

FIRST ANNUAL REPORT

HCIA Complex/High-Risk Patient Targeting: First Annual Report

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Executive Summary

NORC at the University of Chicago is pleased to present the first of three annual reports (covering the period from September 2013 through August 2014) as part of our evaluation of 23 first-round Health Care Innovation Award (HCIA) projects, under contract with the Center for Medicare & Medicaid Innovation (CMMI). HCIA funding supports pilot testing, replication of established models, and scaling up of interventions, from process initiatives to organizational and systems-oriented reforms to improve the quality of care and health while lowering overall health care costs. The HCIA projects in NORC's portfolio take multiple and diverse approaches to health care reform, including care coordination, redesign of clinical care workflow, patient education and supports, financial incentives, and workforce development. The 23 awardees share a focus on patients with medically complex conditions who are at high risk for hospitalization, re-hospitalization, emergency department (ED) visits, or nursing home stays. For this reason they together comprise the Complex/High-Risk Patient Targeting (CHRPT) portfolio.

This annual report includes an introduction to the 23 awardees, describing the populations targeted and served and key intervention components; an overview of the evaluation design; an initial discussion of themes across the group of awardees, organized to address the core research questions; a chapter for each awardee that summarizes findings and the evaluation's progress to date; and appendices that provide updates on data collection and methods as well as the set of core research questions tailored to the CHRPT evaluation.

The Awardees

The awardees in the CHRPT portfolio share a focus on serving populations with complex health needs who are at high risk for hospitalization, re-hospitalization, emergency department (ED) visits, or nursing home stays. A total of 22 States, in every geographic region of the United States, are represented in this cohort. The awardee interventions also often operate in multiple hospitals or places of care within communities, with the number of sites an awardee operates in ranging from one to 67 (median of four sites per awardee). Although all awardees in this portfolio target patients and populations with considerable health challenges, their programs address quite distinct groups of complex and high-risk patients. The awardees' target populations include some combination of Medicare beneficiaries, Medicaid beneficiaries, dually eligible beneficiaries, Children's Health Insurance Program (CHIP) enrollees, and privately insured patients. Within the broad category of Complex/High-Risk Patients, awardees identify target populations including the following groups:

- Adults with mental and developmental disabilities;
- Children with complex health conditions;
- Frail elderly with multiple chronic conditions;
- Patients with late-stage illnesses;
- Adults with physical disabilities with multiple chronic conditions; and
- Adults with behavioral problems, mental illness, or cognitive impairment.

Most awardees target patients who are at higher risk for hospitalization because of specific or multiple complex conditions and/or a history of emergency department (ED) visits and hospital admissions. Many interventions also specify some of these risk factors as part of their eligibility criteria. The geographic scale and scope, in terms of target numbers of participants, vary widely across awardees. Most projects enroll participants within a particular geographic area (both rural and urban) but the size of the area varies from small local catchment areas to multiple sites across several States.

Most of the awardees serve populations that are comprised of people older than 75 years, although two awardees exclusively serve high-risk children. While none of the 23 awardees explicitly target members of a particular racial or ethnic group, some of the awardees do concentrate efforts addressing the needs of historically disadvantaged or underserved communities, and the racial and ethnic composition of their program participants reflects their catchment areas and historical relationships with the populations they serve. In addition, for a significant percentage of participants across the awardees, race or ethnicity is reported as unknown or not collected.

Several evidence-based models have informed the design and implementation of CHRPT awardees' programs. Many awardees cite the Coleman Care Transitions Intervention, the Program for All-Inclusive Care for the Elderly (PACE), the INTERACT program and tools, or the patient-centered medical home model as guiding their interventions. For some of the awardees the HCIA award followed a previous pilot initiative that has been expanded or replicated in their current program. For many of the populations served by these awardees, improving care involves integrating primary with specialty care, increasing care coordination, disseminating clinical best practices, patient education and engagement or offering consultations facilitated by telemedicine or videoconferencing. The 23 CHRPT awardees offer diversity in approaches to adapting evidence-tested models to achieve the triple aim with their targeted populations.

