends itself to just wrapping the patient in this real support across the whole continuum of care." Several respondents agreed that team collaboration facilitated more effective delivery of care and, as a result of the program, patients are better equipped to navigate the health care system, including scheduling and keeping appointments and using the resources available to them. Third, administrators, PCPs, and program staff perceive that patients' outcomes are improving as a result of the program. One administrator thought patients enrolled in the program were less likely to visit the ED or be admitted to the hospital, in part because regular communication between care managers and patients enables PCPs to intervene before a patient's condition requires urgent care. Care managers shared numerous stories of patients who improved their health after implementing patient-specific solutions, such as rearranging their homes to prevent falls, learning hygiene practices to prevent infections, and organizing medications to improve adherence.

## **VII. Conclusions**

Our findings provide insights about how implementation is likely unfolding across the PMGs working with PBGH to implement a care management program. Two years into its three-year HCIA program, the implementation experience of PBGH is varied, with some PMGs apparently more successful than others in implementing the HCIA program. The technical assistance provided by PBGH gives the PMGs flexibility in identifying, recruiting, and enrolling patients and supports the sharing of best practices for overcoming implementation challenges. However, some PMGs have struggled to recruit, identify, or enroll patients, particularly those who do not have direct access to patient information or whose organizations do not have a close affiliation with contracted physicians. Both of these factors are common to IPAs and other management services organizations. Program staff felt well trained for their care management roles, and respondents described multiple advantages of the program compared with how care was delivered previously, including working face-to-face with high-risk patients with complex conditions, rather than by telephone; supplementing standard patient care by providing emotional support and education to patients; and establishing trust with patients to better understand their overall health. PMG administrators are committed to being innovative and willing to take risks to improve patients' care, but they expressed concerns about financially sustaining the program because care management services are not prepaid and the return on investment will be realized only in the future.

**PEACEHEALTH KETCHIKAN MEDICAL CENTER**

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## PEACEHEALTH KETCHIKAN MEDICAL CENTER

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of PeaceHealth Ketchikan Medical Center’s (PeaceHealth’s) Health Care Innovation Award (HCIA) primary care redesign program as of May 2014, nearly two years after program award. It is based on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted May 6–8, 2014. The site visit included interviews with PeaceHealth program leaders and staff, as well as providers and staff at two primary care practices: Ketchikan Primary Care Clinic and Prince of Wales Primary Care Clinic. Both practices are located in a remote island region in southeastern Alaska. The Ketchikan Primary Care Clinic is adjacent to the PeaceHealth Ketchikan Medical Center, and the Prince of Wales Primary Care Clinic is 57 miles away on an island with a population of about 4,500 and accessible only by plane or boat. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the PeaceHealth primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) PeaceHealth received a three-year, \$3.2 million HCIA to implement a coordinated care program. The goal of the initiative is to improve access to primary care, increase support to and improve outcomes for high-risk patients (particularly those with diabetes and heart failure), and strengthen primary care teams. Through its coordinated care program, PeaceHealth aims to reduce 30-day readmission rates by 20 percent; costs associated with emergency department (ED) visits by 75 percent; costs associated with emergency travel and associated costs (for example, emergency transportation to tertiary care hospitals in Anchorage and Seattle) by 15 percent; and overall cost of care by 15 percent.

**Table 1. Summary of PeaceHealth primary care redesign program**

Awardee’s name	PeaceHealth Ketchikan Medical Center
Award amount	\$3,169,386
Implementation date	October 2012
Program description	<ol style="list-style-type: none"> <li>1. Hire new staff, including care coordinators, a social worker, and a nurse practitioner to improve care coordination and increase capacity for internal referrals and transitional care</li> <li>2. Establish a scrub-and-huddle process to provide care management by identifying and communicating a patient’s needs before a visit</li> <li>3. Establish a certified medical office assistant (MOA) training program through the University of Alaska and enhance training for current MOAs</li> </ol>
Innovation components	Care coordination, care management, transitional care
Intervention focus	Practice
Workforce development	<ol style="list-style-type: none"> <li>1. Create positions for four care coordinators, one social worker, and one nurse practitioner</li> <li>2. Offer internal training to MOAs and care coordinators and develop new certification program for MOAs</li> </ol>
Target population	All patients with chronic conditions, including diabetes and congestive heart failure
Program setting	Provider-based (primary care practices)
Market area	Local (Ketchikan and Craig, Alaska)

Table 1 (continued)

Market location	Rural (remote island communities in southeastern Alaska)
Core outcomes	<ul style="list-style-type: none"> <li>• 20 percent reduction in 30-day readmission rates</li> <li>• 75 percent reduction in emergency department (ED) costs</li> <li>• 15 percent reduction in emergency transportation costs</li> <li>• 15 percent reduction in total costs</li> </ul>
Source:	Review of PeaceHealth program reports.
Notes:	The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

Key components of the PeaceHealth innovation award include (1) hiring care coordinators, a social worker, and a nurse practitioner to improve care coordination and expand capacity; (2) establishing a routine process to identify, address, and communicate a patient’s care needs before each appointment, known within PeaceHealth clinics as the scrub-and-huddle process (scrubbing involves reviewing a patient’s medical records to identify outstanding care needs, such as laboratory tests, mammograms, immunizations, or colorectal screenings, and the huddling process is a team meeting to review a patient’s needs before a regularly scheduled visit); and (3) creating a local certification program for new medical office assistants (MOAs) and increasing the skill set of existing MOAs.

**III. Operational update**

In this section, we provide an update on the operational aspects of the PeaceHealth primary care redesign program as of May 2014 (see Table 2). PeaceHealth has filled its program-funded positions, and the newly hired care coordinators and social worker are actively involved in coordinating and managing patient care at both sites. The MOA or care coordinator reviews patients’ medical records before each appointment to ensure outstanding care needs are identified and addressed. Care coordinators also address patients’ needs after hospital discharge, reviewing charts for diabetic patients before each appointment to identify necessary laboratory tests, promoting health maintenance, and managing high-risk patients within care teams. In addition, a social worker was hired in October 2013 to address patients’ psychosocial and financial barriers to care. PeaceHealth reevaluated its scrub-and-huddle procedures within the new care teams, realigning roles and responsibilities.

**Table 2. Status of operational aspects of PeaceHealth primary care redesign program, May 2014**

Operational aspects	Program components	Current status
Innovation components	1. Care coordination	Care coordinators and social worker continue to participate on care teams to address patients’ needs; they implemented and refined scrub-and-huddle processes in care teams.
	2. Care management	Care coordinators continue to work with patients to help them manage their health care needs.
	3. Transitional care	Care coordinators follow up with patients after discharge to review discharge instructions, reconcile medications, and provide patient education and support.

Table 2 (continued)

Operational aspects	Program components	Current status
Workforce development	Recruitment and retention	PeaceHealth has experienced turnover in the care coordinator positions, but all new positions are currently filled.
	Training	Care coordinators completed training through Oregon Health and Science University; a clinical educator organized informal training sessions and conducted competency trainings for current MOAs; PeaceHealth continues to work with the University of Alaska to develop a curriculum for an MOA training and certification program.
Patient enrollment		The program has enrolled a total of 1,981 distinct patients (since inception).

Sources: Interviews with program staff and review of program reports, May 2014.

In terms of workforce development, the program has focused on hiring, retention, and training. There has been turnover in the care coordinator position, with two care coordinators resigning during the first year of the program: one care coordinator accepted a home health position and the other moved from the region. Both staff members have been replaced and all care coordinator positions are currently filled. In terms of training, all but one of the care coordinators completed a care management training program through Oregon Health and Science University. The remaining care coordinator was hired in December 2013 and is scheduled to attend training in November 2014. In addition, PeaceHealth has partnered with the University of Alaska to develop a new curriculum program for a two-year certified medical assistant training course. An internal clinical educator is working with existing MOAs to enhance their set of skills and has conducted monthly lunchtime brown-bag training sessions with the MOAs in the Ketchikan Primary Care Clinic.

PeaceHealth defines direct enrollment as all patients who are on a PeaceHealth medical group primary care provider panel and receiving services from an HCIA-funded position, such as the care coordinator or social worker. However, the program indirectly benefits all patients at either of the two practices who have a PeaceHealth medical group primary care provider. By March 31, 2014, PeaceHealth had enrolled 1,981 direct patients into the care coordination program (PeaceHealth did not include projections for direct participants in its application). Thirty percent of these patients were enrolled in the first three months of 2014. Between January and March 2014, PeaceHealth had 3,374 indirect participants, roughly equal to its projected participant count of 3,445.

**IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

**A. Implementation process**

Two implementation process factors facilitated the implementation of the care coordination program: (1) dedicating resources to support the program and (2) monitoring progress to guide

ongoing improvement. First, program leaders invested HCIA resources where they believed they could have the biggest impact, using HCIA funding to hire new staff to provide care coordination and social work services, to train MOAs, and to increase access to care. Recognizing that providers did not have time to address all of their patients' needs (such as diabetes education, routine health maintenance follow-up, and transitional care after hospitalization), four new care coordinator positions were created. In addition, a newly hired social worker addresses patients' psychosocial issues and links them to community resources. Training was also provided to increase the competency level of existing MOAs, enabling both MOAs and nurses to work closer to the top of their licensure. A nurse practitioner was hired to increase access to care, and clinic hours were expanded to include early mornings and evenings.

Second, PeaceHealth established a self-monitoring process that guided ongoing program revisions and quality improvement efforts, which supported implementation by enabling PeaceHealth to make real-time adjustments to the program based on evidence. Program administrators track monthly patient enrollment, health maintenance, chronic disease, and quality-of-care process and outcome measures, reviewing data on a weekly basis to adjust operational plans as necessary. For example, program administrators noticed that diabetic hemoglobin A1c measures were rising and, because the chart review can be more complex for these patients, they transferred the responsibility for the scrub of these patients from MOAs to care coordinators.

One process-related factor that presented challenges for PeaceHealth in implementing its program has been the engagement of and buy-in from staff. For example, providers initially did not understand the purpose or role of care coordinators. To address this challenge, the program manager and clinical educator attended providers' meetings to clarify the role of the care coordinator and explain the support they could provide. Within six months, providers began trusting care coordinators and referring their patients to care coordination for follow-up services. The social worker reported similar challenges engaging providers and getting them to refer patients who could benefit from the services she provided. She created and circulated a pamphlet explaining her role and what she could do to assist the primary care team. Providers have also been hesitant to buy into the scrub-and-huddle process. Some doctors view these processes as enabling them to focus on clinical care and make their appointments more thorough. However, if the MOA is not adequately trained and the scrub and huddle is not executed properly, some providers feel that the appointment is inefficient because the necessary chart preparation was not conducted beforehand or they need to rework the chart preparation themselves. Finally, buy-in among MOAs has also been an issue because MOAs are asked to engage in teams and assume more responsibilities than before. To address this issue, program leadership and the clinical educator reiterated that the purpose of the workflow process change was not for MOAs to replace nurses and reduce staff, but rather to improve patients' care and have everyone working at the top of their certification to support providers.

## **B. Program characteristics**

In addition to the implementation process factors, three characteristics of the PeaceHealth initiative also helped it implement the program: (1) perceptions of the relative advantage of the program compared with the standard delivery of care, (2) frontline users' flexibility in implementing the program, and (3) adaptation of the program to meet patients' and providers'

needs. First, obtaining staff buy-in was initially a challenge, but as the program continued to develop, administrators, providers, and staff began to agree that the new model offered an advantage for improving care compared with the standard delivery of care. Frontline staff reported that, before the implementation of the PeaceHealth program, patients would come in for follow-up diabetes appointments and providers would not have the necessary lab work to assess their health, meaning patients would have to return for an additional visit when their lab results were available. With the scrub-and-huddle process, lab tests are identified and scheduled before the appointment, making the visit more effective for both the provider and patient. Providers reported that they previously had to conduct six or seven visits a year to address certain problems. Now, care coordinators can follow up with patients and share information about their progress with providers between visits, reducing the workload for providers. Administrators also believe care coordinators bring an added value to the patients. For example, program staff said that patients are often overwhelmed with information in the hospital, and having someone connect with them at home after an inpatient or ED visit helps ensure they understand their medications and discharge instructions.

Second, PeaceHealth's program gives frontline staff flexibility in implementing the care coordination model to meet an individual patient's needs and to address providers' preferences. Program leadership remains focused on the outcomes of the interventions, but if outcomes are met, frontline staff are given flexibility in how they implement the program. For example, program administrators recognize the need for flexibility in administering the protocols and have shown a willingness to allow the team to think innovatively. Care coordinators can schedule their own appointments, customize services for patients, provide patients with access to educational materials and resources, and follow up with them by telephone. There is also flexibility in how providers execute the scrub-and-huddle process. Although some care teams do a less formal huddle (because they share the same office and frequently discuss their patients), others go through a formal scrub and huddle at the beginning of each week or day before seeing their patients.

Third, PeaceHealth has been able to adapt its program to focus on specific populations and to realign staff roles as the program learns more about workflows that are effective for particular groups of patients. Although the program initially focused its transitional care component on all discharges from the PeaceHealth Medical Center, it later narrowed its focus to only those patients with heart failure and diabetes because program leadership believed that these patients could benefit the most from transitional care services. However, more recently it has begun to provide care coordinators the freedom to decide which patients are at greatest risk for readmission and to follow up with them. The care coordination program also originally focused on smoking cessation, but later shifted its focus to patients with diabetes. Program administrators determined that most smokers have already received antismoking education and care coordinators were unable to offer new information. In contrast, they believed that patients with diabetes often fail to understand the information presented to them and could benefit from the additional education.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located can also influence implementation.

Three internal factors have facilitated implementation of the PeaceHealth program: (1) the culture of the organization, (2) team collaboration, and (3) the structural characteristics of the two clinics. First, PeaceHealth's existing culture helped facilitate the program's implementation: program staff said the intervention was consistent with PeaceHealth's mission and its overall approach to care. The alignment of goals between the program and the corporate office has facilitated program leadership, despite the potential loss of hospital revenue from lower inpatient and ED service use. Second, after overcoming initial concerns about the new care coordinator position, frontline staff reported that care teams worked well together. Providers expressed confidence in care coordinators and trusted that care coordinators would communicate with them about patients' care when necessary. Providers reported that they are pleased with the current care coordinators and the open communication. Finally, the care coordination program operates within a larger health care system, which facilitates PeaceHealth's ability to implement the intervention. Because the participating clinics and the hospital are part of the same corporate structure, discharge notifications and collaboration between the hospital and clinics are more streamlined. The care coordinators can easily access the list of patients discharged from the hospital and the ED each day and follow up with those who need transitional care services. In addition, because there are few other providers on either island, the care coordinators are usually able to capture most of the relevant medical information for their patients.

Two external factors have presented challenges to implementing the initiative at PeaceHealth: (1) the technological environment and (2) the environmental challenges of being in a remote location in Alaska. First, independent of this HCIA initiative, PeaceHealth launched a new electronic health record (EHR) system, called EpicCare, in September 2013 in the two clinics. However, the hospital still uses its legacy system (called Centricity) and does not expect to transfer to EpicCare until 2016. Because the hospital and clinics now use separate EHR systems, certain shared reporting and tracking functionality features were lost. However, the switch to EpicCare also facilitated several process improvements. For example, EpicCare has the ability to extract information from patients' charts, which has made the scrubbing and chart review process easier. In preparation for the implementation of EpicCare, clinics also had to reexamine and standardize some of their workflow processes, which led to greater standardization and alignment of roles and responsibilities of MOAs with other clinic staff. The clinics are also considering purchasing wraparound software that will support care coordinators by creating dashboards with actionable information from their administrative list of discharges.

Second, PeaceHealth's location in southeastern Alaska presented unique challenges for implementing this award. Both participating clinics are located in remote areas, where it is often difficult to recruit and hire staff. PeaceHealth administrators struggled to fill the program manager position and experienced turnover among care coordinators. In addition, because medical assistance is not recognized as a credentialed medical position in Alaska, staff hired as MOAs often lack formal training and have limited clinical skills (such as giving injections), compared with licensed medical assistants in other states.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which PeaceHealth implemented its HCIA program. As part of this qualitative evaluation, we

consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

PeaceHealth has implemented the care coordination component on schedule. Despite high turnover, it has filled the care coordinator and social worker positions, implemented the team huddles, and begun to provide care coordination services in both clinics within the expected time line. PeaceHealth has experienced delays in implementing the MOA training component. The partnership with the University of Alaska to create a certified MOA training curriculum is about six months behind schedule and should be implemented this fall. The program will apply for accreditation in the spring and, just as HCIA funding ends, the program should graduate its first group of students. The internal training of current MOAs was also behind schedule, as the lunchtime training sessions began only in February 2014. The clinical educator who also served as a care coordinator during the start of the program transitioned to a full-time educator role only in January 2014. As previously discussed, PeaceHealth has demonstrated flexibility in implementing its program design, deviating from its original operational plans to focus on high-risk patients and shifting from smoking cessation to diabetes education. Dosage was not a relevant outcome measure for this program.

### **B. Program reach and spillover**

The program benefits patients in two ways. First, it directly benefits patients who interact with care coordinators or a social worker based on (1) internal referrals from providers; (2) an internally generated health maintenance list (for example, a list of patients who are overdue for mammograms); and (3) a patient discharge list from the local hospital or ED. Second, it indirectly benefits all PeaceHealth Medical Center patients who have a PeaceHealth primary care provider at one of the two participating clinics. Between January and March 2014, PeaceHealth had 3,374 indirect participants, roughly equal to their projected indirect participant count of 3,445. In addition, as of March 2014, the HCIA program had enrolled 1,981 direct participants (since inception). (PeaceHealth did not include projections for direct participants in its application.) On average, PeaceHealth clinics enrolled 267 unique direct participants each month in the first half of 2014. Program administrators also reported that they provide HCIA-funded services to about 40 percent of all patients discharged from the PeaceHealth Ketchikan Medical Center.

### **C. Sustainability and replicability**

Practice leadership believes the award has served as a bridge to help move their practices toward value-based payment models in the future. They are currently exploring alternative revenue streams to cover the costs of the care coordinators after the award ends, such as a shared savings model with Alaska Medicaid. Administrators believe that they could continue to operate the program if they were able to recover 60 percent of the savings from the intervention services. PeaceHealth leadership continues to engage with state-level stakeholders and other payers to see if they can realize some revenue from the program.

In terms of replicability, PeaceHealth's system management is monitoring the HCIA-funded program to help make decisions about potential changes in the delivery of primary care in its

other rural markets. PeaceHealth is specifically considering implementing a similar program in two other small rural facilities in Washington State, but there have been no formal plans to date.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Most primary care providers agreed that the program has made their work more complete and enhanced the level of patient-centered care. For example, one provider reported that he now sees patients with chronic conditions less often because the care coordinators can manage their care between visits. In addition, providers have access to additional support staff who provide education and connect them with social services and financial assistance. Although some providers have not yet fully adopted the team-based model of care, those who do report that the scrub-and-huddle process makes health maintenance efforts more systematic and effective than before. However, other system wide changes (such as the introduction of the new EHR system) make it difficult to assess the impact of intervention services on providers' practice. Providers also reported an increase in job satisfaction because they have help addressing the intractable barriers to care faced by some of their patients. Lastly, MOA training has improved MOAs' level of clinical knowledge and competency.

### **B. Perceived effects on patients**

PeaceHealth staff and providers reported that the care coordination program was having a positive effect on patients, evidenced by greater patient-centered care, lower use of ED services, and increased access to care. First, frontline staff expressed the view that patients feel that both participating practices are more engaged in their care than before and that the patients appreciate the personal touch that care coordinators and the social worker provide. According to frontline staff, patients have begun to trust care coordinators and the social worker and to engage and participate in their own care. Care coordinators said they have been successful at addressing some of the hurdles that their patients face by helping them follow up on providers' orders, connecting them to equipment and supplies (such as diabetes testing supplies or medications), and connecting them to other clinic and community resources (such as public assistance, transportation, or diabetes education). The social worker has been successful identifying other psychosocial barriers that prevent patients from getting the medical care and support services they need and engaging with care coordinators.

Second, providers and staff reported that patients seek care in the ED setting less frequently than before. Care coordinators have begun to call patients after discharge to make sure they understand their medications and follow up with their primary care providers. Through addressing barriers to care, care coordinators said they are also able to help prevent avoidable hospitalizations. Finally, the program has also increased access to care for patients by extending clinic hours.

## **VII. Conclusions**

Almost two years into its three-year program agreement, PeaceHealth successfully implemented all of the components of its HCIA program and has worked to achieve high levels of provider and staff engagement. Although provider and staff buy-in took time, the team learned to work together and trust one another, which is essential for a program that encourages care



coordinators to use critical thinking skills, rather than relying solely on formal operational protocols. PeaceHealth's location on two remote and isolated islands in southeastern Alaska created both opportunities and challenges for the implementation of a primary care redesign innovation. The remote location of the clinics presented opportunities for potentially large cost savings by preventing unnecessary medical evacuations by plane to tertiary hospitals in Anchorage or Seattle. Operating within a health care system owned and operated by a single corporate office also facilitated the flow of patients' information between clinics and between clinics and the PeaceHealth Ketchikan Medical Center, making transitional care and care coordination innovations easier to implement. However, staff reported that recruiting and retaining staff in an isolated and remote region of Alaska were challenges. The transition of the new electronic medical record (EMR) system also created temporary reporting and data-sharing challenges. The HCIA-funded program has sought to build long-term solutions by developing a local certification program for new MOAs and increasing the competencies of current MOAs. In addition, the PeaceHealth leadership reported using results from the program to educate Medicaid and commercial payers about the potential savings from improved care coordination in the hopes of finding additional sources of revenue to continue the intervention services after grant funding ends.

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**RESEARCH INSTITUTE AT NATIONWIDE CHILDREN'S HOSPITAL**

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**RESEARCH INSTITUTE AT NATIONWIDE CHILDREN'S HOSPITAL**

**I. Introduction**

This summary provides an update of the implementation experience and effectiveness of the Research Institute at Nationwide Children's Hospital's (NCH's) Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, nearly two years after program award. It is based on the awardee's quarterly reports and information collected during the first-round site visit conducted March 17–21, 2014. The site visit included interviews with program leaders, program staff, and hospital administrators at NCH and their partners on the award, Akron Children's Hospital (ACH) and Partners for Kids (PFK), a pediatric Medicaid accountable care organization (ACO) led by NCH. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

**II. Overview**

In this section, we provide a summary of the NCH primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) NCH received a three-year, \$13.2 million HCIA in partnership with ACH and PFK to improve care and health and lower costs for children enrolled in Medicaid managed care, particularly those with complex chronic conditions and behavioral health care needs. NCH and its partners aim to replicate an existing Medicaid ACO for children, improve care for specialty populations served by NCH and ACH, and reduce the rates of preterm births and related neonatal hospital care in Summit County, Ohio. Their goals for the program include (1) reducing per-member per-month (PMPM) costs for children enrolled in Medicaid managed care due to disability by 2 percent, (2) reducing PMPM costs for other children enrolled in Medicaid managed care by 1 percent, (3) reducing hospital inpatient days for children with feeding tubes by 10 percent, (4) increasing the number of tube-fed children with healthy weights by 10 percent, (5) providing proactive care coordination for 85 percent of tube-fed children with a neurological diagnosis, (6) reducing behavioral health-related hospital readmissions by 30 percent, (7) reducing post-discharge impairment for hospitalized behavioral health patients by at least 15 percent, (8) increasing the rate of outpatient mental health follow-up appointments within 30 days following discharge to at least 85 percent, (9) increasing progesterone use in pregnant mothers in Summit County with previous preterm births by 10 percent, (10) reducing the preterm birth rate in Summit County by 20 percent, and (11) reducing neonatal intensive care unit days at ACH by 10 percent.

**Table 1. Summary of NCH primary care redesign program**

Awardee's name	Research Institute at Nationwide Children's Hospital
Award amount	\$13,160,092
Implementation date	November 14, 2012
Program description	1. Replicate a Medicaid accountable care organization (ACO) model in northeast Ohio 2. Enroll children eligible for Medicaid based on disability into an existing Medicaid ACO 3. Improve care and lower costs for children with behavioral health care needs 4. Improve care and lower costs for children with complex chronic conditions 5. Lower the rate and reduce the cost of premature births in Summit County, Ohio
Innovation components	Care coordination, care management, transitional care, health information technology, patient-centered care, integrated team care, payment reform, workflow redesign, home care
Intervention focus	Individual

Table 1(continued)

Workforce development	Create new positions (complex care and behavioral health care coordinators, parent peer partners)
Target population	Medicaid-enrolled children, children with chronic conditions, children with behavioral and mental health disorders, mothers with previous premature births
Program setting	Provider (hospital-based)
Market area	Regional (46 of 88 counties in Ohio)
Market location	Urban and rural
Core outcomes	<ul style="list-style-type: none"> <li>• 2 percent reduction in cost of care for children enrolled in Medicaid based on disability</li> <li>• 1 percent reduction in cost of care for other Medicaid-enrolled children</li> <li>• 10 percent reduction in hospital days for children with feeding tubes</li> <li>• 10 percent increase in the percentage of tube-fed children with healthy weights</li> <li>• 85 percent increase in enrollment in proactive care coordination for tube-fed children with a neurological diagnosis</li> <li>• 30 percent reduction in behavioral health hospital readmissions</li> <li>• 15 percent decrease in impairment of psychiatric patients 30 days after discharge</li> <li>• 85 percent rate of follow up with mental health provider within 30 days after discharge</li> <li>• 10 percent increase in progesterone use by pregnant mothers with prior preterm births</li> <li>• 20 percent reduction in preterm birth rate</li> <li>• 10 percent reduction in neonatal intensive care unit days</li> </ul>

Source: Review of NCH program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

The HCIA initiative attempts to change care delivery through (1) replicating an existing pediatric Medicaid ACO model; (2) enrolling the population of children eligible for Medicaid based on disability in the PFK service area into managed care through the PFK ACO; (3) improving care for children with behavioral health needs through parent peer partners, telehealth, and transitional care coordination strategies; (4) improving care for children with complex chronic conditions through standardization of hospital care protocols, family education and self-management resources, and a complex care coordination team; and (5) implementing a prematurity-prevention initiative centered on delivery of progesterone therapy to women at risk for repeat premature deliveries.

### III. Operational update

In this section, we provide an update on the operational aspects of the NCH primary care redesign program as of April 2014 (see Table 2). ACH faced delays in implementing the ACO due to ongoing negotiations with Medicaid managed care organizations (MCOs). NCH and ACH continued to implement the behavioral health and complex care interventions according to plan and are making further refinements to ensure the programs are sustainable. These refinements include assessing the composition of multidisciplinary care coordination teams and the development and testing of the electronic health record (EHR)-based care coordination tools. NCH began to distribute tablet computers to families of children with behavioral health needs in the first three months of 2014; the children and caregivers will use the tablets to complete an electronic version of a therapy program (the Triple P – Positive Parenting Program) and then return them. Implementation of telehealth options for behavioral health services has been delayed, although NCH has continued to explore additional sites for implementing it in the award’s remaining time. ACH continued to gather data and engage providers to better target its prematurity-prevention program and continues to promote progesterone use by eligible populations.