Overview of Evaluation Design

NORC's evaluation of awardees within the Complex/High-Risk Patient Targeting portfolio is one of seven evaluations that assess the 107 first-round HCIA funding recipients. All seven evaluations are guided by an overarching design and framework, including a logic model, conceptual framework, core research questions, and methodological approach. In addition to annual reports prepared for a public audience, each evaluator generates nine quarterly reports that offer rapid-cycle feedback to CMMI and each awardee. A shared set of evaluation domains assess the following:

- Implementation effectiveness and efficiency
- Program effectiveness, for health outcomes, cost, quality, and equity
- Effectiveness of workforce training programs
- Contextual factors that affect performance, both internal for the awardee and environmental
- Impact on priority populations, for outcomes and cost.

Core outcome measures include utilization (all-cause hospital admissions, hospital re-admissions, emergency department visits) and total cost of care.

The general HCIA evaluation framework allows for some customization to address the particular characteristics of each of the seven awardee portfolios. Consistency in approach and shared learning across evaluators is supported by an Evaluators' Collaborative convened monthly and by the concurrent development of a meta-evaluation.

NORC's CHRPT evaluation takes a mixed methods approach, using a multiple-phase, case-study design where each of the 23 awardees comprises a case. The phases include an initial determination of awardee evaluability (e.g., sample sizes, comparators, selection of sites for observations), concurrent collection and analyses of quantitative data including claims and electronic health records, qualitative data collected through interviews and site visits, and patient and workforce survey data. Ultimately, information from all of these sources will be integrated across the evaluation.

Quantitative Approach

The evaluation assesses the relationship between awardee interventions and program effectiveness, considering measures of health, quality of care, and health care costs and utilization. Quantitative assessment involves two steps. First, we link identifying information for program enrollees to their Medicare and/or Medicaid claims, enabling comparison of health, costs and quality of care before and

after enrollment in the program (pre-post design). Each awardee will provide information to identify the Medicare and Medicaid/CHIP beneficiaries served by their program (called a “finder file”).

Second, we compare health outcomes, costs, utilization and quality of care between patients in the program and an external comparison group derived from matched patients enrolled in Medicare, Medicaid or CHIP. These external comparison groups will enable comparison between HCIA programs and usual care. For interventions that involve post-acute care (after hospital discharge), we employ a difference-in-difference method. For ambulatory care or community-based interventions we use a longitudinal cohort design. Analysis will focus on the four core measures as applicable to each awardee: all-cause hospitalizations (or re-admissions, where the index event for enrollment is a hospitalization), emergency department (ED) visits, hospital readmissions, and cost. Subsequent reports from NORC will present quantitative findings for the CHRPT awardees, as data from more awardees become available; these analyses will address program effectiveness research questions and assess return on investment.

Qualitative Approach

NORC is reviewing program documents (e.g., project applications, awardee reports to CMMI, supplemental materials and publications, social media) and conducting telephone interviews and site visits, which often include consumer or workforce focus groups and observations of program activities. During the first year of NORC’s evaluation, we have conducted multiple telephone interviews with each awardee, including introductory calls and dedicated calls related to data sharing, site visit planning, and survey development. NORC teams have completed multiple-day site visits for 17 of the 23 awardees, and site visits are scheduled in September and October 2014 for the remaining six awardees. Follow-up site visits are planned for the spring of 2015 for a subset of awardees where the complexity of the intervention, delayed launch, or successful implementation merits additional observation.

Qualitative data are being coded for analysis to identify and articulate themes. NORC’s codebook streamlines the HCIA meta-evaluator’s comprehensive set of domains and sub-domains, creating a group of four code families to capture major themes that describe the intervention, the implementation process, environmental and contextual factors, and workforce development. Themes are used to inform the evaluation’s quantitative and survey arms as well as to answer the core research questions; our analysis emphasizes issues of sustainability beyond the end of HCIA funding, replicability, and scalability of the intervention.

Surveys

NORC is collecting and analyzing survey data related to two populations: first, patient (consumer) and family (informal caregiver) experience with the interventions and, second, the experience of workforce trainees. The survey data will allow us to learn more about each intervention and also enable comparisons among the 23 awardees. The specific approach with respect to survey data collection varies among the awardees. In some cases, NORC is designing and administering a survey; for other awardees we are collaborating in the design and fielding of an awardee's own survey; and finally, NORC will receive raw survey data from some awardees for analysis.

Workforce

Evaluation of workforce components is integrated throughout all stages of NORC's evaluation design, following the same mixed methods approach. Numeric data are gathered from awardee self-monitoring measures, program document review, and trainee and workforce surveys, to be analyzed by means of descriptive statistics and incorporated as variables in quantitative analyses. Text data are gathered through site visit interviews, focus groups/group discussions, and workplace observations, with interpretation through theme-based coding.