**Table 2. Status of NCH primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. ACO	ACH continued to negotiate contracts with Medicaid MCOs. PFK was beginning to serve children enrolled in Medicaid managed care based on disability.
	2. Behavioral health	NCH and ACH continued to implement behavioral health care coordination and parent peer partner interventions. NCH planned telehealth interventions to begin in the second quarter of 2014.
	3. Complex care	NCH and ACH continued to implement complex care coordination and standardization of hospital care for children with feeding tubes and an underlying neurological diagnosis, and began enrolling children with a tracheostomy.
	4. Prematurity prevention	ACH collected baseline and follow-up data and continued to provide parent and provider education on progesterone use.
Workforce development	NCH and ACH experienced turnover in parent peer partners. They hired and trained new parent peer partners and fully staffed behavioral health and complex care coordinator positions.	
Patient enrollment	NCH and ACH cumulatively enrolled 3,005 patients since inception.	

Source: Interviews with program staff and review of program reports, April 2014.

Both NCH and ACH experienced staff turnover in the parent peer partner program. Parent peer partners were recruited and employed on the basis of their experiences managing the mental health problems of their own children. Program administrators had to learn how to adapt the program to provide parent peer partners the flexibility to deal with their children’s mental health crises as they arose. Both hospitals were able to refill the positions. However, because the initial training was based on a group model, they had to develop an alternative approach for training parent peer partners individually. The behavioral health and complex care coordination programs were fully staffed with experienced individuals who were able to be trained on the state and MCO care coordination requirements.

**IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

**A. Implementation process**

Three implementation process factors facilitated the implementation of the NCH and ACH programs: (1) monitoring and feedback of program processes and outcomes, (2) executing the core behavioral health and complex care components with an expectation of adaptation, and (3) dedicating resources to support the program. We discuss each of these implementation process-related factors next.

First, NCH and ACH have developed a data-oriented implementation approach. NCH took advantage of the experience that PFK and its own large research institute already had collecting

and analyzing program data, and helped ACH leverage these resources and experience. Program leaders emphasized the importance of data to monitor the program, demonstrate patients' outcomes and financial results to departmental and hospital administrators, and support the inclusion of intervention services in budget and operational plans. Program administrators also reported that the award helped them generate support from hospital executives for data-measurement activities. For example, administrators noted that the award helped prioritize changes in the hospitals' EHR systems to support the behavioral health and complex care interventions. They also worked with their vendor to build a dashboard that would support reporting on information about program operations and workflow processes. Program staff described thinking more frequently about process and outcome measures and developing more data collection and analysis skills.

Second, NCH and ACH have been developing and executing their behavioral health and complex care interventions through continuous adaptation. As one hospital administrator noted, "At the beginning, we all had an idea of what it looked like but didn't know exactly how to do it. We were learning as we flew the plane." Initially, staff roles were ambiguous and frontline staff designed their own roles and responsibilities. Behavioral health and complex care coordinators facilitated the definition of roles and responsibilities by hiring people who had performed the same or similar functions in other organizations. However, program administrators and frontline staff reported that several staff left the program because they were uncomfortable with the ambiguity of their position. In addition, the partnership between NCH and ACH has helped them define and execute the components of their programs; the two hospitals have been able to discuss and troubleshoot problems and learn from each other's experiences. The various components within each organization have operated fairly independently. However, one administrator noted that, as processes within a component are more clearly defined, they will begin to streamline processes across components.

Third, frontline staff and administrators described several ways in which that they were able to adapt the program to match the available resources. For example, complex care coordinators have been able to conduct home visits to establish care plans when they cannot meet families at scheduled office visits. Frontline program staff reported that hospital staff not affiliated with the program have also been willing to share their knowledge and expertise, which has been an important resource when learning how to create their role and do their job. Hospital administrators have been willing to provide in-kind resources to support the program. For example, parent peer partners at ACH were given office space adjacent to the inpatient mental health unit, which they perceived as validating their role and facilitating their integration into the clinical care team.

NCH also faced several factors that have impeded program implementation, including (1) obtaining Medicaid data for self-monitoring, (2) resources, and (3) stakeholder engagement. First, although both hospitals have been able to obtain and use internal process and billing data to monitor performance, they need state Medicaid data to evaluate program effects on outcomes and make comparisons to other regions of the state. They faced many administrative hurdles in obtaining the data and identified numerous problems with data quality. As a result, NCH and ACH had to modify their data collection activities and redefine their performance metrics. For example, due to problems with Medicaid data, they have been unable to use claims to measure rates of outpatient follow-up after behavioral health-related hospital discharges. To overcome



this problem, they began surveying families of children with behavioral health-related admissions after discharge.

Second, program administrators at NCH also described uncertainty about using equipment purchased through the program for billable services after the end of the award. The lack of certainty caused them to plan a simpler telehealth model that requires less equipment. In addition, there were delays in obtaining approval to carry over funds from one award year to the next. As a result, program administrators believe that they will be unable to spend all of their carry-over funds in the time remaining in their second year of the award implementation.

Third, ACH has faced challenges engaging obstetrics providers in the prematurity initiative, largely because the smaller practices care for very few high-risk mothers and the larger provider groups have been involved in ongoing merger activities between hospitals, which has limited their willingness to participate. Also, these larger practices have begun to participate in a larger, statewide initiative to reduce preterm births, including through the use of progesterone.

## **B. Program characteristics**

Two program characteristics also influenced the implementation of the interventions: (1) the adaptability of the program components and (2) the flexibility provided to frontline staff. First, the awardees have been able to adapt various components of the program to different settings and challenges within the award. The parent peer partner program is based on an outpatient peer support program at Columbia University for adults with serious mental illness, which the awardees adapted for children in their care settings. NCH began the parent peer partner intervention in an outpatient behavioral health crisis unit and has since adapted it to referrals from inpatient medical units caring for children with behavioral health problems and outpatient behavioral health providers. Similarly, ACH initially implemented its parent peer partner program in a hospital emergency department-based crisis intervention unit and then adapted the model for its own inpatient mental health unit to more directly help achieve its goal of reducing behavioral health-related readmissions.

Second, program administrators provide component leaders and frontline staff significant freedom to refine program processes and to identify and fix problems as they arise. For example, parent peer partners described beginning to develop expertise in working with families with specific challenges, and they refined their processes to refer families to one another based on this expertise. Similarly, the nurses, social workers, and dieticians participating on the complex care coordination teams described an evolution in how they assumed primary responsibility for particular patients and problems, and which of those they referred to their colleagues on the team.

Although the program has successfully adapted some of the program components, it has faced barriers in adapting other interventions. For example, ACH faced significant challenges in the development of a PFK-like model due to the reluctance of Medicaid MCOs to enter into contracts that mirror the PFK model contract. In particular, the larger and more established MCOs in the region were reluctant to agree to full-risk contracts with ACH. ACH plans to revise its strategy, depending on the Medicaid MCOs it is able to contract with and the size of their enrollee populations. NCH program administrators also noted uncertainty about how much the structure of the HCIA enabled them to adapt new interventions to meet their goals. They have

identified new opportunities for cost reductions and care improvements for the PFK population, but they have not moved forward with these interventions due to this uncertainty.

### **C. Internal and external factors**

Characteristics of the organizations implementing a program, as well as features of the environmental contexts in which the organizations operate, can also influence implementation. Staff identified four internal factors as key facilitators to program implementation: (1) the awardees' history of working on similar programs and with similar populations, (2) leadership characteristics of hospital administrators, (3) implementation climate, and (4) tension for change. First, the hospitals' experience with related programs provided a foundation for award-funded activities. NCH helped create and has participated in a pediatric ACO (PFK) for many years—through its evolution from a provider contracting organization to a managed care strategy to an ACO. The experience enabled staff from NCH and PFK to serve as mentors for ACH staff as they build the infrastructure for their own ACO. The project director at NCH also has extensive research experience in pediatric health services, particularly related to behavioral health. Before the award, staff had already conducted several care coordination activities and had thought about the role of parent peer partners. An existing pediatric palliative care program at ACH served as an organizational foundation for its complex care coordination intervention. ACH also had experience using parents as care navigators for families with children suffering from chronic conditions.

Second, program administrators and staff shared the view that hospital leaders at NCH and ACH actively support the program and recognize the need for trial and error in the development of the program components. Program administrators stated that hospital executives at NCH were engaged in efforts to improve care and had some existing financial incentives to achieve the program goals, and those at ACH had a history of investing in efforts to improve care.

Third, respondents consistently described the current implementation climate as positive. For example, when parent peer partners at ACH received positive reviews in a patient satisfaction survey, behavioral health administrators shared the information with the broader department staff. Frontline staff also described active support from program administrators, who in turn described engaged and supportive hospital executives.

Fourth, program administrators noted that having data from the program to highlight problems in care was helpful in generating support for change within the organizations, despite generating pushback from some administrative departments. For example, program administrators at NCH used data illustrating a significantly higher rate of behavioral health readmissions among children residing in rural counties, compared with their urban peers, to convince hospital executives of the need for telehealth interventions.

Two external factors were also key facilitators: (1) connections to a broad professional network and (2) the Medicaid and general health care policy environment in Ohio. First, staff from both the behavioral health and complex care components highlighted the importance of having a broad network of contacts for helping families, including primary care providers, community and governmental agencies, managed care plans, and durable medical equipment companies. For example, local branches of the National Alliance for Mental Illness have helped

with recruitment and training in the parent peer partner program and care coordinators have started to work with primary care providers by sending them copies of patients' care plans.

Second, despite challenges related to obtaining state Medicaid data, Ohio Medicaid policies have been a critical facilitator in the development and implementation of the award. Before the award, the state passed legislation promoting pediatric ACOs and, in 2014, Ohio passed legislation authorizing Medicaid to cover telehealth services. The state Medicaid agency also added a payment adjustment for care coordination to the capitation rate for Medicaid MCOs. As a result, PFK proposed a subcapitation rate to its ACO contract to support care coordination activities. This relocation of care coordination activities from MCOs to PFK is one of the goals originally established for the PFK expansion.

Program staff identified one internal factor as a significant barrier to implementation: team characteristics in the hospitals. Program administrators and staff described clinicians' initial reluctance to work with new frontline staff, including parent partners and care coordinators. However, respondents reported that, as clinicians have worked more frequently with these new staff, they have become more accepting and in some cases have begun actively to seek new frontline staff's opinions as care team members. Complex care program administrators and staff also described the challenges of getting five or more specialties to agree to standardized approaches for care of children with feeding tubes, but felt that their persistence had resulted in significant progress.

Despite many supportive policies, several developments in Ohio's health care policy environment have posed significant external barriers to implementation of some program components. The state underwent a reprocurement process with Medicaid MCOs in 2013, which delayed when ACH could begin ACO contract negotiations with managed care plans. In addition, the state began a process of moving children who qualify for Medicaid based on a disability into managed care plans. This change created significant opportunities for care improvement and cost reduction in the PFK population, but the transition has occurred much more slowly than the state originally planned. Also, original estimates of the population of children eligible for Medicaid based on disability to be enrolled into managed care were overstated because the state elected to exclude children in waiver programs, who constitute a significant portion of the complex care intervention's target population. Thus, relatively few patients targeted by the complex care intervention were enrolled in PFK through managed care. This has limited the potential for cost savings in the PFK-enrolled population during the award period. Finally, program administrators were also concerned about disruptions to existing and proposed pediatric ACO primary care networks due to the purchase and alignment of multispecialty practice groups in adult ACO networks that might not align well with pediatric care.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which NCH has implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

The timeliness of implementation has varied across program components. The hospitals have implemented most of their behavioral health and complex care interventions according to planned time lines. NCH faced delays in deploying telehealth technology to support its behavioral health interventions related to unclear internal and external guidance about the use of equipment purchased with award funds for billable services after the award period. The implementation of the Medicaid ACO at ACH has faced significant delays. The primary barrier has been negotiating risk-sharing agreements with Medicaid MCOs. Despite this, ACH has developed the administrative infrastructure for its ACO, facilitated by the mentorship of its experienced partners at NCH and PFK, so that when the risk-sharing agreements are in place the ACO can launch as planned. The prematurity initiative at ACH has faced challenges in securing active engagement of obstetric practices and obtaining data needed to measure the results of the interventions. However, the project team has proceeded with educational and supportive interventions for promoting progesterone use while pursuing alternative data sources.

As discussed previously, NCH and ACH have implemented the program design flexibly, deviating from original plans in ways that they believe reach patients and improve care more effectively, but remaining within the parameters of the originally approved operational plans, budgets, and outcome measures. Dosage is most relevant to the parent peer partner and care coordination interventions. Parent peer partners interact with families during the several days of a child's inpatient or crisis stabilization unit admission and continue to follow up with families by telephone for up to a month after the admission. Some parent peer partners described longer-term follow-up with families, but this was not typical. Care coordinators in the complex care and behavioral interventions were required to make in-person contact with families at least once every three months, and the care coordinators reported that they achieve this through a mix of meeting families at health care visits scheduled for other reasons and home visits.

### **B. Program reach and spillover**

As of April 2014, NCH and ACH have provided services to 3,005 participants across all components of the award. Enrollment has proceeded according to the awardees' projections in all program components except for the newly developing Medicaid ACO at ACH. ACH's ACO enrollment levels will depend on the number and nature of Medicaid MCOs with which it finalizes contracts.

Program administrators believe the behavioral health parent peer partner and care coordination components are reaching their target populations. NCH and ACH parent peer partner staff report very few refusals by families approached for the intervention. In terms of spillover, NCH's behavioral health and complex care coordination efforts focus primarily on children enrolled in Medicaid managed care in the 34 counties served by PFK. However, because hospitals provide one standard of care regardless of insurance, they also provide services to any child referred for care coordination. ACH's behavioral health care coordination focuses on children enrolled in Medicaid and, currently, there are no plans to expand to other groups.

In their complex care interventions for children who have a feeding tube and a neurological disorder, NCH has enrolled about 329 children and ACH has enrolled about 175. Because of their perceived success with improving care for this population, NCH and ACH are preparing to

expand the reach of their complex care interventions to an additional population of children with high needs—those with tracheostomies. Care coordination is currently offered to all children in the target population at both hospitals regardless of insurance coverage or type.

Assessing the current reach of the prematurity-prevention initiative at ACH is difficult due to ACH's challenges with engaging obstetrics providers. ACH is attempting to improve the reach of the program by directly providing education about prevention of future premature deliveries to mothers who have delivered a premature infant and seeking alternative and interim data sources to measure the population-level impact of its progesterone interventions.

### **C. Sustainability and replicability**

NCH and ACH have undertaken steps to sustain their interventions beyond the period of the HCIA. Both institutions' have transferred responsibility for parent peer partner programs to their respective clinical behavioral health departments with plans to propose ongoing institutional funding to support them. NCH plans to incorporate the behavioral health and complex care coordinators into PFK after the award and fund them through its managed care contracts. ACH plans to include funding for behavioral health care coordination in its institutional budget proposal. ACH's complex care coordination has been integrated into an existing palliative care program, but the intervention's financial sustainability likely depends on ACH's ability to finalize risk contracts with Medicaid MCOs. The sustainability of the prematurity-prevention initiative at ACH will depend on obtaining capitated risk contracts with Medicaid MCOs that would make cost-savings from preventing premature births beneficial to the hospital. To date, NCH and ACH have begun to replicate components of their interventions in different settings and with different populations. First, ACH has developed the infrastructure to replicate the PFK Medicaid ACO model, but has faced reluctance on the part of several Medicaid MCOs to enter into risk contracts in a geographic market with multiple competitors. In contrast, another large children's health system in Ohio (Cincinnati Children's Hospital Medical Center) has a nearly exclusive geographic market share similar to NCH and has successfully negotiated risk-sharing arrangements modeled on PFK with two of the five Medicaid MCOs in the state. Second, NCH is seeking to replicate its parent peer partner program in a large academic inpatient mental health unit at another hospital. Third, NCH and ACH have begun to replicate their complex care coordination intervention with another group of children with complex needs, those with tracheostomies.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

NCH and ACH program administrators and staff perceived several positive effects of the interventions on providers. Staff described satisfaction with working in a culture that enabled them to adapt to meet families' needs and focus on improving care. Several respondents at both hospitals felt that the behavioral health parent peer partner intervention had increased the family-centeredness of care delivered by behavioral health clinicians. As one behavioral health clinical manager noted, "Parent partners came in and stirred the pot.... Providers are thinking about the parent as part of the solution." Staff described clinicians actively seeking parent peer partners to work with families and noted that they are beginning to receive referrals from outpatient clinicians who have not been directly involved in the program. Respondents at both hospitals

also felt that the complex care intervention has helped standardize the delivery of care for children with feeding tubes across multiple pediatric medical and surgical specialties. At the hospital level, the award has helped prioritize EHR modifications that better fit care for children with complex conditions and behavioral health needs and has encouraged hospital administrators to include nontraditional care models in strategic plans, such as telehealth.

## **B. Perceived effects on patients**

NCH and ACH program administrators and staff also perceived several positive effects on patients and their families. NCH program administrators indicated that their internal analyses of hospital billing data have shown that the complex care component has decreased inpatient admissions and lengths of stay, emergency department visits, and outpatient appointment no-show and cancellation rates for their target population. However, NCH administrators reported that they are unsure if these findings will appear as cost savings in the PFK population due to delays in the state's movement toward managed care for children whose enrollment in Medicaid is based on a disability. At NCH and ACH, program staff noted they think more families call the care coordinators first when they have a problem, rather than defaulting to urgent or emergency care. Staff at ACH also perceived that when complex care children have to be seen in an emergency department, more families go to their local emergency department rather than travel to a tertiary care center, because parents can communicate a care plan to emergency providers and care coordinators can discuss care plans with providers if needed. Care coordinators also noted that they believe more families are learning to manage challenges with feeding tubes and other acute conditions on their own because they have been taught what to do and how to obtain information. Based on analysis of internal data, program administrators believe the behavioral health care coordination and parent peer partner programs have contributed to decreased readmissions at ACH and increased follow-up visit rates at NCH and ACH. Program staff and administrators at NCH and ACH reported anecdotal stories of parents complimenting the Parent Partner program to other clinicians and staff, and ACH found multiple positive comments about the program among responses to standard hospital satisfaction with care surveys.

## **VII. Conclusions**

Two years into its three-year HCIA, NCH and its partner organizations, ACH and PFK, have successfully implemented the behavioral health and complex care components of their program. But ACH has faced slow implementation of its prematurity-prevention initiative and ongoing delays in implementation of its Medicaid ACO due to slow contract negotiations with Medicaid MCOs. The implementation process has capitalized on an existing data-driven culture at NCH and helped to establish one at ACH. Ongoing communication between the two organizations has supported their independent implementation of the interventions, and NCH and PFK's mentorship has been critical to ACH's efforts to develop its own ACO. Adaptations have included locating the parent peer partners in units that provide the most efficient access to high-need behavioral health patients and their families and generating contingency plans for the geographic reach of the ACH ACO dependent on outcomes of negotiations with Medicaid MCOs. In addition to maintaining and refining the current behavioral health and complex care initiatives, NCH and ACH plan to implement telehealth interventions to augment the impact of these components. NCH and ACH have made significant progress in integrating their interventions into existing administrative structures and are assessing the levels of staffing that NCH, PFK, and ACH can sustain with or without ACO contracts. State support for pediatric

ACOs makes it likely that ACH will eventually be able to complete contracts with Medicaid MCOs, and PFK will continue to serve as a model for pediatric ACOs within and beyond the state.

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**RUTGERS CENTER FOR STATE HEALTH POLICY**

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**RUTGERS CENTER FOR STATE HEALTH POLICY**

**I. Introduction**

This summary provides an update of the implementation experience and effectiveness of Rutgers Center for State Health Policy’s (CSHP’s) Health Care Innovation Award (HCIA) primary care redesign program as of June 2014, mid-way through its three-year program award. It is based on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted in June 2014. The site visit included interviews with program leaders and staff from two of the four CSHP implementation sites: Neighborhood Health Centers of the Lehigh Valley (NHCLV) in Allentown, Pennsylvania, and Truman Medical Centers (TMC) in Kansas City, Missouri. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

**II. Overview**

In this section, we provide a summary of the CSHP primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) CSHP received a \$14.3 million HCIA to implement a community-based care management program at four provider organizations. Based on the Camden Coalition of Healthcare Providers’ care coordination model, the CSHP program uses multidisciplinary, community-based care teams to connect patients with high service utilization to appropriate clinical and social services to help them manage their conditions and overcome socioeconomic obstacles to care. The Camden Coalition of Healthcare Providers also received separate funding under the HCIA initiative and provides technical assistance to CSHP under the latter’s cooperative agreement with Center for Medicare & Medicaid Innovation (CMMI). Otherwise, the two programs are administered independently. The CSHP initiative aims to decrease unnecessary hospital admissions and patients’ use of emergency department (ED) visits, improve health outcomes, and reduce the annual cost of care by 14.8 percent.

**Table 1. Summary of CSHP primary care redesign program**

Awardee’s name	Rutgers Center for State Health Policy
Award amount	\$14,347,808
Implementation date	January 1, 2013
Program description	Implementation of a community-based care management program at four provider organizations, including: <ul style="list-style-type: none"> <li>• Identifying high-utilizer patients with chronic conditions</li> <li>• Providing care management services to patients through multidisciplinary, community-based care teams</li> <li>• Graduating patients from program and transitioning them into medical homes</li> </ul>
Innovation components	Care coordination, care management, transitional care, patient-centered care
Intervention focus	Individual
Workforce development	Hired nurses, social workers, and community health workers to form mobile care management teams
Target population	Patients with chronic conditions and high utilization of inpatient services
Program setting	Community-based
Market area	Local (4 states)
Market location	Allentown, Pennsylvania; Aurora, Colorado; Kansas City, Missouri; San Diego, California
Core outcomes	14.8 percent reduction in total annual cost of care through decreased hospital admissions and emergency department (ED) visits

Source: Review of CSHP program reports.

Note: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

The CSHP program includes three core program components: (1) identification and enrollment of patients with chronic conditions and high utilization of inpatient services; (2) care management provided by multidisciplinary, community-based care teams; and (3) participants’ graduation from care management and transition into medical homes. CSHP coordinates technical assistance provided to the four implementation sites by three partner organizations: (1) the Camden Coalition of Healthcare Providers, a nonprofit organization that developed and operates the high-utilizer care management program, which is being adapted in the four clinical sites in the intervention; (2) the Center for Health Care Strategies (CHCS), a nonprofit health policy resource center dedicated to improving health care access and quality; and (3) the People Improving Communities through Organizing (PICO) National Network, a consortium of faith-based organizations working to enable community residents to advocate for improved health care access. A steering committee including representatives from each partner organization and project directors from each implementing site oversees implementation of the program across sites.

**III. Operational update**

In this section, we provide an update on the operational aspects of the CSHP primary care redesign program as of June 2014 (see Table 2). Sites vary in their methods of patient identification and enrollment. One site identifies patients through an internal electronic health record (EHR) system, approaches eligible patients during their hospital stays, and conducts enrollment in the hospital. Another site relies on patient referrals from providers and discharge planners and approaches patients after discharge, usually in their homes, to verify eligibility and conduct enrollment. To increase enrollment, one site, which initially focused exclusively on Medicaid and Medicare patients, modified its program eligibility criteria by expanding payer groups to include self-pay patients and widening its local geographic boundaries from 10 to 20 zip codes. Although the other site has not changed its patient eligibility criteria, program staff accept most referrals, even if they do not meet all established criteria. In addition to assessing eligibility criteria, both sites evaluate patients’ readiness for change before accepting them into the program.

**Table 2. Status of operational aspects of CSHP primary care redesign program, April 2014**

Operational aspects	Program component	Current status
Innovation components	1. Patient identification and enrollment	Using data-driven approaches to identify patients and conducting in-hospital enrollment; accepting referrals from providers and discharge planners and enrolling patients following discharge
	2. Care management	Using standardized care plans to guide delivery of care management services to participants
	3. Patient graduation and transition to medical home	Developed criteria to assess patients’ readiness for graduation, engaging primary care providers, and reconnecting participants to their communities
Self-monitoring and evaluation		Beginning to use data entered by care teams to guide program improvements
Target population	Eligibility criteria	Patients with chronic conditions who have high utilization of inpatient services; one site expanded eligibility to include self-pay patients
	Reach	Enrolled cumulative total of 653 participants through March 2014 (since inception)
Workforce development		<ul style="list-style-type: none"> <li>• Hired social worker to fill vacancy</li> <li>• Struggling to fill two nursing positions</li> <li>• Training continues on an ad hoc basis</li> </ul>

Sources: Interviews with NHCLV and TMC staff and review of CSHP program reports, June 2014.

Although the model pioneered by the Camden Coalition of Healthcare Providers limits the intervention to 90 days in most cases, implementation sites are developing decision tools to determine when a patient is ready to graduate rather than graduating the patient after a set time period. For example, one site developed a structured patient graduation process for the two weeks leading up to commencement, during which care team staff coach participants on how to respond to medical issues and other challenges they might encounter after leaving the program. Program staff also reported that providing opportunities for participants to move beyond being patients and finding ways to contribute to their communities can have a positive impact on their health outcomes. With this in mind, one site began enrolling participants in a local time bank, a volunteer service exchange program whereby participants provide services to and receive services from other time bank members. High-utilizer patients provide a variety of services, including baking and organizing garage sales; their most common service requests include companionship and transportation.

Both sites have experienced changes in program staff. In May 2014, one site filled a social worker position left vacant by staff turnover. Two staff positions—a licensed practical nurse and a registered nurse—remain open. A program manager left the program in April 2014 and other staff members have assumed the responsibilities of that position. Another site has had staff turnover but maintains a program workforce of three care teams and a psychologist who dedicates two days a week to the intervention. The program also has substantial managerial support. Both sites took advantage of temporary periods of understaffing to modify their workflows and to increase their operational efficiency. For example, one site encouraged care teams to conduct home visits individually (rather than in pairs) so the teams could reach more patients with fewer staff. Sites also continue to hold team meetings every week to discuss program strategy and review the cases of patients with complex conditions.

By April 2014, the four implementing sites had enrolled a total of 653 patients, approximately 10 percent below their target for the first seven quarters of the award (July 2012 through March 2014).

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

##### **A. Implementation process**

Three implementation process factors facilitated the implementation of the program: (1) monitoring progress to guide ongoing improvement, (2) team collaboration, and (3) engaging external stakeholders. First, both sites conduct ongoing self-monitoring activities to guide program improvement. For example, administrators at one site reviewed program processes and found an opportunity for improving the patients' graduation process that resulted in the development of a two-week process to test patients' readiness for discharge. Care teams continue to monitor the new process and make adjustments to better meet patients' needs. Similarly, staff at another site regularly evaluate enrollment data to identify issues to address, such as drops in enrollment and patients who do not have a primary care provider (PCP).

Second, both sites emphasized that team cohesion and cooperation contribute to successful program implementation. Program administrators hold staff meetings and huddles to help care team members stay up to date on the progress of program participants and enable staff to provide feedback on program operations. These meetings also offer opportunities for care teams to voice their frustrations in dealing with difficult patients and to share perspectives on how to address the problems of patients with complex conditions. Program staff reported that team building helps them present a united front to patients and providers and to quickly resolve program implementation challenges. For example, when care team members encounter patients who are reluctant to seek help for behavioral problems or mental illnesses, program staff develop ways for care team members to educate and encourage them to get the treatment they need. Staff believe their efforts reduce patients' reluctance to seek treatment and increase the number of patients who receive the psychological care they need.

Third, program administrators and staff at both sites reported that their efforts to engage external stakeholders, including PCPs and community-based organizations, helped to support program implementation and sustain the progress they have made. Program staff are building relationships with providers and other clinic staff to help improve communication between patients and their PCPs, to increase patients' access to care, and to strengthen collaboration to meet the complex needs of high-utilizer patients. In addition, program staff attend office visits with patients and provide reports of patients' progress to PCPs to foster their engagement in the program. Sites also work with community stakeholders to support patients after they graduate from the program. For example, one site developed a relationship with the Department of Welfare to connect patients to housing, food stamp, and other community services. Program staff also connect patients with faith-based organizations to help establish long-term connections to community resources. At another site, program staff work with a hospital inpatient case management team to identify patients through a review of hospital admission data; staff also meet with health home representatives to facilitate patients' transitions after discharge from the program and help connect patients with local agencies, food pantries, and homeless shelters.

One implementation-related process factor—engaging hospital providers—presented a challenge for one site. Program staff lack access to hospital inpatient data, which would enable them to use a data-driven approach to identify additional patients who might benefit from participating in the program beyond those identified through providers' referrals. However, administrators report that their relationships with the hospitals have improved and they continue to address this challenge by working to negotiate data-sharing agreements with three local hospitals that will enable program staff to conduct data-driven patient identification and bedside enrollment.

## **B. Program characteristics**

In addition to the implementation process factors, three characteristics of the intervention facilitated program implementation: (1) staff perceptions of the relative advantage of the program compared with the standard delivery of care, (2) adaptation of the program to meet organizational contexts, and (3) frontline user flexibility in implementing the program. First, program administrators, providers, and staff view the Camden model as offering an advantage for improving care, improving patients' health, and reducing costs for high utilizer patients, compared with the standard delivery of care. Through the program, care management teams can

build relationships with patients, help them navigate the health care system, and improve self-care. Home visits included as part of the program go beyond a focus on patients' medical needs to also assess patients' perceptions of their conditions, goals, and psychosocial needs. Frequent follow-up enables care team members to gain patients' trust and motivate them to make changes to improve their health, teach patients how to manage their chronic conditions, and identify problems early for prompt intervention.

Second, both sites reported using the Camden Coalition model as a foundation. However, their effort to adapt the model to meet their local needs was an important factor in program success. Sites used staff job descriptions, patient enrollment forms, and care plan templates from the Camden Coalition model, but they staffed care teams and structured workflows to fit their organizational structure and culture. Both sites also extended the length of the intervention beyond the Camden Coalition model's duration of 60–90 days. Instead, length of enrollment varies to accommodate patients' needs and can last for up to 13 months to prepare patients for successful transitions to medical homes and effective self-management after graduation. Program administrators at one site worked with frontline staff to design a new standardized care plan structure to meet patients' needs and satisfy program reporting requirements, refining the format to improve readability and simplify data entry. Sites also run pilots of program changes with small groups of patients to test their effectiveness and make any necessary refinements before rolling them out to other participants. For example, one site connected several patients with a local time bank to support successful transitions to self-care after graduation from the program; that site plans to expand the program to offer this service to other participants and community members after program staff learn how to use the time bank system effectively to address the unique needs of high utilizers.

Third, the CSHP program provided frontline staff flexibility to tailor the delivery of intervention services to the needs of their patients. During daily staff huddles and weekly leadership meetings, program staff identify operational process issues and obstacles to patients' progress in the program. Team members discuss potential solutions to remove barriers and help patients meet their goals and then share results of process modifications. For example, care team members typically see each patient at least once a month, but they have flexibility to have more frequent visits with patients who have complex or acute needs for care management assistance.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located, can also influence implementation. Two internal factors facilitated implementation of the CSHP program: (1) prior experience in care management for high-utilizer patients with complex conditions and (2) support from CSHP program leadership. First, staff at both sites reported that the CSHP program represents a logical expansion of their existing work providing case management services for high-utilizer patients with complex conditions. This enabled sites to build on processes established and knowledge gained through previous experience. For example, one site extended its care coordination and chronic disease management work to include empowering patients to improve self-care and connecting them with community organizations to meet psychosocial needs. The site's program administrators also knew through prior experience that relying on providers' referrals alone would not achieve their targeted case volume; therefore, they supplemented referrals with a data-

driven approach to identify patients eligible for the program. Second, CSHP provided valuable leadership to program staff, sharing their expertise and experience in implementing the Camden model. Administrators at both implementation sites reported receiving strong support from CSHP, including assistance with adapting the Camden model to meet local needs, opportunities to collaborate with other organizations implementing the model, and technical assistance with data collection and reporting.

Two external factors that presented challenges to program implementation include (1) the complexity and variety of patients' needs and (2) environmental factors. First, many high-utilizer patients face a variety of barriers to appropriate care, including lack of stable income, health insurance, legal identification, English language proficiency, telephone access, stable housing, and transportation. Many also have mental illness or issues with substance abuse or traumatic experiences. As a result, patients experience social isolation; they are often estranged from family members, social circles, and communities of faith. Care teams help patients address these issues to improve their ability to develop trusting relationships with providers and manage their conditions, but the complexity of patients' needs taxes care team members professionally and emotionally, adversely affecting staff recruitment and retention. Despite minimal staff turnover early in the program, administrators refined their policies and adjusted workflows to prevent staff burnout. For example, administrators worked to clearly define the role of each frontline staff member to evenly distribute tasks and avoid unnecessary duplication. Administrators also encourage frontline staff to establish personal boundaries in their relationships with patients, conform to established work schedules, and take time to celebrate patients' graduations and grieve patients' deaths.

Second, environmental factors, including lack of social support resources and providers' biases, challenge program implementation and negatively affect patients' outcomes. For example, care teams find it difficult to stabilize patients' medical and social conditions because of a general lack of affordable housing, insufficient transportation services, and poor access to primary and specialty care. Care teams have also observed negative attitudes among providers, such as racial bias and patient-blaming, which impair the development of effective provider-patient relationships to support appropriate use of primary care services. As one respondent noted, "Unless their environment changes, they can do all the change they want but when the program is over, they go back to the same environment that drives the super utilizing."

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which CSHP implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

CSHP sites successfully implemented all program components on schedule, including identification of high-utilizer patients, provision of care management services, and participants' graduation and transition to medical homes. As previously discussed, CSHP program sites have shown flexibility in implementing the program design, deviating from the original plans in ways that make the program more efficient and effective. Administrators adjusted the patient



recruitment strategies to capture more eligible high-utilizer patients and allowed the duration of care management services to vary to accommodate the needs of individual patients. Because the dosage of care management services depends on the needs of each patient, with high-risk patients receiving more intensive services than low-risk patients, dosage was not a relevant outcome measure for this program.

## **B. Program reach and spillover**

Program administrators and staff at both sites believe they are reaching only a portion of the patients who can benefit from program services. Enrollment is slightly below target and care management team caseloads are under capacity. Sites have taken several steps to identify and enroll more patients. First, program staff recognize that data-driven approaches based on standard criteria can help identify eligible patients and achieve greater reach than reliance on providers' referrals. Currently, sites differ in their progress in implementing data-driven patient identification strategies. Care management staff at one site review a daily census of patients admitted to the hospital who meet program eligibility requirements and attempt to enroll those patients at bedside. Another site relies on its referral network of social workers, physicians, and discharge planners to identify eligible patients. Administrators acknowledge that this approach has resulted in providers referring only the most high-need patients (and not necessarily patients who may benefit most from the intervention) and fails to capture all eligible patients. They plan to develop a data-driven process using patients' diagnoses and utilization information to identify eligible patients, and are working with three local health networks to finalize agreements to obtain patients' data and to enable bedside enrollment of patients by care management team members. Second, sites report repeated attempts to engage patients who initially expressed reluctance to participate in the program. Efforts include creating an informational brochure to increase patients' awareness of the program, providing a detailed explanation of program benefits to patients during initial hospital stays and home visits, and emphasizing the program focus on helping patients improve their self-care and quality of life. Several program staff cited successes in enrolling patients after gaining their trust. Third, one site expanded its target population of Medicaid and Medicare patients to include self-pay patients, and it broadened the local geographic boundaries from which it drew patients. Program administrators indicated that three of the four implementation sites did not exclude any patients based on payer type. Staff did not report significant spillover of program effects to providers and patients not involved in the CSHP program.

## **C. Sustainability and replicability**

To sustain the program, implementation sites must identify options for funding after the HCIA contract ends. CSHP's goal is to facilitate communication and strategic planning with state Medicaid agencies to build support for the program at the state level and find ways for Medicaid to begin paying for program services. CSHP is also working with sites to consider ways to approach private funders, such as philanthropic organizations. Implementation sites vary in their experience in interacting with policymakers, legislative staff, and philanthropic institutions, and CSHP staff are preparing a sustainability toolkit with financing, communication, and data briefs to assist site administrators in their efforts to engage state Medicaid staff, foundations, and other potential funding sources. Administrators from one site have already met with state medical assistance programs and local and state funders to identify alternative funding sources. However, many patients in the target population remain uninsured, making it difficult

for program administrators to convince insurers of the benefit to them of paying for program services. Another site is pursuing private funding options through local charity organizations, including a foundation that funded an earlier version of the program. In addition, CHCS is working with two implementation sites to identify sustainable financial strategies to support the program. One administrator described CHCS's contribution by saying, "They offer a framework that helps us understand things. They said philanthropists want something novel; the state wants something guaranteed; and payers want something that saves them money.... Having it clarified helped. CHCS has been one of the most important gifts of this grant."

As previously described, the CSHP program represents a replication and adaptation of the Camden Coalition's model of community care management in four sites with varying levels of capacity and infrastructure. The implementation sites are adapting the model to meet the needs of their target population and looking for ways to integrate behavioral and physical health.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Although the CSHP program uses community-based care teams to serve the clinical and social needs of patients with high service utilization, an important goal of the program is to promote better relationships between patients and their doctors to effectively transition patients to medical homes after they complete the program. In pursuit of this goal, administrators and clinic staff reported that the program was having a positive effect on providers' behavior. First, as providers' knowledge of the CSHP program has increased through interactions with program staff, PCPs are beginning to understand how program services can benefit patients with complex health care needs. Providers view the care management team as a partner that shares their goal to help patients manage their conditions and avoid unnecessary hospitalizations and ED visits. Second, frontline staff described situations in which patients have learned to ask questions and communicate their needs during their office visits. Patients becoming more proactive in their care have given providers a greater understanding of the challenges their patients face and has led to more shared decision making and patient-centered care delivery.

The CSHP program has also presented challenges for providers. Care team members have received occasional push-back from physicians who refuse to change the way they deliver care or to invest in improving relationships with high-utilizer patients. Under the community-based program model, physicians are not integrated with the program team and are not accountable to CSHP for changing their behavior. Program staff reported that some doctors dismiss input from care teams and noted that "some of the push-back is because we are challenging the PCPs to be better or to do something that needs to be done. Or, [they will say] 'You're a nurse, and I'm a doctor, why are you questioning me?'" In addition, providers do not receive funding for the additional work required to collaborate with care teams. When a care team member accompanies a patient to an office visit, providers might have to extend the length of the visit because care managers coach their patients to ask questions and to clarify providers' instructions. Requests for patients' records and updates, review of care management reports, and participation in meetings to plan patients' discharges create additional burdens on providers, for which they receive no compensation.

## **B. Perceived effects on patients**

Program staff at the implementation sites we visited reported that the intervention has had a positive effect on patients. Benefits to patients include education to effectively manage their chronic conditions, guidance to navigate the health system effectively, coaching to build better relationships and improve communication with providers, and support for the nonmedical needs that affect patients' health. Team members shared examples of how they have helped patients take advantage of assistance provided through Medicaid, Medicare, and local clinics providing routine preventive care services. Through improved preventive care, patients have avoided unnecessary hospitalizations. Care coordination team members expressed commitment to helping program participants make their own decisions and to set goals to motivate and prepare them to manage their medical and social conditions after they graduate from the program. As one respondent noted, the relationships patients form with care team members are a key part of behavior change: "These patients want to do better, but they don't know how. They have been stuck for so long and neglected in this area, where no one has come into their homes to see what is causing the behaviors that we're seeing and causing them to be noncompliant. They are so grateful that somebody is finally paying attention to them." Program staff highlighted the value that patients place on the relationships they develop with care teams. One community health worker said, "They get attached to us and don't want to let go. They see us as friends." However, some patients fail to learn how to manage their health care needs, and several care management team members reported efforts to continue working with patients after they graduate from the program.

## **VII. Conclusions**

The CSHP project represents the adaptation and implementation of the Camden Coalition's community-based care management model by four diverse clinical sites in different regions and settings of the country. In contrast to a provider-based model, the Camden model features multidisciplinary, community-based care teams that connect high-utilizer patients with chronic diseases to clinical and social services to help manage their conditions and address socioeconomic barriers to care. From the beginning, program administrators have conducted ongoing monitoring, solicited feedback from frontline staff, and received technical assistance from CSHP and program partners to guide improvements in implementation processes. Adaptations of the model have varied across sites and include expanding the eligibility criteria to increase program reach and varying the duration of the intervention and the intensity of care management services to meet individual patients' needs. Mid-way through its three-year program agreement, CSHP implementation sites have successfully implemented all program components. With cumulative enrollment about 10 percent below target, sites are pursuing strategies to identify more eligible patients through data-driven approaches, enrolling patients before discharge, and educating patients about program benefits to encourage participation. Program staff have identified several other opportunities for further improvement, including continuing efforts to engage providers to meet the needs of high-utilizer patients with complex conditions and building relationships with community organizations to provide nonmedical support to patients during the program and after graduation. CSHP program partners have taken a long-term view in implementing the program and have been working with implementation sites to explore ways to financially sustain the program through public and private funding sources. Currently, none have secured funding.

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**SANFORD HEALTH**

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## SANFORD HEALTH

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of Sanford Health’s Health Care Innovation Award (HCIA) primary care redesign program, One Care, as of June 2014, two years after program award. It is based on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted June 2–5, 2014. The site visit included interviews with One Care program leaders and staff, as well as providers at primary care practices in Fargo, North Dakota, and in Moorhead and Thief River Falls, Minnesota. The purpose of this report is to identify the barriers and facilitators encountered during program implementation experience and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the Sanford Health primary care redesign program, One Care (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) Sanford Health received a 3-year, \$12.1 million HCIA to create patient-centered medical homes (PCMHs) at 41 clinics in Minnesota, North Dakota, and South Dakota. This initiative aims to integrate behavioral health care services into primary care, with an emphasis on patient screening, chronic care guidelines, and health information technology (IT) tools. By the end of the award, Sanford Health aims to (1) have more than 325 health care professionals practicing fully integrated primary and behavioral health care; (2) achieve clinically significant and meaningful improvements in clinical outcomes, quality of life, and functional status; and (3) reduce overall costs of care.

**Table 1. Summary of Sanford Health primary care redesign program**

Awardee’s name	Sanford Health
Award amount	\$12,142,606
Implementation date	April 1, 2013
Program goals	<ol style="list-style-type: none"> <li>1. Implementing a PCMH model at 41 Sanford Health primary care practices to screen and treat chronic and behavioral health conditions</li> <li>2. Establishing and training care teams at each clinic, including primary care providers (PCPs), registered nurse (RN) health coaches, behavioral health triage therapists (BHTTs), and panel managers</li> <li>3. Using electronic health records (EHRs) to facilitate the medical home through activities such as patient screenings and chronic care protocols for providers</li> </ol>
Innovation components	Care coordination, care management, patient-centered care, integrated care teams, health IT
Intervention focus	Practice
Workforce development	Added RN health coaches, BHTTs, and panel managers to participating clinics; implemented standard, universal trainings on topics such as motivational interviewing, trauma-informed care and cultural mindfulness; leveraged team huddles and staff meetings to increase team collaboration
Target population	Patients with chronic conditions and/or behavioral health issues
Program setting	Provider-based (primary care practices)
Market area	Regional (North Dakota, South Dakota, and Minnesota)
Market location	Urban and rural
Core outcomes	<ul style="list-style-type: none"> <li>• Have more than 325 health care professionals practicing fully integrated primary and behavioral health care</li> <li>• Achieve significant and meaningful improvements in clinical outcomes, quality of life, and functional status for targeted patients</li> <li>• Reduce overall costs of care for targeted patients</li> </ul>

Source: Review of Sanford Health program reports.

Notes: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

Key components of the Sanford Health One Care program include (1) a team-based approach to care that integrates behavioral health into primary care settings; (2) trainings to achieve providers’ buy-in, consistency in protocols, and skills enhancement; (3) an electronic health record (EHR) system that includes patient screening tools, chronic care guidelines, and patient telemonitoring functionality. All Sanford Health patients at participating clinics are expected to benefit from this new approach to care, particularly through universal screening for behavioral health disorders. However, patients with asthma, attention deficit hyperactivity disorder, anxiety, depression, diabetes, heart disease, hypertension, obesity, and substance abuse are targeted for intervention services.

**III. Operational update**

In this section, we provide an update on the operational aspects of Sanford Health primary care redesign program, One Care, as of April 2014 (see Table 2). When Sanford Health began planning the introduction of the One Care model in its obstetrics/gynecological (OB/GYN) clinics, it found limited data on the targeted chronic diseases because most patients sought care for these conditions from their primary care providers (PCPs). As a result, Sanford Health withdrew its eight OB/GYN clinics from the program in April, 2014, leaving a total of 33 participating clinics, covering family medicine, internal medicine, and pediatrics. The four clinics in Bemidji, Minnesota began implementing the integrated PCMH model in early 2014. During 2014, Sanford Health also finalized the development of a standardized screening tool for behavioral health and began to implement the screening in all participating clinics. The screening is called the Behavioral Health Screener 6-Item Questionnaire (BH-6), developed from selected questions from four psychometrically validated instruments.<sup>11</sup> A positive response to a question prompts providers to administer the full assessment. One Care leadership incorporated the BH-6 form into its training program because many clinicians lacked familiarity with the underlying instruments; it is also incorporating the instrument into its EHR system. Most participating clinics now perform behavioral health screenings routinely on selected patients. Sanford Health also began using remote blood pressure cuffs and scales that transmit patients’ vital signs to registered nurse (RN) health coaches through the EHR system.

**Table 2. Status of Sanford Health primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. PCMH	Continued to implement team-based, patient-centered care, integrating behavioral health into 33 primary care practices
	2. Health IT	Incorporated chronic disease protocols, behavioral health screenings, and telemonitoring functionality into the EHR system
Workforce development		Continued to recruit, hire, and train members of primary care teams, including physicians, RN health coaches, BHTTs, and panel managers Trained 207 staff members and conducted 3,931 hours of training (since inception)
Patient enrollment		Benefited 613,610 patients at participating primary care clinics (since inception)

Source: Interviews with program staff and review of program reports, April 2014.

<sup>11</sup> Two items are from the Personal Health Questionnaire, two from the General Anxiety Disorder questionnaire, one from the Alcohol Use Disorders Identification Test, and one from the Drug Abuse Screening Test.



Sanford Health continued to recruit and hire for various positions across participating clinics, including RNs to serve as health coaches, social workers to serve as behavioral health triage therapists (BH TTs), and medical assistants to serve as panel managers.<sup>12</sup> It also continued to invest heavily in training clinicians at participating clinics on how and why they should provide team-based, integrated care. As of April 2014, 318 clinicians and support staff had been directly involved in the implementation of the One Care program, more than two-thirds of whom had participated in trainings. A total of 3,931 hours of training have been completed. Because all patients can benefit from the One Care approach, there is no formal patient enrollment process. The One Care program has served, either directly or indirectly, a total of 613,610 distinct patients since its inception.

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

##### **A. Implementation process**

Two implementation process factors facilitated the implementation of the Sanford Health One Care program: (1) engaging Sanford Health PCPs and other team members and (2) dedicating resources to support the program. First, One Care attempted to engage frontline staff and promote acceptance of the new model of care through staff trainings, regularly scheduled meetings, and informal discussions. We next describe each of these staff engagement activities.

Workforce development is centralized in the Sanford Health Center for Learning, the enterprise hub for developing and conducting staff trainings throughout the system. One Care's Clinical Skills Development Team developed several learning modules, now incorporated into the Center for Learning, which focus on various topics, including trauma-informed care, cultural mindfulness, and motivational interviewing. Although most modules are available online, others are instructor-led with a group discussion component. Sanford Health employs a train-the-trainer approach so that providers and staff are familiar with the people leading the trainings. Most training is targeted to the RN health coaches and BH TTs. The most intensive training for RN health coaches and BH TTs is the Chronic Care Professional certification course, which consists of four six-hour modules that focus on chronic disease management, population health improvement, lifestyle management, and motivational interviewing. Physicians also participate in several lower-intensity trainings, such as motivational interviewing, chronic disease management, cultural mindfulness, and behavioral health integration. Doctors are compensated with HCIA funds for time spent on trainings. Although coordinating trainings among numerous staff during a busy workday has been challenging, the health coaches and triage therapists we interviewed found the trainings critical to program success. Trainings help team members speak the same language, understand one another's roles, and enhance their skills. Staff reported that the training in motivational interviewing techniques was particularly helpful for increasing rapport with patients and achieving better outcomes for patients with chronic diseases.

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<sup>12</sup> Some of the panel managers in the Fargo-based clinics are not medical assistants; several have experience as nursing assistants or in clerical roles such as medical transcribers.

In addition, Sanford Health One Care program administrators have engaged staff using formal and informal meetings with physicians to implement and reinforce the new One Care program. Sanford Health's monthly departmental meetings provide physicians with hour-long trainings and an opportunity to discuss issues related to team-based care and behavioral health integration. Integrators organized core teams for clinics in their regions. Core team meetings offer an opportunity for care team members and clinic leaders to share experiences, offer feedback, and refine processes. One respondent described core team meetings as an opportunity for change management. Other stakeholders—such as patients or their caregivers—are also invited to attend core team meetings. In addition, program administrators and local leaders periodically meet with physicians and clinic staff informally to discuss new care processes. These low-level interactions help earn physicians' buy-in and encourage them to delegate work to other team members.

The second process-related factor that helped to facilitate program implementation was dedicated resources, including HCIA and Sanford Health funds, staff time, and clinic space. The HCIA enabled Sanford Health to purchase and develop training curricula, compensate staff for time spent in trainings, fully or partially fund team members' salaries, and configure the new EHR system to include screening instruments. Compensating staff for time spent on implementation activities was critical in a fee-for-service (FFS) environment, in which many program services are nonbillable. Conversely, staff at clinics lacking allocated health coaches, BHTTs and panel managers have less time to dedicate to the initiative and many are working with program leaders to add those positions. Program administrators initially set staff allocation targets based on preferred ratios of physicians to non-physician care team members (1 to 5 for RN health coaches, 1 to 10 for BHTTs, and 1 to 20 for panel managers). Administrators determined how to distribute staff within each region (such as prioritizing clinics with a higher percentage of patients with complex chronic conditions). Another resource that staff anticipate will facilitate program implementation is the spatial layout of a clinic. Using its own funds, Sanford Health recently remodeled a clinic in Moorhead, Minnesota, that is now spatially configured to facilitate team-based and patient-centered care. The patient examination rooms are located in the center of the floor, surrounded by open workstations and physicians' offices with glass walls. Members of the care team share the same work space, which facilitates informal communication about patients' care. The open workstations also include mounted screens that indicate the examination rooms in which each provider is located, which promotes information sharing and care coordination. Conversely, staff at clinics not spatially configured for team-based care described layout as a barrier to huddling and communication.

## **B. Program characteristics**

Program characteristics include the features of the intervention implemented within an organization, including both core program components and adaptable elements. Three program characteristics have facilitated implementation of the One Care program: (1) team collaboration, (2) adaptations to the program in response to lessons learned, and (3) significant user control to fit the program to the local setting.

First, clinic staff reported that consistent communication among care teams via daily huddles and informal conversations facilitate team-based care and promote PCPs' buy-in. Team huddles offer an opportunity for care teams to discuss their treatment plans for a patient with an upcoming visit. For example, a panel manager might notify the health coach that a patient with

uncontrolled diabetes is scheduled that day, information that the health coach can bring to the team huddle to help plan for the visit (such as ensuring the patient receives a scheduled A1c test and nutritional counseling). Although clinicians using team huddles find them helpful, the challenge is scheduling a time for teams to meet each day, particularly in pediatric clinics, which tend to schedule more visits per day than adult clinics. Some clinics have started conducting informal huddles, making an effort to meet to discuss patients with complex care needs. In other cases, teams do not huddle; instead, health coaches and behavioral health staff will attempt to touch base with PCPs throughout the day, just to say hello and to let them know they are available. Consistent collaboration and communication facilitate health coaches acting as extensions of PCPs, conducting patient follow-up and monitoring, and helping patients self-manage their chronic conditions. Communicating with behavioral health staff has also helped health coaches and physicians know when to refer patients to a BH/T, psychologist, or psychiatrist. In addition, including panel managers in team-based care has helped to ensure that clinics use patient registries to proactively reach out to patients and effectively plan for scheduled appointments. Some clinics incorporate pharmacists, diabetes educators, dieticians, and respiratory therapists in their teams, and report that communication among a broader group of clinicians improves patients' care. Staff believe that the more clinic team members communicate, the more they accept one another's roles, efficiently allocate work, and effectively respond to patient needs.

Second, as Sanford Health has implemented its intervention, it has made several adaptations to facilitate the process. The first adaptation from program leaders was the introduction of panel managers to care teams. Panel managers pull registry data and produce reports, managing clerical tasks so that health coaches can work at the top of their licensure. Staff from clinics with panel managers report that the position has helped to improve their clinical quality measures. Sanford Health's One Care administrators are working to ensure that all participating clinics have access to a panel manager before the end of the award. Another adaptation occurred when program leaders observed local champions' ability to improve the implementation process. In response, they moved from a planned top-down method to a clinic-driven approach, introducing regional integrators and clinic core teams as local administrators. Integrators are regional leaders who provide local support and serve as liaisons to One Care program directors. Each of the four regions has an integrator who helped select people from each clinic to serve on the clinics' core teams. Members on the core team are agents of transformation within the clinic and can include physicians, nurses, administrators, behavioral health staff, and other stakeholders such as patients' caregivers. Integrators and core teams provide the local support necessary for clinics to tailor the intervention to their specific circumstances. They also provide a critical link between centralized program administrators and clinic staff.

Third, having local control to customize the One Care approach to fit particular clinics has further facilitated implementation, particularly buy-in among physicians and other staff. Variation in the composition of care teams is one example of local control. For instance, Thief River Falls has a large number of psychologists, who in many cases will be the first behavioral health contact for patients. In other regions, patients are more likely to be treated by a BH/T and referred to a psychologist for follow-up care, if needed. Similarly, because children's health care needs differ from those of adults, pediatric clinics have more autonomy developing and introducing patient screenings and care protocols appropriate for pediatric patients. Workflows are also tailored to each clinic's layout, schedule, and personnel. Even components that are

common across One Care clinics can be implemented differently, depending on sites' preferences. For instance, all clinics are required to screen adult patients using the BH-6 instrument. However, clinics vary in how they administer the assessments. Some administer the instrument to patients when they are in the waiting rooms; others have licensed practical nurses administer it when patients first enter examination rooms. One Care leadership describes this user control as “pulling in” rather than “pushing in” the innovation.