Plans for Future Reports

NORC will present enriched and expanded results in subsequent reports. Quarterly reports have focused on awardee-level updates and will continue to offer tailored analyses, while the annual reports will address the research questions. Quantitative analyses will be generated for greater numbers of awardees with each successive quarterly report, as data become available, and for supplemental measures as well as core measures. With the completion of the first round of site visits in October 2014, comprehensive analyses of qualitative data will begin. Data from surveys will also start becoming available in the winter of 2014-2015 for use in subsequent reports.

Cross-Awardee Findings

NORC presents a set of early or preliminary observations, based on qualitative research to date, and organized to address the major HCIA evaluation domains. Coding and systematic analysis are underway for the interviews, focus groups, and document reviews conducted through August, 2014. In this report, preliminary observations offer insight into the awardees' progress and will guide our ongoing data collection and analyses. The commonalities among different awardees' reports about specific aspects of their work, challenges they face in launching new services and approaches to care, and particularly successful or rewarding workflow redesigns, staff roles, or collaborations, merit examination at this early

stage in the evaluation process and will help to frame research questions and working hypotheses for the final evaluation. However, we note that the cross-awardee analysis presented here only touches upon issues and circumstances that multiple awardees have encountered.

Contextual Factors

Facility standards, professional licensure or worker certification requirements, delineation of scope of practice and health care market reforms have motivated and shaped several HCIA interventions. Those awardees that offer in-home services have had to adapt to facility and personnel licensure and certification standards, including State requirements on training and curriculum requirements for workers who assist homebound patients. Medicaid reforms and initiatives, in particular, at both the State and federal levels have often underpinned or stimulated the development of HCIA interventions. The emergence of accountable care organizations (ACOs) and other forms of market consolidation have also had an impact on several of the HCIA awardees' markets, with some benefiting from this payment environment due to an awardee project's focus on care coordination and cost reduction, while other awardees have had difficulty establishing collaborative and mutually beneficial relationships with payers and other providers in the State.

While NORC cannot make a definitive assessment of the organizational capacity and leadership of the HCIA awardees at this stage of the evaluation, based on our contacts with awardees so far we have found that program leadership, staff and partners have been able to communicate their broad mission and project objectives clearly and articulately, and have shown enthusiasm and dedication to their work. Awardees' organizational characteristics vary widely, with close to half sponsored by universities or academic health centers, and others sponsored by health systems, clinics, foundations or other nonprofit organizations, or a Medicaid provider.

Implementation Experience

The process of identifying patients, consumers, or residents with complex health needs and at high risk for hospital or nursing home care has been an early and time intensive step in the awardees' planning and implementation of their interventions. Some awardees recruit participants directly on hospital inpatient units, using claims-based algorithms to identify patients who are high utilizers or have particular constellations of conditions, through patient referrals from organizations that are either partners in the intervention or stakeholders that serve high-risk patients. To date, NORC observations on patient recruitment indicate that almost all awardees seek more enrollees; only two have reported the need to balance patient demand with the limits of resources available under HCIA funding.

For all 23 awardees, improved communication is a key aspect of the intervention. To improve communication and coordination among awardee staff and between staff and patients, most awardees have created new software applications, reporting forms, and databases, often modifying existing IT systems, or leveraged video communication technology. In this effort, many awardees report encountering significant obstacles to achieving seamless information exchange, due to varying electronic health record (EHR) systems and difficulty in exchanging the right data at the right time. Notably, standard EHRs have not proven adaptable for purposes of integrated care management across services and providers, and awardees have developed customized applications, either de novo or structured within an existing platform.

The increased capacity for engagement and self-management on the part of patients and caregivers is seen as a driver of higher quality, lower costs, and improved health. The CHRPT cohort of awardees takes a variety of approaches toward the overall goals of increasing the capacity of patients and their informal caregivers to advocate knowledgeably and to manage the health of patients and obtain health and social services. Awardee approaches towards patient engagement and self-management include initiating conversations about advanced care planning, formal didactic sessions or curriculum in chronic disease self-management, and client workshops or one-on-one coaching on independent living skills. Assessing patient engagement across many dimensions and expressions remains a work in progress both for awardees and for NORC, as measures that capture the learning experience of different target groups need to be developed.