### **C. Internal and external factors**

Characteristics of the organization implementing a program, as well as features of the environmental context in which the organization is located can also influence implementation. Two internal factors have affected the implementation of the Sanford Health program: (1) a history of implementing similar initiatives and (2) clinic capacity. First, several Sanford Health One Care clinics had experience integrating behavioral health in a medical home setting before the HCIA, facilitating implementation. For example, the internal medicine and pediatric clinics in Fargo, Bemidji, and Thief River Falls had already been certified as health homes by the Minnesota Department of Health. Other clinics have experience participating in aligned programs, such as the Blue Cross Blue Shield medical homes pilot in Fargo. As medical homes, these clinics had previously employed RN health coaches and/or BHTTs. Staff consistently viewed their earlier experience with similar initiatives as a facilitator to enhancing the patient-centered, team-based approach to care. In contrast, many respondents said that the participating family medicine clinics were less mature than internal medicine clinics in their implementation process, and attributed their delayed progress in part to a lack of prior medical home experience.

The second internal factor that affected the implementation of the Sanford Health program is clinic capacity, which was a facilitator or barrier depending on the clinic. Clinics with fewer health coaches, panel managers, or behavioral health staff per provider have had a more difficult time maintaining consistent communication and providing patient-centered care than clinics with more support staff. Clinics that book a greater number of appointments per day (such as pediatric clinics) also have less time to engage in team huddles. These clinics also have limited capacity to administer the BH-6 instrument; rather than administering it to all patients, they focus on new patients, patients seen for annual routine visits, and patients presenting with red flags, such as crying.

Two external factors have presented challenges to the implementation of the Sanford Health One Care initiative: (1) payment models and (2) Sanford Health enterprise's technological environment. First, Sanford Health compensates providers primarily using an FFS approach. Because staff time spent developing or attending trainings, developing chronic condition care guidelines, and huddling (among others) is not billable, some physicians are reluctant to dedicate their time to these activities. Moreover, not all new care services are billable. For example, BHTTs can bill for counseling and diagnostic assessments, but not for triaging and referral services. To offset such challenges, Sanford Health uses its HCIA to cover half of the cost of delivering BHTT services, and the HCIA entirely funds panel managers' and health coaches' salaries. Although many providers emphasized the conflict between the FFS payment environment Sanford uses and patient-centered care, they believed that the medical home model would lead to improvements in care quality and patients' outcomes. They also anticipated that the payment environment will shift toward value-based purchasing in the future and viewed the HCIA program as an investment in preparing for that environment.

Second, Sanford Health's new EHR system has both created challenges and offered opportunities for implementing the One Care program. With the recent system wide transition to a new EHR system, which many respondents characterized as a downgrade, Sanford Health employees were focused on learning the new system, obstructing efforts to transition to a fully integrated medical home model of care. For example, staff at one practice stated that after the implementation of the new EHR system PCPs lost the ability to directly schedule psychology appointments for their patients. Nonetheless, most respondents felt they had overcome the challenges created by the new EHR system and were beginning to take advantage of the enhanced functionality of the new system, including chronic condition guidelines, patient interfaces, and telemonitoring capabilities. In addition, after several change orders with its vendor, Sanford Health has almost completed incorporating the patient screening tools and reports into its new EHR system.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which Sanford Health implemented its HCIA program. As part of this qualitative evaluation, we consider three outcome domains: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

Sanford Health's approach to transforming primary care practices was to introduce the new processes in phases, recognizing that clinics were at various stages of readiness. Given its incremental approach, Sanford Health has implemented nearly all program components on schedule, including workforce development, team-based primary care with integrated behavioral health, and standardized chronic care guidelines. One exception is universal patient screenings, which Sanford Health had hoped to have in operation by now. However, EHR challenges have hindered the implementation of screenings.

Sanford Health has deviated from its original operational plans in two ways. First, it withdrew the OB/GYN clinics from the innovation because targeted chronic conditions are rarely treated in OB/GYN settings. In addition, Sanford Health originally proposed to include cultural advisors on the care teams, particularly to advocate for its Native American patients. However, One Care's cultural liaison cautioned that the goal of full integration would be difficult to achieve in the current climate due to longstanding trust issues and a lack of understanding of Native American culture. Instead, the cultural liaison advised One Care to shift its focus to a foundational approach, raising awareness among staff and patients rather than incorporating cultural advisors directly into patient care. Sanford Health introduced cultural mindfulness training for all participating staff, and is finalizing the production of an educational video featuring Billy Mills, a Native American Olympic gold medalist with diabetes. The purpose of the video is to educate staff and patients and to inspire Native American and other patients to improve management of their chronic conditions.

Dosage was not a relevant measure of implementation effectiveness for this program.

## **B. Program reach and spillover**

One Care's strategy is to work at the practice level to improve population health. By implementing team-based care and introducing new workflow protocols, all patients who receive care at participating clinics can potentially benefit from the various components of the intervention. As a result, One Care does not have a formal recruitment and enrollment process: Sanford Health wants all patients at participating clinics to have access to fully integrated care, regardless of insurance status or payer source. The One Care program has served more than 600,000 patients across the 33 participating clinics since inception.

In addition to potentially benefitting all patients who receive care at a participating clinic regardless of their medical or mental health conditions, the program has had a direct spillover effect on the specialty behavioral health clinics in the Sanford Health system. With the integration of behavioral health into primary care, specialty clinics are beginning to receive fewer low-acuity care patients and more acute care referrals. The reduction in the number of low-acuity patients from the referral pipeline has lowered no-show rates at specialty clinics. The program has also had a spillover effect through the residency practices within the Sanford Health system. Resident physicians reported learning lessons from the integrated team-based approach and applying those lessons to new settings after completing their residency program.

## **C. Sustainability and replicability**

The HCIA enabled Sanford Health to create and fully integrate training modules, behavioral health screenings, and chronic care guidelines, which staff will continue to use after the award. The Chronic Care Professional training module saves resources because Sanford Health no longer has to send health coaches and BHTTs to remote trainings for certification.

However, staff were less certain that clinics would sustain BHTTs, health coaches and panel managers after the award because most of their services are nonbillable. One psychologist described Sanford Health's business model as a "business within a business," in which decisions to maintain positions are left to the individual clinics. At the same time, respondents indicated that clinics that funded BHTT and/or RN health coaches before the award were likely to try to find funds to maintain those positions. One physician reported that efforts to improve care, including the HCIA initiative and the new EHR system, have reduced the number of patients that doctors can see each day, creating another challenge for sustainability. Program administrators are beginning to collect and analyze data to build a case for sustaining staff positions. They hope to show that efficiencies—such as the lower cost of BHTTs compared with psychologists or psychiatrists and fewer no-shows for specialists' appointments—outweigh the costs associated with the program. Staff also suggested that improved quality measure scores will support their case for sustaining the program, especially given secular trends toward value-based reimbursement. Depending on the outcomes of these analyses, Sanford Health might also expand the program to additional clinics, although replication is uncertain at this point.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Engaging staff via trainings, meetings, and informal discussions laid a foundation for fully integrated primary care, and observers note that more physicians are participating in daily

huddles. Sanford Health staff acknowledged the impact of patients' wins for earning physicians' buy-in: when doctors see benefits to their patients, they are quicker to refer patients with chronic diseases to health coaches, BHTTs, and other specialists, or to consult with them about patients. One physician stated, "We've had BHTTs here, but now we're getting to the point where we're not just collocating practices, we're actually working in tandem and in sync with patients. We're thinking of our colleagues sooner rather than later." Behavioral health staff also noted that physicians were becoming more aware of patients' behavioral health issues and their impact on patients' noncompliance. Respondents indicated that physicians' ability to offload work and better manage patients increased physicians' satisfaction, but that doctors still struggle with new processes such as patient screenings and team huddles, and how those processes impede on their time in an FFS environment.

## **B. Perceived effects on patients**

Previously, patients referred to behavioral health specialty clinics traditionally had to wait several weeks for an appointment and had historically high no-show rates. Fully integrating behavioral health with primary care enables providers to see patients on the same day in a more comfortable, less stigmatized setting. Patients also have quicker access to counseling and medications for behavioral health concerns than before the award. Patients struggling to control their chronic conditions have access to health coaches, who maintain contact and build relationships with their patients, helping them self-manage their chronic conditions more effectively. Staff also believe that including panel managers on the team has contributed to better outcomes for patients because they can proactively identify patients with chronic conditions who are due for an appointment. One respondent reported that the program has tripled the percentage of patients with depression who achieved recovery within one year, from 20 to 60 percent; another respondent said that the program has helped to reduce unnecessary ED visits.

## **VII. Conclusions**

Sanford Health is a large, integrated health system with considerable resources and a wide geographic reach, giving it advantages that small, independent practices trying to improve care might not have. Two years into its three-year HCIA program agreement, Sanford Health continues to successfully implement fully integrated medical homes in its 33 primary care clinics. Sanford Health has strategically allocated HCIA funding to develop standardized trainings, compensate employees for time spent developing and attending trainings, and supplement the salaries of staff in new positions, although some clinics still lack panel managers and adequate health coach and behavioral health staff. Providers are engaged via workforce development, regular meetings, and support from local and project leadership. Engaged staff offer valuable feedback, which One Care leadership uses to correct the program's course, including the decision to provide clinics autonomy over implementing the new approaches to care. Clinics are working locally to align fully integrated care with the spatial layout and team composition at their sites, and clinics with previous medical home experience have helped to transform other clinics. Despite initial challenges with the roll-out of the new EHR system, Sanford Health now uses the system to support its program, specifically incorporating patient screenings, chronic care guidelines, registries, and patient telemonitoring functionality. Sanford Health has achieved timely intervention with spillover effects, especially at specialty behavioral health clinics. One Care providers and administrators are committed to sustaining the new approach to primary care and now have sufficient data to calculate quality measures. Despite the

financial challenges of implementing a medical home within an FFS payment system, One Care representatives believe that increased scores on quality measures and a secular shift toward value-based care will facilitate their ability to sustain and potentially replicate their innovative, integrated approach to care in other Sanford Health clinics.



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**I. Introduction**

This summary provides an update of the implementation experience and effectiveness of TransforMED’s Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, nearly two years after program award. It is based on a review of the awardee’s quarterly reports and information collected during the first-round site visits conducted March 31–April 4, 2014. The site visits included interviews with health system administrators, primary care practice administrators, and frontline staff involved in the primary care redesign program in two participating TransforMED communities. This report identifies the barriers and facilitators encountered during program implementation and uses these factors to assess the effectiveness of program implementation.

**II. Overview**

In this section, we provide a summary of the TransforMED primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) TransforMED, a national learning and dissemination contractor, received a three-year, \$20.8 million Health Care Innovation Award (HCIA) and is working with 15 health systems and 90 primary care practices across the United States to implement a patient-centered medical neighborhood (PCMN) program. Most participating health systems are part of VHA, a national network of nonprofit health systems. Each health system recruited multiple primary care practices to participate in the initiative. TransforMED refers to each health system and the primary care practices recruited by the health systems as a community. By the end of the HCIA-funded initiative, TransforMED hopes to reduce overall health care costs for Medicare and Medicaid beneficiaries, improve the patients’ health and experiences with care, and expand the model to additional primary care practices.

**Table 1. Summary of TransforMED primary care redesign program**

Awardee’s name	TransforMED
Award amount	\$20,750,000
Implementation date	November 2012
Program goals	<ol style="list-style-type: none"> <li>1. Implement population management software in participating primary care practices</li> <li>2. Implement cost management reporting</li> <li>3. Participate in PCMN collaboration and shared learning activities</li> <li>4. Document and disseminate best practices</li> </ol>
Innovation components	Care management, health information technology (IT), and patient-centered care
Intervention focus	Practice
Workforce development	Change roles of existing staff to establish one health coach in each practice and three super users in each community
Target population	All insured patients treated at participating practices
Program setting	Provider-based (primary care practices)
Market area	Multistate
Market location	Urban, rural
Core outcomes	<ul style="list-style-type: none"> <li>• \$49.5 million reduction in overall care costs for Medicare and Medicaid beneficiaries</li> <li>• 15 percent improvement in condition-specific quality measures</li> <li>• 25 percent improvement in patients’ experiences</li> <li>• Expand program to 18 to 20 additional practices in each community</li> </ul>

Source: Review of TransforMED program reports.

Notes: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

To implement the PCMN program, TransforMED is assisting participating health systems and primary care practices to (1) implement population management software, (2) adopt cost-management reporting procedures, (3) collaborate with other participating practices through shared learning activities, and (4) document and disseminate best practices. TransforMED works with three other organizations to implement this: (1) Phytel, a health care technology company, to provide and install population management software at each participating primary care practice; (2) Cobalt Talon, a health care analytic solutions company, to produce cost-management reports based on the Medicare fee-for-service claims for patients who receive care from participating practices; and (3) VHA to document and disseminate PCMN best practices.

### III. Operational update

In this section, we provide an update on the operational aspects of the TransforMED primary care redesign program as of April 2014 (see Table 2). Overall, the two communities we visited are making progress toward implementing the PCMN program. The population management software has been in place in employed practices since December 2013, and TransforMED and Phytel plan to install the software in aligned practices by the end of 2014.<sup>13</sup> Employed practices are training health coaches, individuals in each community serving as local experts in using population management information, to use the Phytel software to generate reports that identify gaps in patients’ care and organize outreach campaigns (through telephone calls, letters, and emails) to notify patients with gaps in care. TransforMED and Cobalt Talon are in the initial stages of implementing cost-management reporting. In January and February 2014, TransforMED and Cobalt Talon identified super users, three individuals in each community selected to facilitate the adoption and implementation of the cost-management software, and trained them to generate Cobalt Talon reports to identify the top chronic conditions for which patients are readmitted to the hospital or for which they seek care in an emergency department (ED). Super users include a range of clinical and administrative staff and both practice- and system-level functions.

**Table 2. Status of operational aspects of TransforMED primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. Population management systems	<ul style="list-style-type: none"> <li>• Phytel installed its software in all employed practices and is beginning to install the software in aligned practices.</li> <li>• Staff at employed practices are producing lists of patients with gaps in care and conducting outreach campaigns based on those gaps.</li> </ul>
	2. Cost-management reporting	<ul style="list-style-type: none"> <li>• Health systems and employed practices are beginning to generate reports to identify the top chronic conditions for which patients are readmitted to the hospital and visit the ED.</li> </ul>
	3. Learning and development	<ul style="list-style-type: none"> <li>• TransforMED is beginning to tailor its approach to PCMN implementation to meet the specific needs of individual communities.</li> </ul>
	4. Documentation and dissemination	<ul style="list-style-type: none"> <li>• TransforMED and Phytel identified the first practice to develop a VHA-trademarked Leading Practice Blueprint (a formal process for communicating knowledge from leading practices).</li> </ul>

<sup>13</sup>TransforMED refers to participating practices that are owned by a participating health system as “employed practices” and to independent participating practices as “aligned practices.”

Table 2 (continued)

Operational aspects	Program components	Current status
Workforce development		<ul style="list-style-type: none"> <li>• A second PCMN networking conference call occurred in March 2014.</li> <li>• 41 people attended Cobalt Talon training in 2014.</li> <li>• 35 people attended clinical health coach training in 2014.</li> <li>• 79 people are participating in online clinical health coach training.</li> </ul>
Patient enrollment		<ul style="list-style-type: none"> <li>• A cumulative total of 1,049,101 patients received primary care services from participating practices (since inception).</li> </ul>

Sources: Interviews with program staff and review of program reports, April 2014.

TransforMED uses a variety of strategies to facilitate PCMN program implementation in the 15 communities. These include biannual communitywide learning collaboratives, monthly conference calls with health systems and practices, webinars, site visits, email exchanges, and an online patient-centered medical home (PCMH) networking site (called Delta Exchange) that provides resources and facilitates information-sharing among program participants.

TransforMED initially required health systems and practices to document the status of process improvements using a Plan-Do-Study-Act (PDSA) format, but shifted to a targeted approach during the second year of the HCIA initiative. This changed the format for reporting to preparing individual system and practice plans to refocus participating entities on achieving community-specific metrics, such as reductions in unnecessary hospital readmission and ED visit rates. In early 2014, TransforMED organized additional trainings for health coaches and super users. Each practice selected a health coach to attend a clinical health coach training session conducted by the Iowa Chronic Care Consortium, which taught participants about motivational interviewing, evidence-based health coaching, population health and risk-stratification, and coaching using the Myers-Briggs Type Indicator. Similarly, TransforMED selected super users in each community to attend a two-day training conducted by Cobalt Talon in which super users learned how to generate reports from the Cobalt Talon system and discussed health IT, clinical integration, and PCMH and PCMN concepts. TransforMED hosted two follow-up telephone calls with super users to discuss their experiences and challenges using the Cobalt Talon reports.

The program does not directly enroll patients. Rather, all patients insured by Medicaid, Medicare, or a commercial payer and who are treated by a primary care provider (PCP) at a participating practice are considered eligible to benefit from intervention services. An estimated cumulative total of 1,049,101 unique patients received primary care services from the participating practices through April 2014 (since inception), more than TransforMED’s projected target of 872,647.

#### IV. Implementation experience

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

## A. Implementation process

The implementation process factors that facilitated or challenged PCMN implementation varied across and within the two communities we visited. Three implementation process factors that facilitated or challenged program implementation were (1) monitoring progress to guide ongoing improvement, (2) identifying key implementation roles, and (3) engaging and obtaining buy-in from staff. First, within and across communities, respondents expressed different perceptions of the utility of the PDSA format in supporting process improvements. For example, an administrator from an aligned practice thought that having to send a PDSA report to TransforMED every month helped to “move us along on our path a little faster.” Another administrator from an aligned practice that did not have experience with PDSA cycles thought the PDSAs were the key attribute of PCMN implementation and resulted in the practice making numerous process improvements. However, one data-oriented health system administrator perceived PDSAs to be effective only if the process improvement could be measured. In addition, several respondents thought it was helpful that TransforMED was not prescriptive about the process improvements that should be made, whereas other respondents thought that TransforMED could have been more helpful in working with them to identify goals and process improvements for their practices. An administrator from an employed practice, who was a proponent of quality improvement, stated that she did not understand how documenting PDSAs helped the practice to implement the Phytel software or cost-management reporting functions.

Second, the two communities we visited had formally established implementation leaders; however, the implementation leaders used different approaches to support PCMN program implementation. One community had a project manager who was employed by the health system and worked with each practice to ensure that program requirements were met. The project manager visited each participating practice once a week to provide hands-on operational support. For example, the program manager developed a template for preparing and submitting monthly status reports to TransforMED and helped practices make PDSA cycles a routine part of practice. One PCP from an aligned practice remarked about the support from the project manager, “Whenever there’s even a question that might be a little crazy, I get an answer right away, they help us, they walk us through it.” A PCP from an employed practice also stated that the biggest resource for PCMN implementation was the project manager. In contrast, the other community we visited did not have a formal implementation leader to oversee operational aspects of PCMN implementation. Instead, a health system administrator relied on TransforMED to provide operational support to the practices. Although a PCP from an aligned practice was recognized by PCMN stakeholders within the community as a champion of PCMN implementation (because of his innovative approach to using data), the champion had no formal mechanism to provide support with PCMN implementation, with the exception of a monthly meeting of the PCMN stakeholders within the community.

Third, one process-related factor presented challenges for PCMN implementation in both communities: engagement of and buy-in from staff. Respondents described varying levels of provider and staff buy-in. Respondents said that some providers are eager to use population management reports to identify unmet needs in their patient panels and to identify potential areas for quality improvement, whereas other providers are less interested or even resistant to using the reports. One administrator described this challenge: “One of the things we struggle with is that not everyone is of like mind when it comes to the PCMH.... Not all docs want to be PCMH docs

and work and do all these extra things.” Similarly, respondents said that some staff support the PCMN program, but others view it as extra work. However, several respondents noted that attitudes were changing over time. For example, in one of the communities we visited, despite resistance from some providers and staff, administrators and program staff continued to conduct HCIA-funded activities and said that, after more than a year of participation in the PCMN program, providers and staff were beginning to see the benefit of these activities.

## **B. Program characteristics**

Characteristics of the program being implemented can also facilitate or challenge implementation. One characteristic of the TransformMED initiative that facilitated PCMN implementation was the perceived relative advantage of the Phytel software compared with previous reporting methods. In both communities visited, respondents reported that the Phytel software offered advantages over the manual processes they had previously used for reporting population management information. Respondents described the Phytel software as a robust system for organizing and presenting a lot of data and making them usable to the practice. They noted that Phytel software helped care managers reach out to patients with gaps in care; it also helped administrators identify process improvement metrics and allocate care management resources within and across practices. As one administrator stated, “I can better define the goal of population health for my team because I have metrics, whereas before we didn’t have metrics. It’s really exciting.”

On the other hand, although PCMN stakeholders perceive the Phytel software as a powerful tool, respondents described many challenges to implementing it effectively. For example, for the Phytel software to pull data electronically, practices had to ensure that the software was correctly mapped to their electronic health record (EHR) systems. Respondents described experiencing many challenges mapping the software to their systems because of how the data had been previously entered and where the data were located. As one practitioner stated, “There is a disconnect between our data and what comes out in Phytel data, in some respects.... If we happen to have housed it in a different place, or in a different way from where Phytel’s looking, it doesn’t recognize it.” Another respondent described having difficulties determining whether problems getting accurate data from Phytel were related to the practice’s systems or the Phytel software. Another health system administrator talked about dealing with attribution issues due to the way in which the Phytel software defined providers and patient panels. As a result, PCPs were reluctant to use Phytel because it did not accurately attribute their patients. In addition, several aligned practices in one community recently transitioned to a new EHR system and could not implement the Phytel software because it required one year of data. Due to the delay in implementing the Phytel software in these practices, TransformMED and the community stakeholders considered pulling these practices from the PCMN program. (To date, they have not done so.)

Another characteristic of the TransformMED initiative that presented challenges to PCMN implementation was the cost of investing in staff roles for PCMN-related functions. Respondents identified increased costs as the biggest challenge to implementing the PCMN. Administrators stated that investing in staff resources—such as care managers and health coaches—increases practice costs, although the return on investment will be realized only in the future. (Although HCIA covers software costs for the participating practices, HCIA funds do not support staffing

investments required for the initiative.) One PCP noted that the practice had to eliminate the health coach position during PCMN implementation. A health system administrator emphasized, “If you learn anything out of [the award], it’s a very expensive proposition to do all these things. The practices that are not employed or owned have a very difficult time, and we have a very difficult time even as an institution, because ... keeping patients healthier, out of the hospital, and doing all the right things [is] expensive.... All of that activity is being subsidized by margins earned in the hospital. If we were doing this on our own, there’s no chance of approaching profitability to do everything that you need to do in a PCMH activity.”

### **C. Internal and external factors**

Characteristics of the organization implementing a program, and features of the environmental context in which the organization is located, can also influence implementation. One internal factor facilitated implementation of the PCMN program: experience with PCMH implementation. The practices we visited were either in the final stages of submitting their applications for National Committee for Quality Assurance (NCQA) Level-3 certification, had already submitted them, or had already achieved NCQA Level-3 certification as a PCMH. Respondents noted that the PCMN model was the next logical step for their practices because they were already focused on developing a PCMH infrastructure—including forming care teams, identifying gaps in patients’ care, doing previsit planning, and developing care plans for high-risk patients—which were also elements of the PCMN. Respondents in both communities also already recognized the need for the additional practice transformation that was facilitated by PCMN implementation. Before participating in the TransforMED initiative, the health systems and practices in both communities were engaged in quality improvement initiatives and other activities related to PCMH implementation. Administrators and program staff viewed the TransforMED initiative not as a driver but as a contributor to the infrastructure they were already building. As one administrator said, “We probably would have done a lot of this stuff with or without TransforMED, but they’ve helped us get there.”

One external factor, the general policy environment, also facilitated PCMN implementation in both communities. Respondents reported that the goals of the PCMN aligned well with other goals set through accountable care organizations (ACOs), Blue Cross Blue Shield PCMH initiatives, and certain provisions of the Patient Protection and Affordable Care Act (ACA). For example, in both communities, respondents described how care management activities are part of both ACO and PCMN program requirements. Program staff in one practice noted that their care management activities are “a little bit of the ACO and a little bit of the grant [TransforMED award] ... everybody wants to see the data that shows that [care management] ... is saving dollars.” Similarly, respondents in both communities said that their quality improvement efforts in Blue Cross Blue Shield PCMH initiatives support the work of the TransforMED initiative. Administrative and program staff at one site also spoke of how the ACA encourages the adoption of EHR systems and promotes greater provider accountability, both of which align with the goals of the PCMN model.

Another external factor, the current payment system for primary care services, created challenges for practices in both communities. Respondents spoke of a lack of reimbursement for care coordination and care management activities, making it difficult to sustain the quality improvements they have already achieved through the award. One administrator said, “Care



management is such a key, integral piece of making TransforMED work, but we don't get paid for care management activities. We're billing for transition of care, but that's very small... It's hard for me to justify why I have 10 people not bringing in revenue, but they are the ones making TransforMED succeed." Administrative and program staff in one community said that the new billing codes for care management and transitional care might provide reimbursement for these activities in the future.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which the two communities we visited implemented the PCMN program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

PCMN implementation at both communities is on track with the exception of implementing the Phytel software in the aligned practices. Implementation of cost management reporting is on track, but super users noted that they were still learning how it would be used to support the PCMN program. TransforMED is in the process of implementing the last component of the HCIA, best practices dissemination. TransforMED and VHA identified the first leading practice for which a Leading Practice Blueprint will be developed.

TransforMED demonstrated flexibility in implementing its program design, allowing program administrators to make decisions about how the program should be rolled out to the participating practices. For example, communities have the option to centralize care managers within the health system or disperse them in the practices to support population management. One program administrator described PCMN implementation as involving hard work to develop standards across the practices while giving leeway to each practice to maximize the effectiveness of the different interventions. Dosage was not a relevant outcome measure for this program.

### **B. Program reach and spillover**

All patients who receive primary care at participating practices are expected to benefit from the PCMN program. However, the benefit of the intervention might be limited in aligned practices that have not yet implemented the Phytel software or in participating practices in which PCPs remain hesitant about using population management reports to identify unmet needs in their patient panels. In the third year of the PCMN program, TransforMED plans to recruit an additional 18 to 22 practices in each community to expand the program's reach.

### **C. Sustainability and replicability**

Administrators across the two communities we visited were uncertain about the sustainability of the PCMN program after the end of the award. First, administrators were undecided about whether to continue leasing the Phytel software after the award ends (when TransforMED will stop paying for it). They said they learned a lot through their participation in the PCMN program about using EHR platforms to support population management and were discussing the possibility of building internal capabilities to replicate the Phytel software functions. Second, administrators expressed uncertainty about the ability to sustain the care

management staffing needed to implement population management activities. One administrator stated, “I think the jury’s out. I think if the world doesn’t catch up, if reimbursement really doesn’t change to pay for all the things we’ve added, we can’t sustain it. It’s up to the federal government and the other payers to say it’s worth paying for care coordinators, care managers, [and] all the staff we have to reap the benefits.” Finally, respondents were uncertain about whether to continue using the Cobalt Talon system for cost-management reporting because of the 6- to 12-month lag in the input data requirements and the availability of similar information from other sources.