Workforce and Training

Recruiting the right staff to successfully fulfill the complex demands of the awardee interventions has been an important part of the implementation effort. Awardees are competing for skilled workers and professionals in tight labor markets, especially for advanced practice nurses and data analysts in rural and inner-city locations. For many awardees, job candidates are homegrown or internal hires, with the candidate's familiarity with the culture of the hospital or surrounding neighborhood seen as a distinct advantage in implementation.

Staff training across the 23 awardees ranges from formal classroom or web-based lectures to informal shadowing of experienced staff members, to gain competencies specific to the intervention. A number of awardees note a post-launch shift from an initial emphasis on didactic coursework to greater emphasis on experiential training and mentorships. Multisite interventions often arrange for training at each site, overseen by a central program office.

All 23 interventions share an emphasis on inter-professional teamwork. Some adapt existing models such as the Program of All-Inclusive Care for the Elderly or ABLE, while others devise a custom approach to staffing, assembling teams led by nurses, community health workers, social workers, or physicians. Awardees adapt the same general model of teamwork in different ways, for example, addressing outreach and community-based care coordination either with community health workers or with staff holding at least a bachelor's in human or social services; adapting training for the INTERACT suite of quality improvement tools for teams based at skilled nursing facilities or across multiple residential settings; or expanding clinical care coordination to include coordination with human services or disability rights education.

Participation in an HCIA-funded pilot can transform staff roles and career prospects. Site visit focus groups and interviews indicate that, across settings and roles, new workforce members typically report high satisfaction with their work, for example, expressing approval of a more holistic approach to patient care (“What nursing should be but often is not”). Among the 23 awardees, experienced nurses in particular have assumed enhanced roles and lead many of the interventions; clinical pharmacists, who support medication reconciliation, education, and management either in a clinical setting or at patients' homes; direct care workers, trained to support patient-centered care and to function proactively as part of a patient's care team; community health workers, in care coordination or navigation roles; and peer educators, who may be integrated into a clinical or human services intervention team for the first time.

Sustainability, Replicability, Scalability

Sustainability and replicability are affected by size and scope of the intervention. Some awardees have piloted a smaller version of their intervention in the year or two prior to the HCIA award, starting with a small, experienced core staff which they then expanded. Across the awardees, the most common source of concern with regard to sustainability involves identifying sources of financing for enhanced preventive, disease management, or patient engagement services, which are often provided by unlicensed staff or those whose services are not covered under traditional private or public coverage programs. Capitated payment or ACO-like value-based payment models that allow organizations or providers to internalize the costs and savings from less institutionally oriented care delivery hold promise for sustaining these interventions. Feasibility will depend on the awardees' ability to demonstrate cost savings for the relevant payers.

At this early stage of the NORC evaluation, scalable elements within awardee interventions are in the process of being identified and assessed. In subsequent reports, the evaluation will explore scalability

both for the interventions themselves as well as for elements within the interventions that may be isolated and considered distinctly as scalable or replicable in another setting.

Issues for Evaluation

Evaluating the first round of HCIA awardees presents challenges related to the overall framing of the evaluation (i.e., whether it is seen as research or quality improvement, with implications for data collection and management); identification of suitable comparison group for analytic purposes in conjunction with the awardee; and issues specific to the CHRPT portfolio.

Rapid-cycle design can improve an evaluation's value and quality through frequent communication and collaboration with the awardee, while also making biased observations by the evaluator more likely and potentially enabling the evaluator to contaminate or unduly influence implementation. In addition, rapid cycle's commitment to changing the intervention in response to feedback may create a moving target of domain specification, the setting of benchmarks for dosage, reach, and other performance measures.

Access to data is a prerequisite for evaluation. Negotiating access to data and to the sharing of data by awardees with the evaluator, involves multiple agreements related to privacy protections around claims data (Medicare, Medicaid, CHIP) and electronic health records, acknowledged time lags in access to data and records, and confidentiality protections related to patients, for example, necessitating approval of evaluation protocols by an awardee's Institutional Review Board (IRB). Contingencies involved in negotiating these agreements, or the inability to come to an agreement, can stymie or prevent the evaluation from moving forward.

Finally, measuring program effectiveness requires adequate time to identify one or more comparison groups (based on the evaluator's understanding of the intervention), capture all relevant costs to estimate return on investment, and identify secular trends that may accentuate or mask findings. Strategies to measure patient and informal caregiver experiences with interventions that can be difficult to distinguish from other health services and long-term care services and supports need further attention and development.

Summary

This first annual report offers an initial, descriptive overview and analytic framework for the 23 projects in the HCIA Complex/High-Risk Patient Targeting Portfolio. It summarizes evaluation activities to date and presents observations based on qualitative analyses. These observations will guide NORC's ongoing work over the next year. In the second year of the evaluation we will complete site visits, continue to

review program documents, and formally analyze our qualitative data; field surveys in support of the evaluation and coordinate with awardees to share in the analysis of ongoing surveys related to the interventions; and acquire additional quantitative data on beneficiary utilization and cost of health services that will inform our assessment of core and supplemental performance measures. Finally, we will begin to integrate findings from the qualitative, survey, and quantitative arms of our evaluation to address the core research questions laid out in our analytic plan.

Introduction, Complex/High-Risk Patient Targeting Portfolio

Overview of First Annual Report

This report is the first of three annual reports being produced by NORC at the University of Chicago as part of our evaluation of 23 of the 107 first-round Health Care Innovation Award (HCIA) recipient organizations, conducted under contract with CMMI. This report offers a public introduction to NORC's evaluation and status after its first year (September 2013 through August 2014) and presents plans for the remaining years. The annual report presents findings across the group of 23 awardees, as well as tailored feedback to each awardee.¹

Under the auspices of the Patient Protection and Affordable Care Act, HCIA funding is awarded competitively to support pilot testing of new models, replication of established models, and scaling up of tested interventions intended to improve quality of care and health while lowering health care costs. All 23 awardees in NORC's Complex/High-Risk Patient Targeting (CHRPT) portfolio are designed to serve patients with medically complex conditions who live in the community and are at high risk of using hospital or other institutional services. Awardees take a variety of approaches to reform, including care coordination, redesign of clinical care workflow, delivery of specialty care and dissemination of evidence-based clinical best practices, patient education and supports, and training for clinical and non-clinical staff in new and expanded roles. In addition to diversity of approach, there is considerable variation among awardees in the maturity of the intervention being tested. These range from expansion of pilots and new applications of evidence-based approaches, to novel service strategies, and from process redesign to organizational and systems-oriented change.

Overview of Complex/High-Risk Patient Targeting Group of Awardees

The awardees in the CHRPT portfolio share a focus on serving populations with complex health needs who are at high risk for hospitalization, re-hospitalization, emergency department (ED) visits, and nursing home stays. Although all awardees in this portfolio target patients and populations with considerable health challenges, their programs address quite distinct groups of complex and high-risk patients. The awardees' target populations include some combination of Medicare beneficiaries, Medicaid beneficiaries, dually eligible beneficiaries, Children's Health Insurance Program (CHIP) enrollees, and

¹ Unless otherwise noted, in this report, we specify a three month time period (quarter) in one of two ways. The first refers to the HCIA reporting quarter, at the end of which each CHRPT awardee submits a report to CMMI, e.g., to date, Q1 (July–Sept 2012), Q2 (Oct–Dec 2012), Q3 (Jan–Mar 2013), Q4 (April–June 2013), Q5 (July–Sept 2013), Q6 (Oct–Dec 2013), Q7 (Jan–March 2014), and Q8 (April–June 2014). The second refers to the numbers of quarters in which an awardee's intervention has been implemented. The text will note which of the two means is being used to identify a quarter.

privately insured patients, all with multiple chronic conditions, disabilities, or advanced illnesses. Many interventions serve patients directly while others focus on training care workers or changing systems, having a more distal effect on patient care. For some interventions, hospitalization is a trigger for enrollment; many others in this portfolio offer ambulatory care in a community setting and a small number offer both post-acute (hospitalization) as well as community-based interventions. Awards are used to:

- Increase access to services and providers, particularly those that provide ongoing preventive and disease management care (e.g., patient-centered medical homes) as well as specialty care
- Support interventions that provide services that are not within the scope of reimbursable services under traditional Medicare or Medicaid, or when conditions of coverage are not met (e.g., home visiting by RNs other than home health services)
- Train and/or deploy clinicians and other health workers in expanded or novel roles
- Establish and improve communications and coordination among providers throughout transitions of care
- Increase patient, client, and caregiver self-efficacy and their role in management of the patient's own health.

All of the awardees address the triple aim of improving population health through higher quality care at lower cost. See Exhibit 1.1 for an overview of the 23 awardees, their target populations, and their principal setting or settings.