Respondents who hope the PCMN program will be sustained also talked about the importance of expanding it to other providers in the community, including primary care and specialist practices and hospitals. One community invited nonparticipating practices to a monthly meeting during which the PCMN program was discussed. During the meeting, a health system administrator described a vision of expanding the PCMN program by connecting EHR platforms and developing integrated care teams between health system practices and hospitals so patients treated anywhere in the community would be identified and cared for by an integrated care team of providers.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Respondents in both communities said that the PCMN program had positive effects on the practice patterns of providers and other clinic staff. First, respondents said the program strengthened the collaboration of practices within a community. Health system and practice administrators acknowledged the benefits of increased communication among the participating practices, mainly via regular meetings among PCMN stakeholders in each community. Second, respondents said that the program components reduced the burden on physicians through practice improvements guided by the PDSA process or having access to more patient information through Phytel. They noted that previsit planning, in particular, reduced the burden on PCPs of locating patients’ information during a visit. Third, respondents noted that the Phytel reports enabled them to identify when providers were conducting screenings and other procedures, but not documenting them in a standardized way in the EHR system. After program staff reviewed the data and established a standardized system for documenting procedures, providers were able to improve their use of the EHR system. One PCP acknowledged that the PCMN program helped her understand how to use the EHR system to review her patient panel.

### **B. Perceived effects on patients**

Respondents in both communities perceived that the program was having a positive effect on patients’ care and outcomes. First, patients now receive email or mail reminders to schedule appointments for certain services, such as laboratory and diagnostic tests and follow-up visits with their PCP. Second, program staff said there was anecdotal evidence suggesting that patients’ care was now being better managed and coordinated due to the PCMN program. Specifically, they attributed a reported 15 percent reduction in hospital admissions to PCMN activities. The program staff also said the program has led to an increase in the number of referrals for screenings—most notably, colonoscopies. Third, health coaches are beginning to use motivational interviewing techniques with patients and have improved their listening and

communication skills during interactions with patients. Finally, one practice changed the way in which it schedules visits to increase access for new patients. However, both communities acknowledged that participating in multiple health care initiatives with overlapping goals made it difficult to link these provider and patient benefits to the TransformMED program.

## **VII. Conclusions**

Two years into the three-year program agreement, the employed practices we visited overcame challenges to successfully implement the Phytel software, albeit delayed from original plans, and aligned practices were preparing to implement the Phytel software this year. TransformMED and Cobalt Talon also started working with super users to implement the cost-management reporting functions in 2014. Although participating health systems and practices are working to implement these two core components, TransformMED is further supporting PCMN implementation by shifting the focus of ongoing processes improvements to achieving community-specific metrics. Despite the progress in implementing the PCMN program, respondents expressed uncertainty about sustaining the program at the end of the award. Both communities have increased their capacities for maintaining population management systems after TransformMED stops paying for the Phytel software at the end of the HCIA award, but the cost of supporting new staff roles for population management-related functions in the practices remains a major concern for program administrators.

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**UNIVERSITY HOSPITALS OF CLEVELAND RAINBOW BABIES AND  
CHILDREN'S HOSPITAL**

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## UNIVERSITY HOSPITALS OF CLEVELAND RAINBOW BABIES AND CHILDREN'S HOSPITAL

### I. Introduction

This summary provides an update of the implementation experience and effectiveness of University Hospitals of Cleveland Rainbow Babies & Children's Hospital's (UHC's) Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, nearly two years after program award. It is based on a review of the awardee's quarterly reports and information collected during the first-round site visit conducted April 14–18, 2014. The site visit included interviews with UHC program leaders and staff and providers and staff at four pediatric primary care practices involved in the program. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

### II. Overview

In this section, we provide a summary of the UHC primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) UHC received a three-year, \$12.8 million HCIA to transform the delivery of health care for children in northeastern Ohio by creating partnerships with pediatric primary care providers, patients and their caregivers, Medicaid managed care organizations (MCOs), and the state Medicaid agency. The UHC program aims to create a sustainable pediatric ambulatory care model that improves care and health and lowers costs for children enrolled in Medicaid. Its goals include reducing avoidable emergency department (ED) visits by 15 percent for Medicaid-enrolled children, reducing the total cost of care by 2.5 percent for Medicaid-enrolled children, having 75 percent of participating pediatricians meet quality targets, and enrolling at least 750 children with complex chronic or behavioral health conditions in care coordination services.

**Table 1. Summary of UHC primary care redesign program**

Awardee name	University Hospitals of Cleveland Rainbow Babies & Children's Hospital
Award amount	\$12,774,935
Implementation date	January 2013
Program description	<ol style="list-style-type: none"> <li>1. Establish structural components to support the functioning of the clinical components and develop a sustainable financial model, including <ul style="list-style-type: none"> <li>• A primary care provider network for care improvement activities</li> <li>• Financial contracts with Medicaid MCOs</li> <li>• A program database to support population health and care gap analyses</li> </ul> </li> <li>2. Establish six core clinical components to improve care for children, including <ul style="list-style-type: none"> <li>• Practice facilitation for primary care practices</li> <li>• Care coordination for children with complex chronic conditions</li> <li>• Integrated behavioral health services</li> <li>• ED avoidance intervention</li> <li>• Patient and community outreach</li> <li>• Hospital readmission prevention</li> </ul> </li> </ol>
Innovation components	Care coordination, care management, transitional care, health Information Technology (IT), integrated team care, payment reform, workforce development, practice facilitation, home care, and telehealth,
Intervention focus	Individual and practice
Workforce development	Create new positions (practice facilitators, behavioral health social workers, care managers, care coordinators, community health workers, telehealth physicians and attendants); change roles and responsibilities of existing staff (primary care providers and office staff)

Table 1 (continued)

Target population	Medicaid-enrolled children, children with chronic conditions, children with behavioral and mental health disorders, and high emergency department utilizers
Program setting	Provider-based (hospital and primary care practices)
Market area	Local (8 counties in northeastern Ohio)
Market location	Urban and rural
Core outcomes	<ul style="list-style-type: none"> <li>• 15.0 percent reduction in avoidable hospital ED visits</li> <li>• 2.5 percent reduction in total cost of care</li> <li>• 75.0 percent of primary care providers meet quality targets</li> </ul>

Source: Review of UHC program reports.

Notes: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

UHC organizes the key components of its program into structural and clinical components. The structural components of the program include (1) engagement of a primary care provider network for care improvement activities, (2) financial contracts with Medicaid MCOs, and (3) a programmatic database to support population health and care gap analyses. The clinical components of the program include (1) practice facilitation to primary care practices in quality measurement and improvement, (2) care coordination for children with complex chronic conditions, (3) integrated behavioral health services, (4) ED avoidance interventions, (5) patient and community outreach, and (6) hospital readmission prevention.

### III. Operational update

In this section, we provide an update on the operational aspects of the UHC primary care redesign program as of April 2014 (see Table 2). The program continued to engage its primary care practice network through a second round of quality incentive payments, a provider satisfaction survey, a semiannual advisory council meeting, and ongoing practice facilitation. The program executed a fourth shared-savings arrangement with a Medicaid MCO (out of a target of five), and it received its first shared-savings payment from an MCO. In consultation with its advisory council, UHC continued to increase expectations of what it requires for practice participation, including increased requirements for after-hours telephone triage and additional quality improvement metrics. The program hired and placed behavioral health crisis intervention social workers in the UHC ED with the goals of reducing unnecessary behavioral health admissions and connecting families to care. In the ED avoidance component, UHC hired two nurse case managers to help educate high ED utilizers on the appropriate use of health care resources and the importance of a continuous primary care provider relationship. UHC also recruited and began to train a group of community health workers to engage families about where and when to seek care for their children.



**Table 2. Status of operational aspects of UHC primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. Structural components	
	a. Provider network	Continued engagement of established network and added one new practice
	b. Medicaid MCO contracts	Established shared-savings arrangement with additional MCO
	c. Program database	Continued to build Medicaid claims database
	2. Clinical components	
	a. Practice facilitation	Continued to engage practices in meeting quality targets
	b. Children with complex chronic conditions	Refined staff roles and continued to work with families and patients
	c. Behavioral health	Continued services and began to evaluate impact
	d. ED avoidance	Continued services and negotiations for location of second telehealth hub
	e. Patient and community outreach	Continued marketing efforts and established case management program for high ED utilizers
	f. Hospital readmission	Continued planning and held stakeholder meeting
Workforce development	Hired additional ED crisis intervention social worker, case managers, outreach coordinator and began training community health workers for outreach	
Patient enrollment	Cumulatively enrolled 27,767 patients (since inception)	

Sources: Interviews with program staff and review of program reports, April 2014.

UHC experienced turnover in staff but was able to fill the open positions. The program hired an additional HCIA-funded behavioral health crisis intervention social worker for the ED and began training a cohort of community health workers to engage community members about care-seeking behaviors. The clinical component focused on children with complex chronic conditions and dedicated more resources to the dietitians’ time to address patients’ nutritional needs. Although the practice facilitation component originally had separate roles for facilitators and chart abstractors, program administrators plan to retrain existing staff to make this a combined role.

**IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V).

**A. Implementation process**

Three implementation process factors significantly facilitated the implementation of the UHC program: (1) engaging stakeholders, (2) monitoring progress to guide ongoing

improvement, and (3) team characteristics. First, program leadership and staff have engaged a broad group of stakeholders to support program implementation. The practice facilitation component was built on the engagement of a network of primary care practices through meetings with program administrators; engagement continues through direct practice facilitation, a quality- and process-based incentive plan, provider advisory group meetings, and continuing medical education events. As one program administrator noted, “I think that’s one thing that we’ve done that is hard to do, to get people [providers] on board and to get them talking about it [the program] and actually getting them committed to doing something different.” UHC has successfully engaged four Medicaid MCOs in shared-savings agreements and is pursuing a contract with the fifth MCO operating in the state. The program has also successfully engaged a large group of community mental health agencies to connect families to the agencies’ behavioral health interventions.

Second, program staff and administrators have established a data infrastructure to monitor the program, which has facilitated implementation by enabling them to track workflows, measure intermediate outcomes, and begin to assess core outcomes, such as costs of care. Administrators and staff have set up an internal program database to track key workflow processes and intermediate outcomes. For example, the behavioral health staff can use the database to track incoming referrals and note when families have made follow-up appointments. They can then use the database to track whether families were able to schedule and attend their appointments and to monitor family functioning scores at designated intervals after referral. UHC is also working with a private vendor to build a claims database using Ohio Medicaid data, which can provide utilization and cost analyses to guide population management. Program administrators plan to hire a quality manager to implement more formal quality improvement processes.

Third, teamwork within and across components has facilitated implementation. The program leaders discussed thoughts about teamwork even during the hiring stage, making sure they hired people who would be proactive and work well in teams. Program administrators hold all staff meetings, which program staff described as helpful in understanding what is going on with all the program components. Practice facilitators described their perceptions of the importance of becoming integrated into the larger program team to enable them to assist practices with all program components.

UHC encountered two implementation process challenges: (1) provider engagement and (2) the quality of the data needed to monitor progress. First, although the program has met its targeted number of practices and providers for its network, program administrators noted that some providers have been slow to embrace efforts to reduce unnecessary utilization and costs. For example, several providers were reluctant to implement changes that might reduce the number of fee-for-service visits, such as allowing telephone triage nurses to call in prescriptions for low-risk acute conditions. Program administrators have tried to address these concerns through the medical advisory council and individual interactions with providers. Second, the Medicaid data obtained from the state vendor (and needed to monitor utilization and cost trends) had missing fields and other errors that took time to identify and correct. The data also lacked cost information and the program had to work with a partner of the database vendor to create proxy costs from utilization data.

## **B. Program characteristics**

In addition to the implementation process factors, three characteristics of the UHC initiative also helped it implement the program: (1) frontline users' flexibility in implementing the program, (2) adaptation of the program to meet patients' and providers' needs, and (3) providers' perceptions of the relative advantage of the program compared with the standard delivery of care. First, frontline staff described flexibility to modify their roles and workflow to meet the needs of the program and its patients. For example, program administrators originally planned to have one social worker staff the telephone referral line and another provide behavioral health evaluation in primary care offices. The two people hired for these roles identified logistical challenges with this arrangement and modified their roles to be a mix between telephone and primary care office-based work.

Second, the administrators have adapted the program to fit the practice context and broader goals. Multiple administrators and staff noted that the program is intended to be innovative and that changes to the operational plan are expected and necessary for effective implementation. Although the core components of the program are unchanged, administrators have added subcomponents, such as hiring community health workers to expand the reach of the ED avoidance component and adding ED case managers to decrease unnecessary ED visits. The program has made other changes to improve efficiency, such as decreasing the amount of data collected for the practice facilitation component compared with the original research-based protocols.

Third, program administrators, providers, and primary care office staff felt the program was an advantage over the status quo, especially for behavioral health. Respondents noted challenges before the award in having sufficient time to address behavioral health concerns in office visits and getting access to behavioral health services for patients. Providers also discussed a desire to improve their consistency in delivering high quality care, particularly for children with increased needs, such as those enrolled in Medicaid. Several providers felt that the program supported them in being more consistent in meeting measures for high quality care. A few providers and staff also mentioned the importance of the program in reducing the cost of care.

## **C. Internal and external factors**

Characteristics of the organization implementing a program and features of the environmental contexts in which the organization is located can also influence implementation. Three internal factors have facilitated implementation of the UHC program: (1) organizational capacity, (2) history of prior similar interventions in the organization, and (3) leadership characteristics. First, as part of a large health care system, the program had access to in-kind resources, including a human resources department for hiring, legal and contracting departments for managed care negotiations and contracting, information technology support, and a health system accountable care organization (ACO) infrastructure. The program also had access to a variety of clinical experts to provide consultation on specific topics, such as asthma care quality improvement.

Second, UHC had a history of implementing or investigating interventions similar to some of the program components. Several practice facilitation staff members and network practices had prior experience in a research trial that involved the same processes and initial quality

measures as the current practice facilitation program. Newly hired practice facilitators were able to learn from the experience of the practice facilitator involved in the research trial, and staff at practices that had participated in the trial viewed the HCIA-funded program as a continuation of that intervention. The telephone triage interventions in the ED avoidance component were built on an existing nurse telephone triage program run at UHC. Lastly, program administrative leaders had begun to explore several aspects of the program with hospital administrators before the award opportunity, such as programs for children with complex chronic conditions and financial arrangements with Medicaid MCOs.

Third, organizational and program leadership have demonstrated leadership characteristics important for implementing and sustaining the program. Program administrators described how University Hospitals Health System administrators have expressed a commitment to developing ACO models, including one based on the UHC program. Additionally, program staff discussed how program administrators have acknowledged when they lack topic area knowledge (for example, behavioral health), hired staff to address those deficiencies, and delegated that work after providing a broad model and guidance. Program staff also noted that the administrators foster a collaborative environment and are available to assist with problems, but also encourage staff to take ownership and responsibility over tasks.

Two internal factors served as implementation barriers: (1) capacity and (2) team characteristics. First, although the program had access to a variety of resources and experts, the organization had limited experience with developing the data infrastructure for population health management. As a result, the program had to identify and train an internal data analyst and hire consultants to help it develop the claims database necessary for managing population health. Second, the practice facilitation program was originally located in a separate physical location with its own administrative oversight. Staff noted that this created a lack of awareness about other aspects of the program (such as behavioral health services) that could benefit from facilitation with practices. Due to the death of one of the project leaders and recognition of this lack of integration, the practice facilitators were moved to the same space as the rest of the program. After that time, the practice facilitators noted greater integration into the program.

Three external factors have been helpful in implementing the initiative: (1) patients' needs and resources, (2) connections to a broad professional network, and (3) the general policy environment. First, patients' needs and resources were taken into account during the design and implementation stage of the program. For example, the locations of the comprehensive care clinic and telehealth hub were based on analyses of patients' zip codes and community resources. The practice facilitation included metrics (such as fluoride application and lead testing) that address issues for which the population is at high risk. Second, the organization was well-connected to external organizations, such as Medicaid MCOs, community behavioral health agencies, and providers and agencies that care for populations with complex chronic conditions. UHC leveraged these connections to facilitate behavioral health referrals and identify locations for its telehealth hubs. Third, the general policy environment facilitated several components of the initiative. For example, the Ohio legislature passed legislation before the beginning of the HCIA program encouraging the formation of pediatric ACOs and passed legislation in early 2014 requiring Medicaid to pay for telehealth services. In addition, the Ohio Medicaid agency encouraged program administrators to include behavioral health in the program. At the same time, the policy environment also presented challenges to implementing the initiative: Ohio

Medicaid rebid its managed care contracts in 2013, causing delays in UHC's ability to negotiate contractual arrangements with MCOs.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which UHC implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

UHC has successfully implemented nearly all planned program components, including structural and financial components (a network of a primary care providers, shared-savings contracts with Medicaid MCOs in the state, and a programmatic database) and clinical components (practice facilitation, care for children with complex chronic conditions, integrated behavioral health services, ED avoidance, and patient outreach). The program is currently adding a new component to prevent hospital readmissions that was not part of the original operational plan and had just begun the planning phase for it in April 2014. However, not all components were implemented on the planned time line. Three interventions faced delays that the program has overcome or is addressing. First, the clinical component for children with complex chronic conditions initially included medical assistants who would act as family care advocates. This part of the intervention was discontinued when it was found that medical assistants did not have the depth of medical knowledge and experience needed for children with complex conditions. The medical assistants were replaced with additional nursing, social work, and dietician support on the care coordination team. Second, for the behavioral health component, implementation of ED-based crisis intervention social workers was delayed when administrators decided to hire social workers directly rather than attempt to use staff from community mental health agencies. Third, the program was delayed in deploying its first telehealth hub and had not yet deployed its second planned hub due to challenges in identifying suitable locations, executing leases, and integrating the hubs with hospital information technology.

Fidelity is primarily relevant for the practice facilitation component, which was based on a model developed during a previous randomized controlled trial. The program has maintained fidelity to the practice facilitation model and has begun to streamline the data collection done by practice facilitators to increase program efficiency. Dosage is also relevant to the practice facilitation component. All practices are receiving the expected dosage of approximately one visit per week from a practice facilitator, but the practice facilitators noted that the dosage received by individual providers varied across practices, depending on the lead physician in the practice. The facilitators described how some lead physicians disseminated information from the facilitators widely to all clinical staff, whereas other lead physicians did not share information from the program with other providers in their practice.

### **B. Program reach and spillover**

As of March 2014, UHC had reached its target to date by delivering direct services to 27,767 unique children through the clinical components of the program. However, program components vary in terms of their reach. For the behavioral health component, program administrators reported reaching their full three-year target of 250 children in the first few

months of the program. In contrast, the complex chronic condition program had enrolled only about 110 children, about half of the original goal for this time point in the project. The component's leaders described how recruitment and establishment of a care plan for children in the target population was much more time-intensive than they had initially expected. However, they expected enrollment to increase now that they had refined their processes. Program administrators reported that the telephone triage component was receiving calls at an expected volume, but the telehealth hub was seeing low utilization, with fewer than two patients per evening. The program staff were investigating a number of possible explanations for low use of the telehealth hub, including a lack of awareness in the community, a lack of understanding about conditions that were appropriate for the hub, and the role of perceived neighborhood borders and families' unwillingness to cross them. UHC has engaged a network of 154 pediatric providers in 29 practices across 46 locations to participate in the program, reaching its target for this component. The program has reached indirectly an additional 69,675 Medicaid-enrolled children who received care in the program's network of primary care practices, which exceeds the original target of 65,000 children. An additional 130,004 children with other types of insurance coverage were also receiving care in network practices and potentially benefiting from care improvements through practice facilitation.

### **C. Sustainability and replicability**

UHC has started taking steps to sustain its program after the end of HCIA funding. Program administrators have begun to conceptualize the program as the infrastructure for a pediatric ACO, and they have negotiated shared-savings contracts with four of the five Medicaid MCOs operating in the state and have started receiving initial payments. Program administrators were concerned that the shared-savings contracts with Medicaid MCOs might not provide a sufficient source of revenue for a pediatric population because savings are relatively small and most contracts are built on shared-savings from the prior year, which results in a high likelihood of diminishing returns over time. As a result, program administrators are holding internal discussions about potential options for partial or full risk-sharing with Medicaid MCOs. They also expressed concern that providing services to all patients regardless of insurance status and source of coverage could affect sustainability if they have contractual arrangements only with Medicaid MCOs. The program has enrolled several new practices since the beginning of the award, and administrators and staff reported that they have been able to replicate the program in these new practices.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Program staff, providers, and office staff reported that the program was changing care in pediatric primary care practices in several specific ways, including (1) delivery of new processes of care, (2) structured tracking and follow-up on needed care, (3) use of standardized screening and risk-assessment tools, (4) more consistent patient education, and (5) more consistent documentation. First, several program staff, providers, and office staff noted the implementation of new processes of care, particularly the use of fluoride varnish for young children at risk for dental caries. Multiple respondents pointed to fluoride varnish as an example of evidence-based care that was not previously delivered in these primary care practices but had quick uptake with the help of practice facilitation. Second, program staff, providers, and office staff discussed how

program quality metrics and feedback prompted them to track and follow up on patients' care. For example, a few providers reported previously receiving reports about ED visits by their patients, but not taking any actions. Now, they or their office staff contact families directly after ED visits. Providers and staff also reported following up more to see if labs had been drawn for patients after a visit, especially lead testing, and contacting families to reschedule missed preventive care visits. Third, providers and staff reported more frequent and consistent use of standardized screening and risk-assessment tools. These include measurement of body mass index and documentation of whether a child is overweight or obese, an asthma control questionnaire, and mental health screening. Fourth, providers and staff at participating practices described more consistent delivery of patient education. Several noted that the expectation to document whether a child is overweight or obese has made them more likely to discuss the issue with families and to give concrete recommendations. They also noted that they are more consistent in providing families with educational handouts from the program. Fifth, program staff, providers, and office staff noted that there have been increases in documentation of processes of care that were already being delivered. Although several noted they are only documenting care they were already providing, others suggested they were taking further steps because of this documentation, such as discussing and helping patients make plans about weight management.

Several program administrators and providers reported that the program has contributed to creating a culture of quality improvement within practices. One provider noted that weekly practice facilitator visits and monthly quality metric reports “help keep us on our toes” in addressing deficiencies in care. Similarly, a program administrator stated, “The key is finding the right metrics. If you can do that, we have shown that we can drive change across the greater network.” Office staff described involvement in more aspects of care, including following up with families and prompting providers to make sure care is not missed.

## **B. Perceived effects on patients**

UHC program staff, providers, and office staff perceived several positive effects of the program on patients and families, including (1) decreased ED visits, (2) decreased behavioral health admissions, (3) increased connections to outpatient behavioral health care, (4) increased dental care, and (5) improved family functioning. First, multiple program administrators and staff noted that the hospital has seen a decrease in the number of ED visits since the beginning of the program. However, they acknowledged that they could not yet compare this outcome to other hospitals and groups of children and could not conclude that the program was the primary cause. The staff for the complex chronic conditions program also noted that they have been able to support families through managing conditions at home rather than having families go to the ED. Second, administrators and staff reported that admissions for behavioral health conditions from the ED were down by 40 percent since introducing the ED crisis social workers. Again, they noted that they did not yet have the data to make comparisons to other hospitals. Third, program staff, providers, and office staff reported that connections for patients to outpatient behavioral health have improved since the program started. They perceived that patients are seen faster and in more appropriate settings compared with before the program. Fourth, respondents described how the program has increased dental care for children at high risk for dental caries, through direct application of fluoride varnish in the practices and through connections with dentists serving younger children. Fifth, administrators, providers, and staff felt that the program was

beginning to improve family functioning for children with behavioral health problems and complex chronic conditions. They noted anecdotal evidence of increased self-management of problems by families and decreased family stress.

## **VII. Conclusions**

Two years into its three-year program agreement, UHC has successfully implemented all of the components of its HCIA program and added additional subcomponents to address its goals of improving care and health and reducing costs for children enrolled in Medicaid. Although prior experience with some components of the program made implementation easier, UHC also successfully implemented new interventions for which there was a high demand in the provider and patient communities, such as behavioral health services. The program has met or exceeded its goals for program enrollment and has engaged a network of pediatric primary care providers. Practice facilitators have developed relationships with practices that both facilitators and providers felt have been conducive to quality improvement in busy clinical settings. Program administrators, staff, and providers felt that measurable improvements in care were occurring. Program administrators also noted promising trends in utilization from claims data that could lead to cost reductions, such as lower ED visit rates. They plan to continue operation of the current components, further develop new subcomponents (such as the community health worker intervention), and develop a new hospital readmission prevention component. UHC now conceives of its program as the infrastructure for a pediatric ACO and is investigating financial models to sustain its approach to improving care and health and reducing costs for children enrolled in Medicaid.



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**WYOMING INSTITUTE OF POPULATION HEALTH, A DIVISION OF CHEYENNE REGIONAL MEDICAL CENTER**

**I. Introduction**

This summary provides an update of the implementation experience and effectiveness of Wyoming Institute of Population Health’s (WIPH’s) Health Care Innovation Award (HCIA) primary care redesign program as of April 2014, one-and-a-half years after program award. WIPH is a division of Cheyenne Regional Medical Center. The summary is based on a review of the awardee’s quarterly reports and information collected during the first-round site visit conducted April 7–10, 2014. The site visit included interviews with WIPH’s program leaders and staff, as well as providers at several partner hospitals and primary care practices in both urban and rural communities. We also interviewed representatives from WIPH’s partners: TransforMED,<sup>14</sup> the Wyoming Department of Health, and the University of Wyoming’s School of Pharmacy. The purpose of this report is to identify the barriers and facilitators encountered during program implementation and to use these factors to assess the effectiveness of program implementation.

**II. Overview**

In this section, we provide a summary of WIPH’s Wyoming Medical Neighborhoods primary care redesign program (see Table 1). (A detailed description of the program design is provided in Volume II: Awardee Case Study Reports.) WIPH received a \$14.2 million HCIA to create patient-centered medical homes (PCMHs)—currently implemented in 20 clinics in Wyoming—and embed those PCMHs into medical neighborhoods. PCMHs function as the core of the medical neighborhoods and are supported by the following four programs: (1) the care transition program, (2) the virtual pharmacy program, (3) the telehealth program, and (4) the community-based medication donation program. With these interventions, WIPH’s goals include better health demonstrated through improvement on clinical measures, better care demonstrated by improvement on measures of patients’ satisfaction and engagement and by a reduction in preventable adverse drug events, and lower costs achieved through reduced hospital admissions and readmissions.

**Table 1. Summary of WIPH’s primary care redesign program**

Awardee’s name	Wyoming Institute of Population Health, a division of Cheyenne Regional Medical Center
Award amount	\$14,246,153
Implementation date	October 10, 2012
Program description	Create medical neighborhoods in Wyoming that include at least one of the following: (1) primary care practices that provide team-based, patient-centered care; (2) hospital transition assistance for patients 65 or older with chronic disease; (3) pharmacy medication management therapy and care coordination; (4) telehealth; and (5) community-based access to free medications
Innovation components	Care coordination, care management, care transition, patient-centered care, integrated care teams, health information technology (IT), practice facilitation
Intervention focus	Practice
Workforce development	TransforMED hosted quarterly learning collaboratives for transforming primary care practices; WIPH continued to train new care transition nurses and pharmacists

<sup>14</sup> TransforMED also received a health care innovation award, independent from WIPH’s award, and was also placed in the primary care redesign group of awardees.