Exhibit 1.1: The Complex/High-Risk Patient Targeting Portfolio

Awardee	Name of Intervention	Location # of Sites*	Target Population**	Setting***
Beth Israel Deaconess Medical Center	Post-Acute Care Transitions (PACT)	MA 6	Medicare & Dually Eligible Adults	Hospital
California Long- Term Care Education Center	Care Team Integration of the Home-Based Workforce	CA 3	Adults enrolled in Medicaid (MediCal) In-Home Supportive Services	Community
Courage Kenny	Advanced Primary Care Clinic	MN 1	Medicaid & Dually Eligible Adults <65 years	Community
Developmental Disabilities Health Services PA	Developmental Disabilities Health Home (DD Health Home)	NJ, NY 6	Medicaid & Dually Eligible Adults <65 years living with I/DD	Community
Johns Hopkins University	Community Health Partnership (J-CHIP)	MD 1	Medicare, Medicaid, & Dually Eligible Adults	Community & Hospital
Johns Hopkins School of Nursing	Project Community Aging in Place, Advancing Better Health for Elders (CAPABLE)	MD 1	Dually Eligible Adults >65 years	Community
LifeLong Medical Care	Complex Care Initiative	CA 3	Medicaid & Dually Eligible Adults in health plan (Alameda Alliance for Health)	Community
North Carolina Community Networks	Child Health Accountable Care Collaborative (CHACC)	NC 14	Children enrolled in Medicaid or CHIP	Community
Northland Healthcare Alliance	Care Coordination for Seniors	ND 6	Medicare, Medicaid, and Dually Eligible Adults >65 years	Community
Palliative Care Consultants of Santa Barbara	Doctors Assisting Patients at Home (DASH)	CA 1	Medicare & Dually Eligible Adults >75 years	Community
Pittsburgh Regional Health Initiative	Primary Care Resource Centers	PA 6	Medicare Adults	Hospital
Providence Portland	Health Commons	OR 1	Medicaid & Dually Eligible Adults	Community & Hospital
South Carolina Research Foundation	HEMOCARE+	SC 4	Medicare & Dually Eligible Adults >65 years	Community
St. Francis Healthcare Foundation of Hawaii	Home Outreach Program and E-Health (HOPE)	HI 2	Medicare adults	Community & Hospital
Sutter Health	Advanced Illness Management (AIM)	CA 14	Medicare adults within Sutter system	Community
University Emergency Medical Services	HealthiER	NY 1	Medicare, Medicaid, & Dually Eligible Adults	Community
University of Arkansas for Medical Sciences	Schmieding Center Home Caregiver Training Program	AR, TX, CA, HI 4	Medicare, Medicaid, & Dually Eligible Adults using home health or home care services	Community

Awardee	Name of Intervention	Location # of Sites*	Target Population**	Setting***
University of Iowa	Transitional Care Team Program	IA 10	Medicare, Medicaid, & Dually Eligible Adults	Hospital
University of New Mexico	Extension for Community Healthcare Outcomes (ECHO Care)	NM 10	Medicaid managed care Adults	Community
University of North Texas Health Science Center	Brookdale Senior Living Transitions of Care Program	CO, FL, KS, TX 67	Medicare, Medicaid, & Dually Eligible Adults >65 years	Community & Hospital
University of Rhode Island	Living Rite	RI 2	Medicaid & Dually Eligible Adults with I/DD	Community
University of Texas Health Science Center at Houston	High-Risk Children's Clinic	TX 1	Medicaid enrolled children <18 years	Hospital
Vanderbilt University Medical Center	IMPACT/ INTERACT	TN, KY 23	Medicare Adults >65 years	Hospital

*May indicate the target number of sites, for interventions that scale up models over the 3-year grant period.

**Most sites have additional inclusion and exclusion criteria for prospective participants, related to health status and previous health services utilization and several also serve privately insured patients.

***Refers to primary setting for implementation and whether hospital claims data may be available for use in the evaluation.

Populations Targeted and Served

Within the broad category of Complex/High-Risk Patients, awardees identify target populations including the following groups:

- Adults with mental and developmental disabilities;
- Children with complex health conditions;
- Frail elderly with multiple chronic conditions;
- Patients with late-stage illnesses;
- Adults with physical disabilities with multiple chronic conditions; and
- Adults with behavioral problems, mental illness, or cognitive impairment.