Table 1 (continued)

Target population	Patients with chronic conditions, patients 65 or older, and patients with Medicaid
Program setting	Provider (hospital- and practice-based)
Market area	Statewide
Market location	Urban and rural
Core outcomes	<ul style="list-style-type: none"> <li>• Improvement in clinical outcomes, patient engagement, and patient satisfaction</li> <li>• Reduction in hospital admissions, readmissions, and preventable adverse drug events</li> <li>• Improved access to primary care and prescription medication</li> </ul>

Source: Review of Wyoming Institute of Population Health’s program reports.

Notes: The implementation date represents when programs began taking concrete steps toward launching their program components by hiring staff, establishing partnerships, investing in health information technology systems, and undertaking other operational activities.

The awardee leverages strategic partnerships throughout the state to implement its five program components. TransforMED serves as the practice facilitator supporting the PCMH transformation program. The WIPH leads the care transition program but has no direct authority over participating hospitals. The University of Wyoming’s School of Pharmacy leads the virtual pharmacy program. Cheyenne Regional Medical Center’s telehealth department leads the telehealth program. The Wyoming Department of Health coordinates the community-based medication donation program.

### III. Operational update

In this section, we provide an update on the operational aspects of the WIPH primary care redesign program as of April 2014 (see Table 2). The PCMH program initially recruited 21 primary care practices, more than twice its original target of 10 practices. The program lost two clinic participants, which both dropped out after deciding not to apply for National Committee for Quality Assurance (NCQA) recognition, and gained one in February 2014, bringing the total to 20 transforming practices. TransforMED transitioned its practice facilitation support away from developing the foundational skills and knowledge for becoming a PCMH toward meeting the NCQA application standards for PCMH must-pass elements. WIPH continued to implement the Wyoming Rural Care Transition Program<sup>®</sup> (WyRCT), a hospital transition program the awardee developed by adapting the Eric Coleman model to Wyoming’s frontier landscape. WyRCT was deployed at 14 hospitals, serving more than 2,400 patients since inception. Care transition nurses achieved 100 percent medication reconciliation among patients served, a process they describe as particularly helpful to reducing readmissions due to patients’ common, post-discharge confusion about medications. The administrators of the WyRCT program began collecting and analyzing patients’ survey and hospital readmission outcomes to demonstrate the value of the program. The purpose of the WyRCT surveys is to assess the knowledge and skills of the participants. WIPH also piloted three software enhancements to existing systems—one to streamline WyRCT patient tracking and management, one to increase access to telehealth, and one to enhance the medication donation program—that it plans to expand systemwide.

**Table 2. Status of operational aspects of WIPH’s primary care redesign program, April 2014**

Operational aspects	Program components	Current status
Innovation components	1. PCMH	<ul style="list-style-type: none"> <li>Added 1 practice and subtracted 2 practices</li> <li>20 primary care practices began working toward NCQA recognition</li> </ul>
	2. WyrCT Program	<ul style="list-style-type: none"> <li>Served 2,400 patients since inception</li> <li>Achieved 100 percent medication reconciliation for patients served</li> <li>Piloted CareScope to replace paper documentation</li> <li>Began collecting data to evaluate and demonstrate program quality</li> </ul>
	3. Virtual pharmacy	<ul style="list-style-type: none"> <li>Continued enrolling and serving patients in 6 participating pharmacies</li> <li>Began the contracting process with 2 pharmacies</li> <li>Continued to strategize ways to expand the program</li> </ul>
	4. Telehealth	<ul style="list-style-type: none"> <li>Recruited 2 new hospitals, for a total of 20 hospitals</li> <li>Continued to install telehealth software on physicians’ desktop computers and mobile devices, for a total of 234 connections</li> <li>Piloted CloudAxis to increase access to telehealth</li> </ul>
	5. Community-based medication donation program	<ul style="list-style-type: none"> <li>Launched software reporting feature to identify gaps between donated medications and medications that patients struggle to afford</li> <li>Recruited new hospitals and PCMHs as donation and referral sites</li> </ul>
Workforce development		<ul style="list-style-type: none"> <li>Experienced turnover among care transition nurses</li> <li>Hired a PCMH coach and telehealth medical director</li> <li>Trained a total of 44 staff for WyrCT and virtual pharmacy</li> </ul>
Patient enrollment		Served a cumulative total of 2,680 participants (since inception), about 90 percent through the care transition program (unable to assess the number of patients benefiting from the PCMH program due to lack of information from participating practices)

Sources: Interviews with program staff and review of program reports, April 2014.

The virtual pharmacy program had a total of six participating pharmacies and seven trained pharmacists, plus at least two pending contracts with pharmacies. Participating pharmacies began identifying, enrolling, and serving a small number of eligible patients in January 2014 while university administrators have been strategizing ways to increase enrollment. Since inception, 14 PCMHs and 18 hospitals adopted the telehealth program to facilitate training, staff meetings, and behavioral health consultations. In the medication donation program, 10 PCMHs were serving as referral sites and seven hospitals were acting as donation sites, in addition to several community donation sites.

In terms of program staffing and workforce development, TransforMED is facilitating primary care practice transformation via quarterly learning collaboratives, site visits, telephone calls, and NCQA application reviews. WIPH hired a PCMH coach to assist clinics because TransforMED’s contract ends in January 2015. Practices receive limited direct award funding and make independent decisions about task allocation and staff development. Hospitals had difficulty retaining care transition nurses given the program requirement that a nurse be at the hospital every day of the week so that he or she can approach all eligible patients in the hospital and contact them within 48 hours of discharge. Requiring daily coverage in smaller hospitals can be burdensome, especially if the hospital has only one care transition nurse. From January to

March 2014, the awardee trained seven additional care transition nurses, for a combined total of 44 trainees between the WyRCT and virtual pharmacy programs. The awardee also hired a telehealth medical director to serve through the award period.

#### **IV. Implementation experience**

In this section, we review three domains associated with implementation experience: (1) implementation process, (2) program characteristics, and (3) internal and external environments. Implementation research has shown that barriers and facilitators within these domains are important determinants of implementation effectiveness (discussed in Section V). This section focuses primarily on the PCMH and WyRCT components, which are central to the HCIA-funded innovation. The other three programs enhance the core components with pharmacy-based medication management therapy, physician- and hospital-based telehealth, and community-based medication access.

##### **A. Implementation process**

Two implementation factors challenged the implementation of the Wyoming Medical Neighborhoods program: (1) engaging primary care providers (PCPs) and (2) dedicating resources to support the program.

First, effectively engaging primary care practices has been challenging for TransforMED and care transition nurses. Providers from several practices reported that TransforMED had failed to provide adequate transformation support, particularly with regard to the NCQA application process and certification requirements. Two practices cited staff turnover at TransforMED as a barrier to receiving fast, helpful responses to their application-related queries, although they did regard TransforMED's application review as valuable. TransforMED has begun to address sites' concerns by focusing on the NCQA application process and requirements. The awardee also hired a PCMH coach to provide specialized support to participating sites; the coach will continue providing support after the end of the award. The awardee described providers as becoming more engaged as they moved through implementation and began to see benefits of new care processes, such as team huddles.

Engaging and obtaining buy-in among PCPs about the hospital-based care transition program has also been a challenge, primarily because of communication problems. During training, care transition staff are taught about the importance of marketing the program to physicians, hospital staff, and the community, but care transitions nurses' marketing efforts did not always net the desired result. For example, one physician expressed frustration that he was not informed that his patient was receiving care transition services after a hospital stay. Another physician wanted the ability to use the electronic health record (EHR) system to refer her admitted patients to WyRCT, but is often unaware when patients have been admitted and enrolled in the care transition program. At one hospital, care transition nurses routinely notify PCPs when their patients are discharged, but were concerned that doctors did not always read the notifications. Care transition nurses occasionally attend physicians' visits with their patients and report mixed reactions from the physicians. Although some physicians seek ways to proactively include care transition nurses in their care teams, others express resistance to including outside staff in their patients' care. Anecdotally, physicians become more comfortable with care transition nurses the more they are exposed to the program and the more they feel included in

patients' care. Independent physicians also have many competing demands on their time, further contributing to engagement challenges.

Second, the distribution of HCIA-funded resources has also been a challenge, particularly for the PCMH program. HCIA funding is allocated to participating practices via TransforMED's practice facilitation services, telehealth equipment, and small grants to help pay NCQA application fees; practices receive no direct funding for staff or EHR upgrades. Although physicians appreciate the ability to submit NCQA application documents to TransforMED for feedback, they expressed concern about the lack of direct financial support for practice transformation. To successfully receive NCQA recognition, practices felt that they needed at least one staff member to manage EHR and data-related tasks, such as reviewing registry data to identify patients for outreach and determining how to accurately input and retrieve data for the NCQA application and quality reporting, and most practices lacked resources to dedicate to these activities. Practices also often have to pay fees to their EHR vendors to incorporate necessary functionalities and some practices are transitioning to new EHRs or registries for reasons unrelated to the award, such as mergers with other facilities or outdated systems. These costs can render transformation prohibitive for some practices, especially because clerical tasks are not billable. In contrast, WIPH used HCIA funds to cover the cost of care transition nurse positions, facilitating hospitals' adoption of the WyRCT program.

## **B. Program characteristics**

Two characteristics of WIPH's initiative have influenced program implementation: (1) complex and burdensome paperwork requirements for primary care practices and care transition nurses and (2) a balance between standardization and user control in the WyRCT program.

First, applying for NCQA certification requires practices to submit a large amount of documentation demonstrating their ability to deliver patient-centered care and to use the EHR system effectively. Completing the application process is a complex and time-consuming endeavor and, for some practices, the costs can outweigh the benefits of certification (even though NCQA accreditation leads to higher payments).

The WyRCT program also has extensive documentation requirements: for example, nurses reported having to fill out a total of 21 pages of information for each patient they serve, and many of the data elements are also entered into a spreadsheet. Although the documentation requirements are necessary to maintain consistency and fidelity to the program and are meant to support self-monitoring and facilitate the sharing of information for patients discharged from distant hospitals back to their communities, the care transition nurses said the spreadsheet was prone to errors and difficult to navigate. To try to alleviate this latter problem and help streamline documentation, reduce errors, and facilitate information-sharing, WIPH developed and is piloting CareScope, a patient documentation and data tracking software application that offers structured forms and user controls. The awardee plans to introduce CareScope in all participating hospitals in August 2014.

Second, the care transition program facilitates implementation with a standardized training and care protocol, while still providing nurses flexibility in how they serve their patients. Care transition nurses reported that the standard protocol for patient care—which specifies that they must approach patients in the hospital, call within 48 hours, and make a home visit within a

week—is helpful to direct their work. They also appreciated having autonomy over their on-the-ground approach, such as choosing priority topics for patients’ education. In addition, despite the coverage requirements, nurses also have flexibility in their schedules because they are not restricted to business hours or 8-hour work days. Because the care transition approach emphasizes coaching, mentoring, and educating patients, nurses are instructed not to provide clinical services but rather to teach patients to monitor their own conditions. Some nurses desired more flexibility to provide minimal clinical care, such as taking patients’ blood pressure.

### C. Internal and external factors

Characteristics of the organization implementing a program, and features of the environmental context in which the organization is located, can also influence implementation. Three internal factors affected implementation of the program: (1) motivation for change, (2) clinic and staff capacity, and (3) implementation climate.

First, a facilitator for transforming clinics was their internal motivation for change. Clinics want to provide the best possible care for their patients, recognizing that PCMH processes such as care coordination, team huddles, and telehealth can improve patients’ satisfaction and clinical outcomes. Practices also recognize that health care is shifting toward a quality-based reimbursement system and want to prepare for that transition.

Second, for both the PCMH and WyRCT components, limited capacity, especially limited staff and EHR expertise, hinders implementation. Extracting necessary information from EHRs is difficult without a dedicated staff member and some EHR products lack the functionality to support the programs. Fully staffing the care transition program has also been challenging, largely due to the need to have coverage every day of the week and the requirement that care transition nurses follow-up with patients within 48 hours of discharge. Care transition nurses were allocated to hospitals based on hospital discharge volumes. Although the nurse-to-patient ratios may be reasonable on their own, some hospitals with fewer care transition nurses have a difficult time distributing nurse hours to ensure daily coverage, especially at small hospitals with one or fewer care transition full-time equivalents (FTEs). This also created a recruitment challenge, since nurses often do not want to work seven days per week or less than full time. Three care transition nurses suggested altering the follow-up requirement to 72 hours, but administrators are hesitant to extend the follow-up period, pointing to cases in which 72 hours might have been too long to prevent patients’ emergencies. For example, one patient confused about post-discharge medication instructions was taking an excessive dose of a blood thinner medication and could have suffered a medical emergency if the care transition nurse had not caught the error within 48 hours. In response to staffing challenges, some hospitals are training their nurses who are not HCIA-funded to provide backup support.

Third, primary care practices’ implementation climate was another challenge to transformation, largely due to the competing demands facing many practices. Practices are implementing concurrent programs—such as meaningful use and the physician quality reporting system—and preparing to transition to the *International Classification of Diseases and Related Health Problems*, 10th edition, code system. Furthermore, some clinics are designated as rural health centers or federally qualified health centers (FQHCs), which have unique requirements and billing practices. Practices are struggling to balance all the initiatives. However, two



respondents noted that the PCMH transformation aligns well with their concurrent initiatives, particularly the meaningful use program and FQHC requirements.

Two external factors affect PCMH and WyRCT implementation: (1) payment models and (2) patients' needs and resources. First, both current and future payment models have incentivized PCMH transformation among clinics. NCQA recognition results in opportunities for enhanced Medicare payment and Wyoming's Medicaid is another potential source of enhanced payment for patient-centered care. One clinic already receives payment for care coordination from a large commercial insurer, which will enable the practice to maintain its care coordinator position, currently funded by a local foundation. The care coordinator at this practice manages EHR and registry tasks (such as population management), a role the physician owner described as critical. Clinics and hospitals can also bill for telehealth services, which has motivated some facilities to adopt the telehealth component. After the award ends, hospitals can bill some payers for care transition nurses' services within 30 days of discharge, provided they receive a physician's order.

Second, patients' needs and resources have presented challenges to care transition nurses. The WyRCT program targets an often difficult population in sparsely served communities where resources necessary to meet patients' needs are often unavailable. Patients who live far from discharging hospitals require care transition nurses to travel extensively, placing additional demands on nurses' schedules and compounding the problem of inadequate staffing at some sites. Especially in remote parts of Wyoming, community-based services such as senior housing are often unavailable. Many patients also lack the means to purchase necessary medications or equipment, or lack the motivation to effectively manage their chronic condition(s), despite ample coaching.

## **V. Implementation effectiveness**

In this section, we evaluate the key outcome of our analysis, namely the effectiveness with which WIPH implemented its HCIA program. As part of this qualitative evaluation, we consider three implementation effectiveness measures: (1) timeliness, fidelity, and dosage; (2) program reach and spillover; and (3) sustainability and replicability.

### **A. Timeliness, fidelity, and dosage**

Although the program components have mostly been implemented on schedule, delays have been associated with PCMH recognition and virtual pharmacy. The target date for PCMHs to submit their applications for NCQA recognition is January 2015. PCPs at transforming practices expressed doubt that all participating clinics could meet the requirements of the NCQA application by the end of the award. Two clinics recently notified WIPH that they would not be moving forward with the NCQA application, effectively withdrawing from the program. One clinic cited the facility's transition to a new EHR as its reason for withdrawal and physicians at the second facility decided they did not have the capacity to apply.

Recruitment and enrollment challenges have stalled implementation of the virtual pharmacy program. It faced initial challenges filling the program manager position after the initial manager experienced an unexpected health problem and resigned. Securing contracts with pharmacies and altering pharmacists' workflows has also taken more time than originally anticipated. Even after several clinics and pharmacies had been recruited, patient enrollment has lagged. Because the

University of Wyoming's School of Pharmacy had access to Medicaid claims, it designed the program to target Medicaid patients with certain chronic conditions to facilitate enrollment and evaluation. Enrolling patients requires identifying non-dually eligible Medicaid patients with at least one targeted condition and with a participating PCP. Pharmacists then offer the program to patients; those who accept sign an informed consent enrollment form. These restrictive inclusion criteria have resulted in fewer eligible participants than anticipated and eligible participants often miss appointments or choose not to enroll. Program administrators are considering ways to increase enrollment by expanding the target population and increasing outreach efforts.

In terms of fidelity, all program aspects except the virtual pharmacy program have been implemented according to the operational plan. The virtual pharmacy program was originally designed to offer patients access to distant PCPs at their local pharmacies via telehealth, thus increasing rural patients' access to primary care. However, the initial enrollment period examined Medicaid claims in Casper and Cheyenne and found that most patients in those more urban areas lived fairly close to both their pharmacies and their PCPs. In response, program administrators shifted the focus away from telehealth access and focused instead on recruiting pharmacies, offering medication therapy management to patients at their pharmacies, and sharing information between pharmacists and PCPs. As the program recruits more rural pharmacies, administrators hope to realize their original vision to use telehealth to expand primary care access for rural patients.

One noteworthy element of the WyRCT program design is its dosage, which includes a 90 day post-discharge follow-up period. Unlike similar models which typically provide up to 30 days of care transition service, the awardee designed its program for the rural Wyoming landscape, where patients often live in remote communities. The extended timeframe enables care transition nurses to provide more coaching to patients who need it. One care transition nurse said that about half of her patients requested services for the full 90 days, but this statistic is anecdotal.

## **B. Program reach and spillover**

As a practice-level transformation, all patients can benefit from the improved care processes at transforming primary care clinics, which cumulatively serve about 130,000 patients. Although there is no direct enrollment data on the number of patients served for the PCMH program, the program has recruited twice as many practices as originally projected. As of April 2014, more than 2,400 patients have participated in the WyRCT program, which exceeded target enrollment every quarter since April 2013. Conversely, the virtual pharmacy program enrolled far fewer patients than projected. Under the telehealth program, 18 hospitals are using telehealth and 234 webcams/mobile devices are configured for physicians' use. The medication donation program has filled more than 1,700 prescriptions since January 2013.

WIPH's program has an ambitious, statewide reach considering that the awardee exercises no direct authority over participating entities. Outside of the awardee's expansive reach, we discerned a few spillover effects. One care transition nurse commented that an incident with a patient receiving poor medication instructions at discharge prompted the hospital to improve its policies. She also suggested that the care transition program was an impetus for some physicians to follow up more consistently with hospitalized patients. The program has also had a potential spillover effect on Wyoming payers. The awardee reported that several payers are following the

PCMH initiative and have begun negotiating PCMH incentive payment agreements with participating practices.

### **C. Sustainability and replicability**

Clinics' ability to sustain the PCMH model of care will vary depending on their success in achieving NCQA recognition and/or negotiating enhanced reimbursement fees with payers. All three clinics with which we spoke emphasized the value of routine team huddles and plan on sustaining that practice after the end of the award; two of three clinics explicitly expressed a desire to maintain the overall PCMH approach to care.

Program administrators and hospital representatives are optimistic that some hospitals will sustain the care transition program after the end of the HCIA because of anticipated penalty avoidance from reduced readmissions and potential reimbursement for care transition services. WIPH is currently collecting data to demonstrate the financial benefits to participating hospitals. However, hospitals will make independent decisions to sustain the care transition program based on their own financial analyses; one rural hospital has already expressed doubt that the program is financially sustainable.

Virtual pharmacy administrators are planning to demonstrate cost savings to Wyoming payers in the hope that they will reimburse pharmacists for their enhanced service. Administrators and providers are optimistic that telehealth adoption will continue to grow among physicians and hospitals, especially as more payers offer reimbursement.

## **VI. Perception of program effects**

### **A. Perceived effects on providers**

Providers discussed how the transformation has changed their care processes. Administrators at each of the clinics we visited had begun to integrate team huddles into their daily workflows. Physicians at another clinic said that seeing patients' data prompted them to improve the management of their patients—for example, by identifying patients with diabetes due for a hemoglobin A1c test and proactively scheduling appointments for them to come in for a test. Although physicians said they were pleased with the new processes, they also reported that the PCMH program had increased their workload without a concurrent increase in compensation.

### **B. Perceived effects on patients**

An EHR specialist at one primary care clinic noted an improvement in process-of-care measures, such as scheduled performances of Pap smears and colon and cervical cancer screenings. To fulfill a PCMH requirement, one clinic began offering patients individualized care plans at the end of each visit. Care plans are developed collaboratively with patients and include medication information, treatment goals, and other relevant information that help patients and care teams track patients' conditions and medical progress. Frontline staff believe the care plans will help patients effectively self-manage and achieve their goals. Another clinic administrator noted that patients were pleased by the availability of same-day appointments.

Based on our interviews with program administrators and clinic staff, the care transition program appears to have had the greatest effect on patients' health outcomes. Medication reconciliation—in which nurses review all medications in patients' homes and work with them to organize and understand their medications—has helped patients, who often have several prescriptions from various doctors. According to care transition nurses, even basic education and assistance following hospital discharge can prevent unnecessary readmissions. For example, one nurse explained that a patient did not know to plug in his oxygen tank until the care transition nurse arrived. Connecting patients to other services, such as home health and hospice, also facilitates continuity of care. One administrator reported that patients are satisfied with the care transition services they receive.

Physicians and administrators also discussed the benefits of telehealth, particularly expanding access to behavioral health consultations. In Wyoming, where patients often live long distances from providers and travel is often limited due to inclement weather, telehealth facilitates patients' ability to receive care. The telehealth program has expanded access for patients in physicians' offices and hospitals; however, the awardee has not yet incorporated telehealth into pharmacies.

## **VII. Conclusions**

WIPH is working with a broad array of community partners to create medical neighborhoods across a large, sparsely populated state. The goal of transforming the delivery of medical care throughout the state, combined with the lack of direct control over its practice organizations and community partners, create a set of implementation challenges unique to this program. Despite the challenges for clinics participating in the practice transformation program, largely stemming from limited resources and complex data/reporting requirements, clinics support the goal of patient-centered care and recognize potential benefits of the program. Although achieving Level 3 NCQA recognition might not be feasible for all participating clinics (given their capacity when they began the program), the practice facilitation process appears to have improved care processes, moving practices closer to a fully operational PCMH model. Care transition nurses also reported that their efforts to coach and assist chronically ill patients after discharge have resulted in fewer readmissions and emergency department visits because patients have become more activated and educated about how to self-manage their care and because of fewer medication errors. However, program administrators have to think carefully about how to staff the care transition program to facilitate staff recruitment and retention, particularly in small hospitals with relatively few discharges. Program administrators will continue to work with remaining practices toward the goal of transitioning them into NCQA-recognized PCMHs and to enable hospitals to permanently offer care transition assistance to discharged patients.

### III. CROSS-AWARDEE SYNTHESIS OF FINDINGS

#### A. Introduction

In this chapter, we provide a summary of the findings from a cross-cutting analysis of the implementation experience of the 14 PCR programs presented in the previous chapter. Our objective is to provide CMMI with a synthesis of the primary determinants of implementation effectiveness across different program settings and contexts. Our intent is to provide CMMI with an initial users’ manual based on nearly two years of implementation experience that other organizations interested in improving the delivery of primary care can use to design and implement their own practice transformation strategies. Issues covered in this chapter include the primary and contributory components of primary care transformation initiatives (Section B), the underlying design features or characteristics of PCR programs (Section C), the facilitators and barriers commonly encountered during the implementation process (Section D), the internal and external factors that can influence implementation effectiveness (Section E), and the special workforce issues that organizations need to consider when implementing primary care transformation strategies (Section F). At the end, we provide a brief description of our implementation evaluation plans during the coming years (Section G). Table III.1 lists the names of the 14 programs and the abbreviations used in this chapter.

**Table III.1. List of PCR awardees and their abbreviation**

Awardee name	Abbreviation
Atlantic General Hospital	AGH
CareFirst Blue Cross Blue Shield	CareFirst
Cooper University Hospital and Camden Coalition of Health Care Providers	CUH
Denver Health and Hospital Authority	Denver Health
Finger Lakes Health Systems Agency	FLHSA
Foundation for California Community Colleges and the Transitions Clinic Network	TCN
Pacific Business Group on Health	PBGH
PeaceHealth Ketchikan Medical Center	PeaceHealth
Research Institute at Nationwide Children’s Hospital	NCH
Rutgers Center for State Health Policy	CSHP
Sanford Health	Sanford Health
TransforMED	TransforMED
University Hospitals of Cleveland Rainbow Babies and Children’s Hospital	UHC
Wyoming Institute of Population Health, a division of Cheyenne Regional Medical Center	WIPH

#### B. Primary and contributory components of primary care transformation

**The 14 primary care transformation programs funded under HCIA varied widely in the strategies they used to transform the delivery of primary care, but all programs shared some combination of four core and five contributory components.** The four core components were (1) care management, (2) care coordination, (3) transitional care, and (4) patient-centered

care. Depending on the goals and needs of the program, five additional components helped support improved care coordination and management: (1) health IT, (2) integrated care teams, (3) risk stratification, (4) payment reform, and (5) workflow or process redesign. These core and contributory components overlap considerably and in practice were operationalized in diverse ways. We describe the primary and contributory components of primary care transformation in Table III.2 and provide a detailed description of each one, with examples from the awardees, in the following section.

**Table III.2. Primary and contributory components of primary care transformation**

Innovation component	Number of awardees	Description of component
<b>Primary components</b>		
Care management	14	Interaction with patients directly to assist them in managing their medical, social, and mental health conditions more effectively
Care coordination	13	Deliberate organization of patient care activities and sharing information among stakeholders involved with a patients' care
Transitional care	10	Customized planning to ensure the coordination and continuity of care as patients transfer between settings, such as from the hospital to home
Patient-centered care	10	Care that responds to patients' needs, desires, and abilities and ensures that patients' values guide clinical decisions
<b>Contributory components</b>		
Health IT	10	Development, deployment, or enhancement of health information systems to improve coordination and management of patients' care
Integrated care teams	8	Use of a range of staff to provide personalized guidance to patients as they move through the health care system and to providers as they work to coordinate care for complex patients
Risk stratification	4	Use of clinical information to identify patients with complex or unmet health care needs at risk for deterioration in health and unnecessary use of inpatient or emergency department services
Payment reform	3	Implementation of new reimbursement methods that incentivize quality care and increase sustainability of new care processes
Workflow redesign	2	Intentional efforts to change care processes to improve primary care, such as incorporating team huddles and quality improvement efforts

Sources: Review of program documents and interviews with program administrators, May 2014. See McDonald et al. (2007) for definitions of care coordination, Mechanic (2004) for care management, Coleman et al. (2003) for care transitions, and IOM (2012) for patient-centered care.

### 1. Core components of primary care transformation

**Care management involved direct interaction with patients to assist them in managing their medical and nonmedical conditions effectively.** For example, care management services helped patients understand how to navigate health and social service systems, self-manage their conditions, and overcome nonmedical barriers to obtaining and remaining in care. All 14 awardees have implemented some form of care management intervention, including developing and refining care plans, monitoring chronic conditions, educating patients and caregivers, and

connecting patients to medical and social services. For example, UHC, a hospital-based program in an urban setting, worked with families of children with complex chronic conditions to develop customized care plans and shared these plans with the children's primary care providers.