It is important to note that awardees may serve patients or clients in addition to those they target or shift the scope of their patient targeting, for example, as they observe the impact of an influx of patients with more co-morbidities or specific health needs (such as mental or behavioral health) than had been anticipated. See Exhibit 1.2 for a general description of the populations served by the awardees.

Exhibit 1.2: Target Populations for CHRPT Group of Awardees

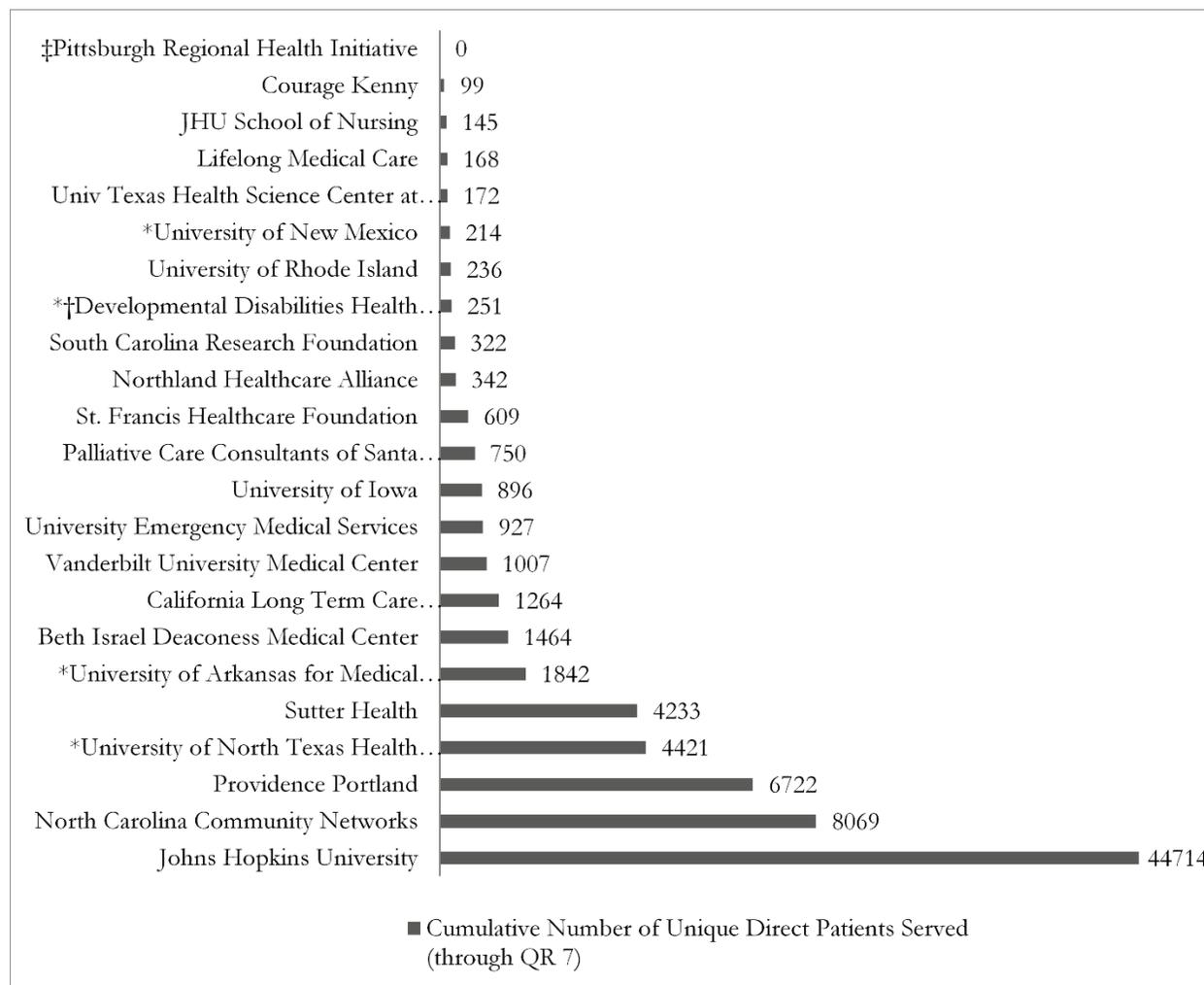
Awardee	Children with Complex Health Conditions	Adults living with Intellectual & Developmental Disabilities	Adults living with Behavioral Problems, Mental Illness, or Cognitive Impairment	Adults with Physical Disabilities or Those with Multiple Chronic Conditions	Patients with Late-Stage Disease	Frail Elders or Those with Multiple Chronic Conditions
Beth Israel Deaconess Medical Center						X
California LTC Education Center				X		X
Courage Kenny		X	X	X		
Developmental Disabilities Health Services PA		X	X			
Johns Hopkins University			X	X	X	X
Johns Hopkins School of Nursing						X
LifeLong Medical Care			X	X		X
North Carolina Community Networks	X					
Northland Healthcare Alliance						X
Palliative Care Consultants of Santa Barbara				X	X	X
Pittsburgh Regional Health Initiative					X	X
Providence Portland			X	X		X
South Carolina Research Foundation				X		X
St Francis Healthcare Foundation				X		X
Sutter Health				X	X	X
University Emergency Medical Services			X	X		X
University of Arkansas for Medical Sciences						X
University of Iowa			X	X		X
University of New Mexico			X	X		X
University of North Texas Health Science Center						X
University of Rhode Island		X	X			
University of Texas Health Science Center at Houston	X					
Vanderbilt University Medical Center					X	X