In addition, care managers offered patients disease management education, and emotional support for making lifestyle changes. For example, PBGH, a nonprofit business coalition that offers practice facilitation to 20 medical groups, used care managers to assess patients' medical, behavioral, social, and mental health conditions and to develop patient-driven action plans. Several other awardees also focused care management on social and behavioral barriers, such as food and housing insecurity, lack of transportation, mental health disorders, and substance abuse.

**Programs used care management to deliberately organize patient care activities and information-sharing among providers and other stakeholders involved with patient care.**

All but one awardee implemented some form of care coordination intervention to streamline communication within practices and across providers, to identify and fill gaps in care, and to prioritize care for patients with immediate or complex needs. Practices were often guided by patient-centered medical home (PCMH) principles. For example, CareFirst, a large health insurer with experience in and the capacity for practice transformation, expanded its commercial PCMH program to its Medicare population, effectively providing expanded access to registered nurse care coordinators. These nurses reached out weekly to high-risk patients to coordinate their care across caregivers, which could include other primary care providers, the patient's family and/or caregiver(s), and other specialists and providers as designated in their care plans. FLHSA—a community health planning organization—provided practices with guidance on internal processes and the integration of care coordinators to conduct follow-up with patients, help set patients' goals, and interface with all of a patient's providers.

**Transitional care involved customized planning to ensure the coordination and continuity of health care as patients transferred between different settings, particularly from the hospital to home.** Transitional care generally consisted of transition planning support, comprehensive medication review and reconciliation, counseling and/or other self-management support, communication with patients' families and/or informal caregivers, assistance to ensure productive and timely interactions between patients and providers, and information to help patients identify additional health problems or deteriorating conditions. Transitional care often included a pre-discharge hospital visit, an in-home visit after discharge, and telephone or in-person follow-up contact for several weeks or months, depending on the model of transitional care and the patient's needs.

Ten awardees targeted patients during periods of transition from the hospital to home. For example, care teams at AGH—a community-based health care system—focused on patients' needs in the first 30 days after discharge, such as medication reconciliation, transportation, and follow-up care. PeaceHealth obtained lists of patients discharged from the local hospital and employed care coordinators in its two participating clinics to follow up with patients by telephone and assess their transitional care needs. If necessary, the care coordinators scheduled a clinic appointment and followed up directly with the patient's primary care provider. WIPH worked through nurses employed by hospital partners to offer transitional care services to eligible patients being discharged, including in-home services. Transitional care staff also could identify patients' primary care providers and notify them about important transitional care issues.

**Patient-centered care was responsive to patients' needs and values.** Ten awardees implemented components designed to improve the patient-centeredness of their primary care. Designated care team members such as patient navigators were often primarily responsible for engaging patients and building relationships. Programs that targeted specific populations employed people with similar experiences who provided personalized support. For example, the TCN employed formerly incarcerated community health workers who provided navigational assistance and personal guidance to formerly incarcerated patients. NCH trained parents of people with mental disabilities to offer peer support to other parents of patients with mental disabilities.

For many programs, patient-centeredness referred to processes that affect all patients, such as offering same-day appointments and placing patients in a single exam room where they can visit with multiple clinicians and ancillary personnel. Furthermore, programs used patient activation techniques, especially motivational interviewing, to help patients learn to self-manage their conditions, set goals, and organize their care among medical and behavioral health providers. Many health coaches and transitional specialists provided services in patients' homes, a convenience for patients and an opportunity to identify challenges that might not be visible in clinical environments. For example, WIPH's care transitions nurses visited recently discharged seniors at home and offered medication reconciliation; they reported that this prevented readmissions.

## **2. Components that contributed to the transformation of primary care**

Awardees in the PCR group frequently used one or more of five additional components to support improvements in patient-centered care, care coordination, care management, and transitional care: (1) health IT, (2) integrated care teams, (3) risk stratification, (4) payment reform, and (5) workflow or process redesign. (Please see Table II.1 for a list of the components deployed by each awardee.)

**Health IT was a critical tool that awardees learned to leverage to improve the provision of primary care.** Health IT helped program staff to quickly understand patients' needs and rectify gaps in care, particularly when caseloads were high or when patients interacted with many different staff members in the course of care. Although 10 awardees cited health IT as a program component, almost all used it to facilitate care coordination and care management. For example, CSHP and CUH adapted information systems to enhance their ability to identify potentially eligible patients and to track existing patients. Sanford Health's health coaches reviewed EHRs for daily pre-appointment planning and panel managers reviewed registries to identify patients for outreach and follow-up care. Care coordinators used health IT to facilitate care among several providers, such as by sharing patients' records. Awardees also used health IT in direct patient interactions, such as hosting telehealth consultations with remote behavioral health specialists (WIPH), sending text message reminders to patients between visits (Denver Health), and providing patients with blood pressure cuffs and scales that transmit vital signs taken remotely to the EHR (Sanford Health).

**Programs used integrated teams of clinical and nonclinical staff from various disciplines to identify and address a range of medical, behavioral, and social needs.** Eight awardees had created integrated teams of clinicians that often relied on physicians, nurse practitioners, or physician assistants to manage medical care; registered nurses for reconciling



medications and developing care plans; social workers for identifying social and behavioral health needs and referring patients to appropriate resources; nonlicensed staff to advocate for patients and assist with care coordination and care management; and medical assistants and administrative staff to review patients' records and identify and notify patients to schedule a visit for necessary tests and procedures. Some teams met regularly to discuss upcoming cases, order previsit lab work, and review reports on patients whose chronic conditions were not in control or who were not in compliance with care guidelines. In other cases, providers and care coordinators met informally as needs arose. Characteristics of effective care teams included clearly defined staff member roles, encouragement of regular communication between providers and ancillary staff, designation of a physical space for care coordinators that is close to providers' offices, preparation and review of standardized patient reports, promotion of relationship-building between existing and new staff, and staff education on the role of each member and the value of the model to patients.

**Four programs used risk stratification to identify patients with complex conditions and high utilization patterns and to target them for higher-intensity services.** Awardees used claims data, EHR data, and physician referrals to identify and target frequent users, reasoning that these patients were responsible for the majority of unnecessary medical costs. Varying the level of service intensity based on the complexity of a patient's conditions helped programs to reach more patients and provide them with appropriate, cost-effective care. Denver Health, for example, stratified enrollees into four tiers based on their risk of physical and behavioral health issues and their utilization history, and assigned each tier to an appropriate level of intervention support. CareFirst used claims-based illness burden scores to identify high-risk patients who might benefit from additional care coordination services.

**Four programs incorporated payment reforms to properly incentivize and reimburse new care processes and personnel.** Many awardees said that implementing care coordination and care management interventions—which often required the provision of nonreimbursable services by staff who were not permitted to bill in a fee-for-service (FFS) environment—was one of the main challenges to transforming the delivery of primary care. CareFirst, a private health insurer, expanded its PCMH model to include Medicare patients, harmonizing the payment methods of the region's two largest payers. FLHSA, a health planning organization, convened local payers to develop and implement a communitywide payment model to facilitate sustainability of its PCMHs. UHC developed an accountable care organization (ACO) infrastructure that enabled it to negotiate incentive payments with Medicaid managed care organizations.

**Finally, three programs specifically identified redesigning workflows and care processes as main components, but all programs modified their processes in various ways to improve primary care.** Changing the way primary care providers and their teams provide care was an iterative process with some common elements, such as implementing team huddles and completing pre-appointment planning. The National Committee for Quality Assurance (NCQA) PCMH application often guides workflow redesign efforts. For example, FLHSA, which has worked to transform practices into PCMHs, incorporated practice improvement advisors who teach staff to use data for quality improvement efforts, such as decreasing patients' wait times and creating communication pathways.

**C. Key design features associated with effective PCR programs**

The factors of a program and its individual components were a critical determinant of implementation effectiveness, as they can facilitate or challenge program implementation. Three common program factors emerged as important drivers of implementation effectiveness: (1) adaptability of the programs to overcome implementation challenges, (2) control given to frontline staff during implementation to maximize program effectiveness, and (3) relative advantage of the programs compared with the standard delivery of care. Next, we discuss each factor in detail and provide examples from the 14 programs. Table III.3 describes each of these program-related factors and their importance in promoting implementation effectiveness.

**Table III.3. Summary of key program design factors associated with effective implementation of PCR innovations**

Design factors	Description of factor	Importance of program design factor for effective implementation
1. Adaptability	The interventions can be adapted or tailored to meet the overall needs of the program. Adaptability relies on the ability to define the intervention’s core components that cannot be adapted versus the peripheral elements that can be more readily adapted.	Program adaptations facilitated increasing or narrowing patient enrollment, enhancing patient-centeredness, and aligning the program with the organizational structure of implementation sites and meeting staff needs.
2. User control	Frontline staff were empowered to troubleshoot implementation challenges on their own and modify the application of program components in practice.	Giving frontline staff autonomy facilitated meeting patients’ needs, modifying staff roles and workflows, and troubleshooting implementation challenges.
3. Perceived relative advantage	Stakeholders perceive advantages of implementing the program versus an alternate solution, or the standard delivery of care. A perceived relative advantage characterized the extent to which the innovation was perceived to provide an advantage for improving care and health or reducing costs relative to the status quo or other alternative innovations that were considered.	Perceived relative advantages include fulfilling unmet needs for specific populations, building relationships to meet the needs of high-risk patients with complex conditions, and increasing the efficiency of patients’ visits.

Sources: Review of program documents and interviews with program administrators, May 2014.

**1. The adaptability of program components of the PCR intervention to the local context is critical to overcoming implementation challenges and maximizing implementation effectiveness.**

Because awardees were encouraged to innovate and adapt their programs to increase implementation effectiveness, program adaptations were common across awardees. The four principal adaptations related to (1) patient eligibility requirements, (2) patient referral sources, (3) patients’ needs, and (4) program workflows.

First, several programs adapted their patient eligibility requirements by expanding disease categories to increase the reach of the program, whereas others narrowed their eligibility criteria to enroll only those patients who would most benefit from intervention services. For example, AGH expanded its disease categories (from diabetes, chronic obstructive pulmonary disease, and chronic heart failure) to include all diagnoses that would benefit from PCMH-based services. This expansion helped AGH exceed its March 2014 enrollment target, including about half of all

enrolled patients with the original targeted diagnoses and the remaining patients with other chronic conditions, such as hypertension and obesity. PeaceHealth narrowed the focus of its transitional care program (from all patients discharged from the medical center) to only those with diabetes or chronic heart failure. PeaceHealth also shifted the focus of its care coordination program from smoking cessation to diabetes education because care coordinators realized that patients already receive antismoking education and patients with diabetes often have an incomplete understanding of their disease.

Second, program administrators adapted patient referral sources to enroll patients who would most benefit from intervention services. Some program administrators made adaptations to patient referral sources by developing tools for identifying eligible patients. For example, AGH developed a high-utilization surveillance program to identify patients who might not be identified through physician referrals. Other programs began relying on clinician judgment to identify eligible patients. For example, CareFirst adapted its program to allow care coordinators to determine patients who would most benefit from transitional care services and to permit primary care providers to assess which patients would most benefit from having a care plan, based on their understanding of patients' medical and social needs. PBGH also adapted its patient enrollment process (which was initially based on the use of patients' risk scores) to allow primary care providers to judge which patients were appropriate for the program. This method also enabled primary care providers to provide care managers information about each patient's condition, thereby increasing care managers' ability to engage patients and determine how to use program services to address their needs.

Third, program administrators adapted their interventions to better meet the needs of their participants after enrollment. For example, AGH developed the Keeping in Touch program to meet the needs of patients who no longer required care coordination services, but would benefit from less intensive follow-up care to manage their health conditions. A few of the CSHP sites and CUH lengthened their interventions to extend beyond the planned 60 to 90 days to prepare patients for successful transitions out of the program and to increase their ability to self-manage their conditions.

Fourth, program administrators made several adaptations to align intervention services with their organizational structures and staffing needs, particularly among programs with multiple implementing sites. Before implementing the HCIA-funded intervention, one of the TCN sites had a program that served formerly incarcerated patients. Rather than dedicating specific clinic hours to providing transitional care to these patients, as stipulated in the program guidelines, the site decided to provide transitional care as part of its existing integrated program. Adaptations to program staff roles have also facilitated implementation effectiveness. For example, Sanford Health developed the role of regional integrator to promote practice transformation in its participating sites. The regional integrators were responsible for identifying a core team in each site and serving as liaisons between the program administrators and the core team to incorporate new program workflows into individual practices. Program administrators at Sanford Health also developed the role of the panel manager to assume from health coaches the responsibility for organizing data and developing program reports. The shift in duties enabled health coaches to work closer to the top of their licensure, thereby increasing program effectiveness.

**2. Giving frontline staff control over how they implement the intervention to meet individual patient needs, define staff roles and practice workflows, and address implementation challenges was an important facilitator in implementing PCR programs.**

Giving frontline staff the ability to address challenges as they arise during implementation was important for PCR programs, because individual patients have various needs and respond differently to services. Three types of adaptation were important: (1) having the ability to customize the type of services provided, (2) having the flexibility to modify the intensity or duration of services for individual patients, and (3) having the authority to prioritize and overcome implementation challenges. First, several programs reported matching the skills of their staff to the specific needs of individual patients. In the UHC, CSHP, PBGH, and PeaceHealth programs, frontline staff described working with certain types of patients based on the staff member's level of experience addressing the patient's individual needs, such as cultural expectations or obtaining certain social services. Staff believed that being familiar with patients' situations helped them to engage patients and provide care more effectively. Staff reported that being able to tailor services to patients' needs helped to improve the quality of care they delivered and improved patients' outcomes.

Second, frontline staff in several programs also had the autonomy to modify the intensity or duration of care to meet the needs of individual patients. For example, although frontline staff in the CSHP program were required to visit each enrolled patient at least once per month, they could schedule more frequent visits to patients with greater needs. As a result, staff believed they could manage their caseloads more effectively. Similarly, frontline staff in the Denver Health and UHC programs were empowered to test different appointment time frames, follow-up modes, and schedules to meet the needs of individual patients. In the CUH program, frontline staff could amend individual care plans to accommodate changes in patients' circumstances and goals. They believed this flexibility enabled them to engage patients and help them progress toward their stated goals.

Finally, several program administrators gave frontline staff the freedom to prioritize implementation issues based on factors in their implementing practices. Consultants with the CareFirst program worked with physician panels to prioritize practice transformation strategies that aligned with practice needs and internal technical capabilities. Clinics participating in the Sanford Health program had varying resources and capacities, and frontline staff were able to tailor program workflows to align with their clinic's physical layout, staffing schedules, and personnel resources. Frontline staff in other programs described working together to determine how to effectively divide and share their responsibilities within the program.

**3. The perceived relative advantage of PCR models over traditional delivery systems for primary care was a critical determinant for overcoming frontline staff's resistance to adopting new practices and increasing their motivation for program implementation.**

A critical determinant for overcoming stakeholders' resistance and increasing their motivation for program implementation was the perceived relative advantage of PCR programs over the standard delivery of care. Across programs, respondents at all levels perceived their respective PCR programs to have two advantages over the standard delivery of patient care; (1)

fulfilling previously unmet needs for specific populations and (2) organizing disparate patient information before scheduled visits.

First, respondents perceived the programs to have a relative advantage over the standard delivery of care because previously unmet patient needs were met for specific populations, particularly high-risk patients. Respondents in several programs (including FLHSA, PBGH, and UHC) discussed the advantages of implementing a staffing structure that enabled ancillary providers (such as nurse care managers, social workers, or community health workers) to provide more patient-centered care than the standard care delivered to high-risk patients. Program administrators, providers, and ancillary providers identified the role of the ancillary provider as being advantageous for developing relationships with patients, building trust between patients and clinicians, and understanding and meeting individual patients' needs. Respondents perceived advantages in providing patients with a single point of contact to assist them in understanding their medical conditions, medications, appointments, discharge instructions, community resources, and social supports. Ancillary providers in the CUH and CSHP programs described empowering their patients to proactively interact with providers rather than passively accept information, as their patients had done before program implementation.

Second, frontline staff also described the relative advantage of PCR programs over standard models of care resulting from the increased efficiency of patients' visits. In several programs (including CSHP, CUH, and PBGH), ancillary providers described the advantages of checking in with patients between medical appointments to share information and address issues that do not require the primary care provider's involvement, such as medication management or patient education. Ancillary providers in the TransforMED program perceived advantages in being able to remind patients about their needed services, such as lab work or diagnostic tests, which they did not do before implementing the program. In the PeaceHealth program, the ancillary providers ensured that test results were available for the provider to review before the patient's visit. Ensuring the completion of lab work and diagnostic tests before medical visits reduced the time that providers spent during visits reminding patients about the services they need.

The perceived relative advantage among providers was an important factor for obtaining their buy-in and increasing their willingness to integrate ancillary staff into their daily practice patterns before and after a regular patient visit. Programs that were able to convince clinicians of the potential benefits of the intervention faced less resistance to practice transformation than those that were less effective at changing providers' attitudes and beliefs.

#### **D. Process-related factors that were important drivers of implementation effectiveness**

The way in which a primary care innovation was implemented was an important determinant of program effectiveness. Process-related factors were often defined, operationalized, and refined during the early phase of program implementation. A review of the implementation experiences of the 14 PCR programs identified four common process-related factors as important drivers of implementation effectiveness: (1) engaging program personnel to promote staff buy-in; (2) engaging community stakeholders to expand and coordinate services and increase program enrollment; (3) ensuring that the program had sufficient resources to achieve its goals, most notably the ability to hire additional staff to coordinate and manage care; and (4) collecting and

analyzing self-monitoring data to refine operational plans. Table III.4 describes these four process-related factors and their importance in promoting implementation effectiveness. We discuss each factor in detail and provide examples from the awardees funded under the PCR initiative, in the following section.

**Table III.4. Summary of key process-related factors associated with effective implementation of PCR innovations**

<b>Implementation factor</b>	<b>Description of implementation process factor</b>	<b>Importance of process factors for effective implementation</b>
1. Staff engagement	Involved attracting and including appropriate people in the implementation and use of the intervention	Establishes trust so that clinicians refer to care coordinators and team members work together in an integrated way
2. Stakeholder engagement	Involved attracting people not directly staffed on the program, but important for effective program implementation	Ensures that community members are aware of a program’s services and can refer eligible patients to the program; avoids duplication of services in the community
3. Program resources	The extent to which resources were dedicated to implementing the innovation; including physical space and equipment, general and health IT, and staff time	Funds new staff (often care coordinators) to reduce burden on busy clinicians
4. Self-monitoring	Reflecting and evaluating using quantitative and qualitative feedback about the progress and quality of the implementation	Integrates data into performance-monitoring approach to improve efficiency of operations and progress toward the program’s goals

Sources: Review of program documents and interviews with program administrators, May 2014.

**1. Engaging and obtaining buy-in from clinicians and other frontline clinical and nonclinical staff were critical to effective program implementation.**

Effective program implementation relied on engaged clinicians and care coordinators who communicated well and worked together to deliver intervention services. For example, CareFirst emphasized this aspect in its program design, selecting 14 of the most engaged physician panels from its commercial program of more than 400 panels to participate in the HCIA initiative. CareFirst indicated that a high level of engagement and commitment among its participating primary care providers was fundamental to its implementation success. Many HCIA program administrators acknowledged that it took time to develop trust among frontline staff and ensure that referring providers had a strong understanding of the intervention model; the administrators emphasized that programs must actively engage their participating clinicians to ensure that they understand how changes in care delivery will benefit their patients. Programs stated that a greater understanding of the intervention and building trust with the team made clinicians more comfortable referring patients to care coordinators, behavioral health triage therapists, transitional care nurses, and social workers.

Although engaging clinicians and frontline staff was a challenging and ongoing process, program administrators employed four main strategies to obtain buy-in: (1) integrating new support staff into clinical care teams, (2) educating existing clinicians about the role of newly hired care team members, (3) using incentive awards, and (4) training staff about the new model of care. First, programs integrated care coordinators and other support staff into existing clinical care teams so that providers became familiar with the services they offered and viewed them as

part of the clinical team. When care managers at PBGH were integrated into the clinical team and built trust with primary care providers by consistently providing quality care to high-risk patients, primary care providers became more willing to refer patients to the program.

Second, several programs educated clinicians through written materials or regular meetings about the services provided by care coordinators. The PeaceHealth social worker created a pamphlet to explain her role to providers and the program manager attended provider meetings to clarify the role of the care coordinators, emphasizing how they could reduce their burden and improve patients' care. Several programs also used a data-driven approach to education and outreach efforts. CareFirst used program consultants to engage providers each quarter by identifying data trends in service use and developing strategies to achieve better health outcomes and cost savings.

Third, some programs used incentives to motivate staff. For example, a care manager at FLHSA implemented a gift card drawing to improve attendance at daily team huddles. CareFirst used incentive payments to reward physicians who generated cost savings and achieved quality targets. Fourth, several programs engaged staff primarily through trainings. Sanford Health used its HCIA funds to develop a series of program-related trainings, which staff at all levels were required to attend, to promote understanding and buy-in. Sanford created a core team at each clinic to share experiences and feedback on a regular basis, which one respondent described as "change management" to reinforce the new model of care.

## **2. PCR programs often collaborated with community stakeholders to increase intervention awareness, augment patient referrals, and improve access to and coordination of community-based services; to facilitate stakeholder engagement, programs used ongoing communication, data-sharing, and outreach strategies.**

Most awardees engaged external stakeholders—including hospitals, post-acute care facilities, social service organizations, primary care offices, and other community-based organizations—in their programs. Programs actively fostered relationships with external stakeholders to ensure they were aware of the intervention services and, in turn, community partners would refer eligible patients to the program. Care coordinators also communicated with community-based organizations to help coordinate services for their patients, while avoiding duplication of services. For example, TCN health workers reached out to community stakeholders to identify formerly incarcerated people in need of medical care and connect them with available services and resources, such as mental health and substance abuse treatment. CUH staff leveraged their relationships in the community to obtain services—such as housing referrals, specialist appointments, or durable medical equipment—more quickly than they otherwise would have, thereby increasing participants' access to needed services.

Programs have used several strategies to engage community stakeholders, each of which stressed constant communication with external partners. Several programs conducted active outreach activities to engage external stakeholders. For example, every other month, CUH staff hosted an in-person open house for people in the community to learn more about their program. UHC employed several concurrent strategies to engage a broad group of stakeholders, including meetings with program administrators, direct practice facilitation, a quality- and process-based incentive plan, provider advisory group meetings, and continuing medical education events. CUH also used its health information exchange as a way to build and strengthen collaborations

with community-based providers, sharing data with local hospitals, post-acute care facilities, and primary care offices to engage them and boost their patient identification and enrollment processes.

**3. Effective PCR programs invested significant resources in several key areas for program implementation, most notably, adding staff to provide or expand care management and care coordination services.**

All programs dedicated resources to hire additional staff to coordinate and manage patients' care, supporting busy primary care clinicians who otherwise would not have had time to perform these activities. Investment of program resources in new staff hiring was particularly important in an FFS environment in which care management and care coordination activities were often not reimbursable. Several programs—including CUH, Denver Health, and PeaceHealth—hired new staff to address patients' psychosocial needs and their nonmedical barriers to care (such as transportation, housing, or financial assistance) so that physicians and nonphysician clinicians could more appropriately focus on providing clinical care. Programs noted that these new staff positions were particularly important when working with high-risk or frequent-use populations. One PeaceHealth clinic staffer noted that the additional staff enabled it to extend its office hours, thereby increasing patients' access.

Awardees also used program resources to provide physical space for care coordinators, assistance from administrative staff, and training materials and support. Several programs used funds to provide nearby offices for their care coordinators, which helped to promote integration and communication among staff. For example, AGH co-located its Worcester County Health Department program staff with the PCMH team, which facilitated communication and coordination among staff. In addition, programs dedicated resources to administrative support, such as clerical tasks and grants management. CUH administrators noted that they initially underestimated the time required for program and grant management activities, and that HCIA funds did not fully support the administrative expense of the program.

Finally, programs dedicated HCIA resources to fund training programs, such as Sanford Health's comprehensive learning program. Sanford used HCIA funds to develop and purchase training curricula, compensate staff for time spent in training, fully or partially fund team members' salaries, and purchase add-on software to its EHR system to produce special patient monitoring reports. They noted that it was particularly important to dedicate resources to compensate clinicians for time spent in training or other implementation activities in a busy FFS environment.

**4. The internal collection and analysis of data to monitor and evaluate program performance improved program operations and facilitated the communication of progress toward meeting program goals among staff and stakeholders.**

Several awardees integrated self-monitoring data into their programs, providing performance feedback on a regular basis and adjusting their operational plans or intervention models as needed. Awardees collected a range of quality-of-care process and outcome measures, including patient enrollment, hospitalization admissions and readmissions, ED visits, total costs, and number of care team hours spent treating patients. A few programs also created dashboards to track several metrics and provide formative feedback for ongoing program improvement.



UHC's dashboard, for example, indicated whether families scheduled and attended follow-up appointments. These processes will inform a more formal quality improvement process in the future. CUH's dashboard tracked patient enrollment and the number of enrollees who followed up with their primary care providers within seven days of hospital discharge and prioritized daily staff activities based on the information.

Several programs addressed the challenges of incorporating data into primary care settings by training users to use the new data systems and emphasizing the importance of effectively incorporating data into program implementation. Several programs trained frontline users to operate the new data systems (such as EHR systems and program-specific data collection instruments) and to enter the data properly. TCN clinic staff were initially unfamiliar with their online data platform and required additional training to collect baseline data correctly. In addition, several HCIA program administrators noted the importance of understanding the reason for collecting data for ongoing performance improvements and receiving complete and accurate data. HCIA program administrators explained that clinicians and frontline staff benefitted from developing an understanding and appreciation of the need for self-monitoring data to inform program implementation and progress because these data had not traditionally been used to provide clinical care.

#### **E. Common environmental factors that can facilitate or impede implementation effectiveness**

The characteristics of the organization implementing a program and the features of the environmental context within which an organization operates can facilitate or impede program implementation. Programs had only limited influence in the short run on environmental factors that were internal or external to their organizations. However, program administrators and staff took steps to help maximize the facilitators and minimize the barriers presented to program implementation by environmental factors. The relevant environmental factors were also important for policymakers to understand when thinking about expansion. The four most common environmental factors that either facilitated or impeded program implementation were (1) leadership of practice and organization administrators, (2) prior experience implementing similar programs for similar populations, (3) the needs of patients with complex conditions and limited patient and community resources, and (4) external payment systems. Table III.5 describes these four environmental factors and their importance to implementation effectiveness. We discuss each factor in detail, and provide examples from the awardees funded under the PCR initiative, in the following section.

**Table III.5. Summary of environmental factors that can facilitate or impede effective implementation of primary care redesign innovations**

Environmental factors	Description of environmental factor	Importance of environmental factor for effective implementation
1. Leadership	The extent to which organizational and practice leaders who were not directing the program affected implementation through support and leadership style	Primary care practice and organization leaders promoted transformation by allowing frontline staff to innovate and displaying commitment to improving the care of target populations.
2. Prior experience	Practices' and organizations' experiences with similar interventions within the setting or with the target population	Programs promoted success by expanding existing small programs, building larger programs around existing smaller interventions, or using experienced practices or organizations to mentor less experienced ones.
3. Patients' needs and resources	The extent to which the needs and preferences of the target patient population affected implementation	Programs had to continually adapt to meet the complex medical and social needs of many target populations.
4. Payment system	The extent to which external payment models from private and public payers affected implementation	Practice transformation was supported by FFS for new interventions and newer payment models, such as shared-savings arrangements and capitated payments.

Sources: Review of program documents and interviews with program administrators, May 2014.

**1. Active support and commitment from practice, organization, and corporate leaders was critical to implementing practice transformation.**

The levels of engagement and active support from practice and organization leaders were key drivers to the implementation of PCR programs. For programs that engaged primary care practices directly, the engagement of a leader within the practice—a practice champion—was important for obtaining buy-in from providers and staff. For instance, in CareFirst’s program, practice leaders motivated primary care physicians to increase their engagement with the care planning process. AGH, Denver Health, and FLHSA described similar experiences.

Leadership style also played a key role in provider and staff engagement. Effective leadership in practice transformation often entailed soliciting and being receptive to feedback from frontline staff or program administrators, allowing frontline staff to be innovative and tailor the intervention protocols to the needs of their patients, and displaying a clear and consistent commitment to improving the care of target populations. In the PBGH program, practice administrators described their organizations as innovative and their leadership as willing to take risks to improve patient care. Similarly, hospital executives in the NCH program were willing to allow for trial and error in the program and helped implementation by prioritizing program needs, such as modifications to the hospital’s EHR system. Program administrators fostered support from hospital executives by explaining the need to make improvements based on data and by having project goals that aligned with the hospital’s financial incentives.

**2. Programs increased the likelihood of implementation success by replicating similar or related work.**

Programs increased their chances of effective implementation by building on practices' and organizations' prior experiences working with target populations or implementing similar interventions. Several awardees implemented expansions of existing small-scale or pilot versions of their program, which enabled them to build on the experiences of staff and existing infrastructure. For example, AGH, CareFirst, and Sanford Health had prior experience implementing the PCMH model in a few practices or with a less complex patient population. This experience enabled them to refine existing care processes (such as risk stratification) and add new services that were found to be important but not included in their prior interventions (such as transitional care and health coaches). UHC had experience implementing only two of its program components (practice facilitation and telephone triage), but program administrators used these early experiences to build a broader program for primary care quality improvement and cost reduction. Programs also used experienced practices or organizations as mentors for their less experienced counterparts. For example, NCH leads one of the oldest and largest pediatric ACOs in the country and, through its HCIA award, mentored Akron Children's Hospital in the development of its own ACO.

**3. The complex and often unexpected medical, mental health, and social service needs of many targeted high-risk populations impeded implementation and required program administrators and staff to frequently adapt program processes and reevaluate program goals.**

Many awardees created their programs specifically to address the complex medical and social needs of their target populations. For example, the TCN program targeted people recently released from prison, the WIPH and PeaceHealth programs included many patients in rural and frontier areas, and the NCH program targeted publicly insured children with complex needs such as feeding tubes or severe mental illness. However, many programs had to continually adapt their interventions to meet their patients' unexpected medical, behavioral, and social service needs. In the CareFirst and UHC programs, the development of care plans for enrollees took more time than program leaders expected due to the complexity of patients' needs. Program administrators responded by revising enrollment goals and evaluating the level and skill mix of care coordination staff required to meet the identified needs.

Many programs faced limited community resources to address their enrollees' social needs, such as unstable housing, lack of transportation, immigration status, and distant location. These programs used a variety of strategies to address these implementation challenges, including embedding social workers in primary care and care coordination teams (Denver Health, FLHSA, PeaceHealth, NCH, and UHC); using community health workers and trained peers familiar with community resources (TCN, FLHSA, and NCH); and providing care through telehealth services (NCH, UHC, and WIPH).

**4. The recent shift in health care payment systems and incentives away from FFS and in favor of value-based purchasing among public and private payers created new opportunities to support and sustain many common practice transformation strategies.**

The traditional FFS payment system generally did not reimburse for the innovative care delivery services implemented by awardees, such as multidisciplinary care management and

coordination teams, community health workers, care navigators and coaches, and telehealth.<sup>15</sup> However, local, state, and federal policy changes have begun to change the payment environment for the core components of primary care transformation. Within the FFS model, CMS has authorized state Medicaid agencies to reimburse services from community health workers, such as those used by TCN and FLHSA. Some state Medicaid agencies (for example, Ohio and Wyoming) have authorized payment for telehealth services, such as those used by NCH, UHC, and WIPH.

In newer models of payment, private and public payers are enhancing payments to practices that achieve PCMH recognition. Several programs (FLHSA, NCH, TransforMED, and UHC) have aligned with or directly developed ACOs that support services through capitated or shared-savings arrangements. For example, the Ohio Medicaid agency recently began including a special payment for care coordination in its capitated payments to Medicaid managed care organizations. The Medicaid ACO for children that NCH helps lead negotiated with managed care organizations to pass on those payments to support the care coordination interventions developed in its HCIA program. In Maryland, AGH and CareFirst anticipated support for their programs through the state's move to an all-payer global payment model for hospitals.

## **F. Special role of workforce development in primary care transformation**

Implementing an innovative approach to primary care required developing an organization's workforce to effectively execute new tasks and workflows. Both administrative and clinical staff were integral to providing improved care, but the change process was difficult. Developing an organization's workforce to transform primary care included (1) creating new and redefining existing positions, (2) recruiting and retaining appropriate staff, and (3) training and orienting new staff to the new model of care. In this section, we summarize lessons learned in these three areas to inform future efforts to improve the coordination and management of primary care.

### **1. Introducing or enhancing team-based primary care often involved creating new positions and redefining existing ones to fill new roles tailored to the provision of comprehensive and patient-centered care.**

All awardees incorporated new roles that were uncommon in traditional primary care settings. These new positions included care managers, care coordinators, community health workers, health coaches, panel managers, patient navigators, and transitional care specialists. Table III.6 offers definitions and examples of the duties associated with each of these positions. However, clinics' definitions of these positions varied greatly and responsibilities overlapped across multiple positions. PeaceHealth, for example, hired care coordinators and gave them responsibility for transitional assistance, chronic disease management, and chart review, effectively collapsing care coordination, care management, transitional care, and panel management into one position. Nurses and social workers commonly assumed clinical duties associated with care coordination, care management, health coaching, and transition assistance. Clinics often assigned medical assistants to nonclinical duties associated with patient navigation and panel management, and lay people generally served as community health workers. However, practices also varied in terms of the education requirements for these positions; some trained

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<sup>15</sup> CMS recently announced that, starting in January 2015, Medicare will begin paying physicians a monthly fee to coordinate the care of beneficiaries with two or more chronic conditions. Physicians who receive the fee must develop a comprehensive plan for each participating patient's care.

staff with the right background even if they lacked formal certification. In addition to these new support roles, many programs incorporated specialists into the primary care teams, particularly behavioral health providers, pharmacists, dieticians, and diabetes educators. Denver Health, for example, added clinical pharmacists to its primary care teams to offer medication management therapy and care coordination to high-risk patients.

**Table III.6. Positions used to improve patient-centered primary care**

Position	Responsibilities	Type of Staff Required for Position	Awardees	Number of awardees
Care coordinator	Organize patients' care activities among the patient (or caregiver) and various providers; exchange information; integrate care activities	R.N., L.P.N., M.S.W.	AGH, CareFirst, CUH, NCH, PBGH, PeaceHealth	6
Health coach	Educate, support, and mentor patients to set and achieve health care goals, often through healthier behaviors and lifestyle changes	B.A., R.N., Dietician, Health educator	CSHP, CUH, PBGH, Sanford Health, TransforMED	5
Community health worker	Reach out to and enroll patients; interpret and translate services; provide culturally appropriate health education; provide informal counseling; advocate for patients and the community; provide minor clinical services such as first aid and blood pressure measurement	Community members with similar background as targeted patients, may require high school diploma, B.A.	CUH, CSHP, TCN, UHC	4
Care manager	Identify patients with high needs/potential high needs; assess patients' risk factors; develop care plans; educate patients to effectively self-manage medical, social and mental health conditions; monitor; follow-up	R.N., M.S.W.	CUH, FLHSA, PBGH	3
Transition specialist	Assist patients transitioning from or between health care settings, especially hospital to home; counsel patients about medication self-management; use patients' health records (managed by patients) to communicate and track care; follow up with treating primary care providers and specialists; identify red flags	R.N.	WIPH, CUH, TransforMED	3
Panel manager / medical office assistant	Identify patients in the primary care organization's panel/population with medical needs; proactively reach out to patients with the goal of scheduling follow-up appointments, tests/assessments/screenings, and/or patient education; scrub or review patients' charts to plan for daily appointments and prepare care teams for scheduled patients	Medical assistants, Medical students	PeaceHealth, Sanford Health, TCN	3
Patient navigator	Guide patients through and around linguistic and financial barriers in the complex health care system to help ensure timely diagnoses and treatment	M.S.W., Community members with similar background as targeted patients	Denver Health	1

Sources: Definitions adapted from the following sources: the National Center for Biotechnology Information, U.S. National Library of Medicine, National Institutes of Health; the New Jersey Division of Medical Assistance and Health Services; the Health Resources and Services Administration and the Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services; Kaiser Permanente; the Care Transitions Program (Eric Coleman model); RTI Meta-Evaluation Domains for Qualitative Synthesis (based on original work from RAND); and interviews with program staff and review of program reports.

**2. Staff recruitment and retention emerged as important challenges to primary care transformation, requiring sites to adopt workforce policies to facilitate hiring appropriate staff and reduce staff burnout.**

Staff recruitment and retention emerged as the greatest challenges to primary care transformation. Placing the right people in the right positions was key to an effective program, but was difficult to accomplish before staff positions were fully defined and integrated into the care team. For example, TCN introduced a panel manager position after observing that existing clinical staff lacked the research skills and motivation to adequately complete panel management tasks. PeaceHealth reassigned chart review duties from care coordinators to medical office assistants to increase workforce efficiency. Awardees commonly had to tweak position descriptions, facilitate teamwork and communication, and identify appropriate leadership for new roles after the initial introduction.

Retention was a challenge because of secular trends in staffing churn and burnout. A certain amount of churning was common in some positions, such as nurses who had the option of working in different clinical settings and often transitioned to more professionally suitable roles. Burnout was also a common challenge in primary care, stemming from long hours, the stressful nature of clinical work, and the pressure of having to address the complex needs of some patients. Inadequately staffed programs resulted in personnel working long hours with few days off. For example, to effectively respond to patients' needs, WIPH's care transitions program required an on-site nurse seven days per week and transitional care nurses had to follow up with patients, often in their homes, within 48 hours of discharge. Programs serving small rural communities might have been able to designate only one full-time equivalent (FTE) transition coach, creating challenges for both hiring and retention. Participating hospitals in Wyoming addressed this challenge by incorporating back-up staff. However, even with policies ensuring staff were not overworked, burnout remained a risk.

Patient-centered primary care attracts personnel who are highly invested in patients. Primary care patients with complex chronic conditions are unlikely to improve as quickly or as often as patients in other health care settings, such as acute care inpatient hospitals. A registered nurse clinical supervisor at Sanford Health described the ideal health coach as wanting "to build a relationship with patients and stick with them in the long haul." To combat burnout, several programs invested in morale-boosting activities, such as luncheons, retreats, or early Friday closures. Other awardees incorporated work/life balance issues into their trainings and supervision. Opportunities to debrief with supervisors and other team members helped staff cope with work-related stress. A medical director at CUH observed this stress among his staff working with homeless people, who are difficult to treat because of the many challenges they face. Program managers at CUH explained that the program addressed work-related stress using a trauma-informed care model, which stressed a help-for-the-helper approach and built self-care into the care process.

**3. Training was the main facilitator to workforce development, but it was challenging to enhance staff skills with minimal workday disruption; to do so required the use of multiple training modalities with applicable content targeted to different types of staff.**

Although staff recruitment and retention were the main challenges of workforce development, training emerged as the main facilitator. Every program had a training component

and executed it using different modalities, including instructor-led classes, online courses, video conferences, webinars, in-service presentations, and learning collaboratives. Scheduled staff and departmental meetings also offered a convenient time for many awardees to train and develop their staff.

Although the approach to training varied among awardees, training coalesced around a pattern of migration from general to specific content. Programs tended to start at a high level, introducing the new approach to care and the purpose of the transformation. Providing the overview and context was critical, but staff quickly expressed interest in receiving more applied training to help with specific challenges, an especially common experience with learning collaboratives. Although collaboratives offered a valuable opportunity for staff to meet across organizations and share ideas and experiences, the challenge was ensuring that staff could learn practical and usable skills relevant to their workflows. For example, clinics with the same EHR system benefitted from meeting to discuss specific challenges with their platforms, and groups serving similar populations appreciated having breakout sessions to discuss effective care management. FLHSA illustrated this shift in learning collaboratives; administrators originally structured the collaboratives as a general participation and general feedback model, such as highlighting the benefits of care management. However, most attendees were not participating, so they changed the format to include one-hour presentations on specific topics, such as diabetic care protocols or quality improvement work, followed by an hour of clinical presentations. The physician describing this transition noted that attendees were learning and participating more after the format changed.

Developing content for training was an ongoing process of trial and error. Effective program administrators learned what topics were important to staff, how to target trainings to appropriate personnel, and how to schedule trainings to enable continuous improvement while reducing disruption to the workday. An example of ineffective trainings was Sanford Health's rapid-improvement events, which the program discontinued because the time it took to prepare these events was prohibitive. Table III.7 offers a comprehensive list of training topics across awardees. Although the programs varied considerably, three subjects emerged as particularly important to workforce development for practice transformation: (1) motivational interviewing, (2) health IT, and (3) chronic disease management and health promotion. We discuss each of these topics in the following section.

First, 12 of 14 awardees trained their staff in motivational interviewing techniques. Motivational interviewing is a collaborative rather than proscriptive way of engaging patients and facilitates self-management of health conditions, goal-setting/achievement, and healthy behaviors. Respondents uniformly praised this content, describing it as positive reinforcement that helped staff develop rapport with patients. Staff also believed that motivational interviewing facilitated their ability to help patients achieve better outcomes. Most clinics exposed all clinical staff to motivational interviewing, with lower-intensity training for physicians. Nonclinical staff in several programs received motivational interviewing training as well. Participants reported that providing opportunities to practice motivational interviewing techniques in trainings, such as role-playing or observation, enhanced their motivational interviewing skills.

Second, 11 awardees provided health IT training to their staff. Common health IT tasks included pre-appointment planning, population management, and quality reporting. Pre-

appointment planning involved reviewing scheduled patients’ medical charts, usually in an EHR, and identifying patients’ needs to address. Nurses were often responsible for pre-appointment planning and advised care teams of suggested approaches. For example, during a team huddle, a nurse health coach could advise behavioral health staff to speak with a patient showing signs of depression. Population or panel management involved electronic searches through an organization’s entire panel of patients to identify and reach out to those due for scheduled procedures. For example, panel managers identified all women due for mammograms and reached out to them to schedule appointments. Panel management was also tied to quality reporting, in which practices reported to payers their performance on clinical quality measures, such as the percentage of eligible women who received scheduled mammograms. Quality measurement provided insight for internal use too, enabling providers to identify and address gaps in care. Ancillary staff, such as panel managers, medical office assistants and IT staff, were often responsible for population management and quality reporting.

**Table III.7. Training topics used to transform the delivery of primary care**

Topic	Description	Number of awardees
Motivational interviewing	Teach and practice collaborative rather than prescriptive techniques for patient-centered counseling to facilitate self-management of health conditions, goal-setting/achievement, and healthy behaviors.	12
Health IT/data use	Train on topics such as EHRs; data collection, input, analysis and reporting; panel management/medical office assistant responsibilities; telehealth/telemonitoring; security; and health information exchange.	11
Chronic disease management and health promotion	Teach care management practices, especially chronic disease management, medication management, care plan development, and promotion of healthy behaviors.	11
Orientation/overview	Provide the general background, purpose, and goals of initiative.	8
Medical homes	Include trainings on comprehensive, team-based care; patient-centeredness and care coordination; accessibility; quality and safety; and the NCQA application.	8
Mental/behavioral health integration	Train staff to incorporate mental and behavioral health into primary care, including how to care for patients in crisis.	5
Trauma-informed care	Teach about the health effects of trauma and practices for caring for survivors of traumatic experiences.	4
Care transitions	Teach the protocol for transitioning patients between environments, especially hospital to home.	4
Legal	Cover topics such as informed consent, HIPAA, conflicts of interest, and human subjects research.	4
Screenings and assessments	Teach staff to administer, record, and interpret patients’ screenings and assessments, such as PAM or PHQ-9.	3
Cultural competence	Raise awareness of racial, ethnic, religious, and socioeconomic diversity in the provision of health care and teach methods to overcome bias.	3
Health insurance coverage	Educate staff about patients’ health insurance policies, including Medicare, Medicaid, and commercial policies.	3
Leadership	Cover topics such as incorporation of care managers, PDSAs, and change management.	3



Table III.7 (continued)

Topic	Description	Number of awardees
Patient navigation/ community health worker	Teach competencies such as reaching out to and enrolling patients; screening patients; connecting patients to community resources, such as transportation, financial, or insurance supports; coaching, mentoring, and educating patients; and coordinating care.	3
Engaging stakeholders	Orient faith-based partners and parent/caregiver partners.	2
Harm reduction	Teach techniques and resources to reduce the negative consequences of drug use and other addictive behaviors.	2
Emotional regulation	Teach staff to self-reflect, understand personal triggers, and regulate and cope with work-induced stress, such as the death of a patient	1

EHR = electronic health record; HIPAA = Health Insurance Portability and Accountability Act; NCQA = National Committee for Quality Assurance; PAM = Patient Activation Measure, PHQ-9 = Patient Health Questionnaire 9, PDSA = Plan-Do-Study-Act.

Third, 11 awardees offered training in effective care management that reviewed protocols for identifying and enrolling patients, developing care plans for patients with chronic diseases, performing medication reconciliation, and working with patients to lead healthier lifestyles. Care management training often included components such as motivational interviewing, health IT, transition assistance, and effective communication with physicians. Learning collaboratives were a common setting for care management training, enabling care managers within and across organizations to network and learn from one another.

**G. Next steps for the evaluation of the PCR programs**

We will continue to assess awardees’ implementation experiences and deepen our understanding of the primary determinants of implementation effectiveness in various primary care settings and contexts from the third and final year of HCIA funding. First, we will continue to review the quarterly performance reports submitted by the awardees to the implementation contractor or CMS, including their quarterly data reports. Second, we will conduct a second round of telephone interviews with program administrators during January and February 2015, several months before the end of HCIA funding. The telephone discussions will focus largely on lessons learned about the facilitators and challenges of practice transformation and the sustainability and replicability of the innovations. After completing the telephone interviews, we will conduct a second round of site visits with selected sites from each award during March and April 2015, shortly before the end of their funding period, aiming to obtain a range of implementation experiences (substantial progress without significant modification, substantial progress with significant modification, and delays in planned progress due to internal or external challenges). During the site visits, we will ask practice administrators and frontline staff about the factors that contributed to (or that limited or prevented) the awardees’ success, and further explore issues related to replicability, scalability, and sustainability. We will continue to present interim findings in the quarterly reports through February 2016 and the second annual report in August 2015. We will synthesize the interim and final results from our implementation evaluation with the findings from our impact analysis starting in the second annual report in August 2015 and expanded in the final annual report in August 2016.

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## **APPENDIX A**

### **PLAN FOR REPORTING IMPACT FINDINGS IN FUTURE ANNUAL REPORTS**

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This appendix briefly describes Mathematica Policy Research’s plans for reporting impact findings in the second and third annual reports. Because we are currently in the early stages of collecting and analyzing data for the impact evaluation, we do not have findings for this first annual report. However, in the second and third annual reports, when such findings will be available, we plan to use all available evidence from our impact and implementation analyses to draw conclusions about the effects of the primary care redesign (PCR) programs on patients’ service use, medical spending, quality of care, and health outcomes. The annual reports will expand on our quarterly reports to the Center for Medicare & Medicaid Innovation (CMMI) by analyzing outcomes over an extended time horizon; assessing outcomes beyond CMMI’s four core measures of service use and spending;<sup>1</sup> testing the robustness of results to model assumptions; and determining the consistency of results across outcomes, patient subgroups, and the implementation studies.

We plan to report the quantitative and implementation findings in a separate chapter for each awardee. Those chapters will begin with a description of the program and findings from the implementation study. Then, we will present the impact methods and results, followed by a discussion. By integrating impact and implementation evidence in a single chapter, we will enable readers to view quantitative findings in the context of implementation factors that drive those results. We will also prevent repetition of background information (such as descriptions of program components) that is needed to understand both impact and implementation evaluations.

We anticipate that the impact portion of each awardee-specific chapter will include the following five sections:

**1. Methods.** This section will summarize and/or update methods presented to CMMI in the awardee-specific evaluability reports, submitted in early 2014. Specifically, for each awardee, we will describe the overall analytic strategy for estimating impacts, as well as how we define the treatment and comparison groups (including any relevant subgroups) in the baseline and intervention periods. For each of the 13 awardees with a rigorous impact design, we plan to estimate impacts as the difference in outcomes for the treatment group and an external, matched comparison group, adjusting for any differences in outcomes and patients’ characteristics between the groups at baseline.<sup>2</sup> Therefore, this section will describe how we identified potential comparison units (patients, practices, or hospitals, as appropriate) and the matching strategy we used to narrow this list to a final comparison group. Further, each report will describe the specific outcome measures we examined and will refer to a common appendix that describes in detail how we calculated study outcomes that are common across some or all awardees. To minimize redundancy across awardees, we will only describe in detail awardee-specific methods updates and provide a short description of what methods components have not changed and are common across awardees.

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<sup>1</sup> The four core outcomes are: (1) all-cause inpatient admissions, (2) 30-day unplanned readmission rate, (3) outpatient ED visits, (4) Medicare/Medicaid Parts A and B spending.

<sup>2</sup> For one awardee, the Foundation for California Community Colleges and the Transitions Clinic Network, we are unable to assess impacts because it is not possible to identify a comparison group, or to identify a treatment group before the intervention began. At the time of this writing, there are two additional awardees for which it is not clear whether the required data will be available for their evaluations: Nationwide Children’s Hospital and University Hospitals of Cleveland.

**2. Baseline characteristics.** This section will describe characteristics of the treatment and comparison groups at baseline, before the intervention begins. For interventions that enroll individual beneficiaries into treatment, the baseline summary tables will compare treatment and comparison beneficiaries in terms of demographics, illness burden, and recent service use. For interventions that assign whole practices or hospitals to the treatment group, the baseline summary tables will compare characteristics of (1) the practices or hospitals—for example, whether a practice is designated as a medical home at baseline—and (2) individual beneficiaries.

This section will serve two purposes. First, it will compare the treatment population to national benchmarks for Medicare and Medicaid populations, helping to indicate whether the programs' targeting is working as intended—for example, identifying beneficiaries with high service use. Second, it will show whether the treatment and comparison groups are similar, on average, at baseline, which (if confirmed) will enable us to interpret regression-adjusted differences in mean outcomes during the intervention period as program effects, rather than underlying differences in observable factors between the two groups. For awardees for which we match practices or hospitals, we will aim to show equivalence both for the practices or hospitals and the individual beneficiaries in the treatment and comparison groups.

**3. Impact estimates.** We will present all impact estimates as regression-adjusted differences (with confidence intervals) in mean outcomes between the treatment and comparison groups. The regressions will adjust for patients' and, as applicable, practices' or hospitals' observed characteristics at baseline, including any differences in outcomes between the two groups that remain after matching.

We will estimate impacts only on outcomes the programs expect to influence. All programs expect to influence at least one of the four core outcomes, and most programs expect to affect all four (either as an explicitly stated goal or implicitly based on their theory of change). Therefore, for all programs, we will present at least one core outcome and for most programs we will present all four: health care spending, all-cause inpatient admissions, outpatient emergency department (ED) visit rates, and 30-day unplanned hospital readmissions. In accordance with guidance from CMMI, we also plan to present variants on the core outcomes for hospitalizations, ED visits, and readmissions that focus on the subset of these events that are considered potentially preventable with better ambulatory care.

In addition to the core outcomes, we will present impacts on other measures of quality of care or health outcomes that are relevant for specific awardees. For example, some awardees expect to improve immunization rates or provision of routine tests for managing certain chronic illnesses—outcomes we can measure in claims. These secondary outcomes are also relevant for CMMI and the awardees even if they did not explicitly state the intervention was likely to modify them.

Before estimating impacts, we plan to group the outcomes into domains, such as “quality of clinical processes of care.” We will decide on the domains, and which specific measures belong in them, in consultation with CMMI, because this decision affects not only how we present results, but the statistical power to detect effects. As noted in our evaluability reports, the large number of outcomes, time periods, and possible patient subgroups included in our quantitative analyses creates a substantial likelihood that we will find some statistically significant



differences due to chance, not true program effects. To reduce the likelihood of false conclusions, we are currently considering an approach to this multiple comparison problem described by Schochet (2009) that includes: (1) grouping outcomes into domains; (2) limiting the number of tests within a domain, either by compositing outcomes or selecting one or more outcome as primary; and (3) making the  $p$ -value thresholds more stringent if we retain more than one primary outcome within a domain. Therefore, the decision for how to group outcomes for presentation in the annual reports ties into decisions about how to address multiple comparisons, which we look forward to working through with CMMI in the near future.

**4. Discussion.** We will interpret results from our impact analyses, considering each awardee's results in aggregate and comparing them with the implementation evidence. This discussion will serve two purposes:

First, it will draw conclusions about *whether* the program had effects on core outcomes and, as applicable, other outcomes. The quantitative results will form the foundation for these conclusions. However, because our designs are quasi-experimental, it is possible that some of the estimated differences between treatment and comparison groups are due to design limitations and not true program effects. Therefore, corroborating evidence across outcomes, subpopulations, and implementation experience will bolster conclusions about whether each program had effects. For example, we could conclude with some confidence that the program reduced readmissions if adjusted readmission rates are significantly lower in the treatment than comparison group and from the implementation study, we know that the program had a robust transitional care intervention that was implemented as planned (for instance, the planned number or frequency [dose] of services) and accepted by providers and patients.

Second, the section will use implementation findings to discuss *why* the program may have had its observed effects. For example, if program roll-out was slower than expected for one awardee, this may explain program impacts that are smaller than the target than if the program was rolled out faster. Conversely, if a program seems to improve some outcomes but not others, the implementation findings can help us identify the specific aspects of program design and implementation that contributed to this pattern of results.

**5. Conclusion.** In this section, we will state our overall assessment of the program's promise. This includes not only a statement about statistically significant impact estimates, but also about *suggestive* evidence of program success—that is, impact estimates that might be of interest to CMMI for other reasons (such as large effect size). The section will also include an assessment of whether it appears feasible to replicate the program or particular program elements in different settings (either geographic or clinical), and whether the results observed under this evaluation are likely to be generalizable to these other settings.

In addition to presenting awardee-specific results in the second and third annual reports, we plan to summarize the impact findings across the awardees in the PCR portfolio. However, because the content of that summary will depend on the impact and implementation results that emerge over the next year, we do not include a discussion here of what we plan to report in these future summaries.

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