Most awardees target patients that are at higher risk for hospitalization because of specific or multiple complex conditions, and/or a history of emergency department (ED) visits and hospital admissions. Many interventions also specify some of these risk factors as part of their eligibility criteria. Specific awardee target populations range from the broadly defined (e.g., high-risk Medicare beneficiaries or Medicaid and dually eligible beneficiaries living in a 10-county region) to the more specific (e.g., chronically ill Medicaid beneficiaries under the age of 18 with 50 percent or greater rate of hospitalization in the next year) to the very narrowly defined (e.g., dually eligible beneficiaries living at home who have at least two chronic health conditions, take at least six medications, and have had at least two emergency department visits and two hospitalizations in the past year).

Although the patients and clients served by the CHRPT awardees are more likely to live in community settings rather than residential facilities, many rely on skilled nursing or other long-term services and supports (LTSS). Participants in the interventions represent a diverse array of living situations. Most programs target high risk patients living in their own homes, while others focus on residents in assisted living or independent living communities (University of North Texas). Some enroll patients only from within a particular health care system or who use a limited set of providers (e.g., Sutter, Beth Israel, Vanderbilt), or in specific managed care plans (Lifelong Medical Care).

The geographic scale and scope, in terms of target numbers of participants, vary widely across awardees. Most only enroll participants in a certain geographic area (rural or urban, or mixed) but the size of the area varies and could be anywhere from a 12 mile radius (Palliative Care Consultants of Santa Barbara) to a 10-county region (Vanderbilt University) to 14 sites across California (Sutter Health) to multiple sites across several States (University of Arkansas for Medical Sciences). Awardees also range widely in scale, ranging from nearly 45,000 participants total participants as of the end of March 2014 in Johns Hopkins Community Health Partnership (JCHiP) to fewer than 100 participants in Courage Kenny's program. While most have enrolled a few hundreds of people, several larger interventions have enrolled thousands. See Exhibit 1.3 for a tabulation of participants enrolled, based on self-reported data submitted by the awardees to CMMI.

Exhibit 1.3: Numbers of Unique Direct Patients Served, Cumulative Through March 31, 2014



NOTE: * Awardee does not report on direct participants served or does not serve direct participants; indirect participant counts shown instead.

† Data for this awardee is not reported on a cumulative basis, so these totals only reflect the most recent reporting quarter (HCIA Quarter 7).

‡ The awardee does not collect direct patient identifiers and does not provide this level of detail in reports, preventing them from inclusion in the chart.

SOURCE: Awardee self-reported data to CMMI (Lewin, Seventh Quarterly Report, dated 3/31/14).

Who is being served by these interventions? The most recent quarterly report submitted by the awardees to CMMI offers a snapshot of the age and racial and ethnic identify of patients; unless otherwise noted, these data reflect patients or participants for the seventh HCIA reporting quarter (period from January 1 through March 31, 2014). This snapshot gives us a sense of which populations are being served, how an intervention may be tailored to target a subgroup of the general population, and the potential impact of a particular intervention on health disparities. Information is not available from these reports on levels of educational attainment or household income that, together with race or ethnicity, comprise a measure of

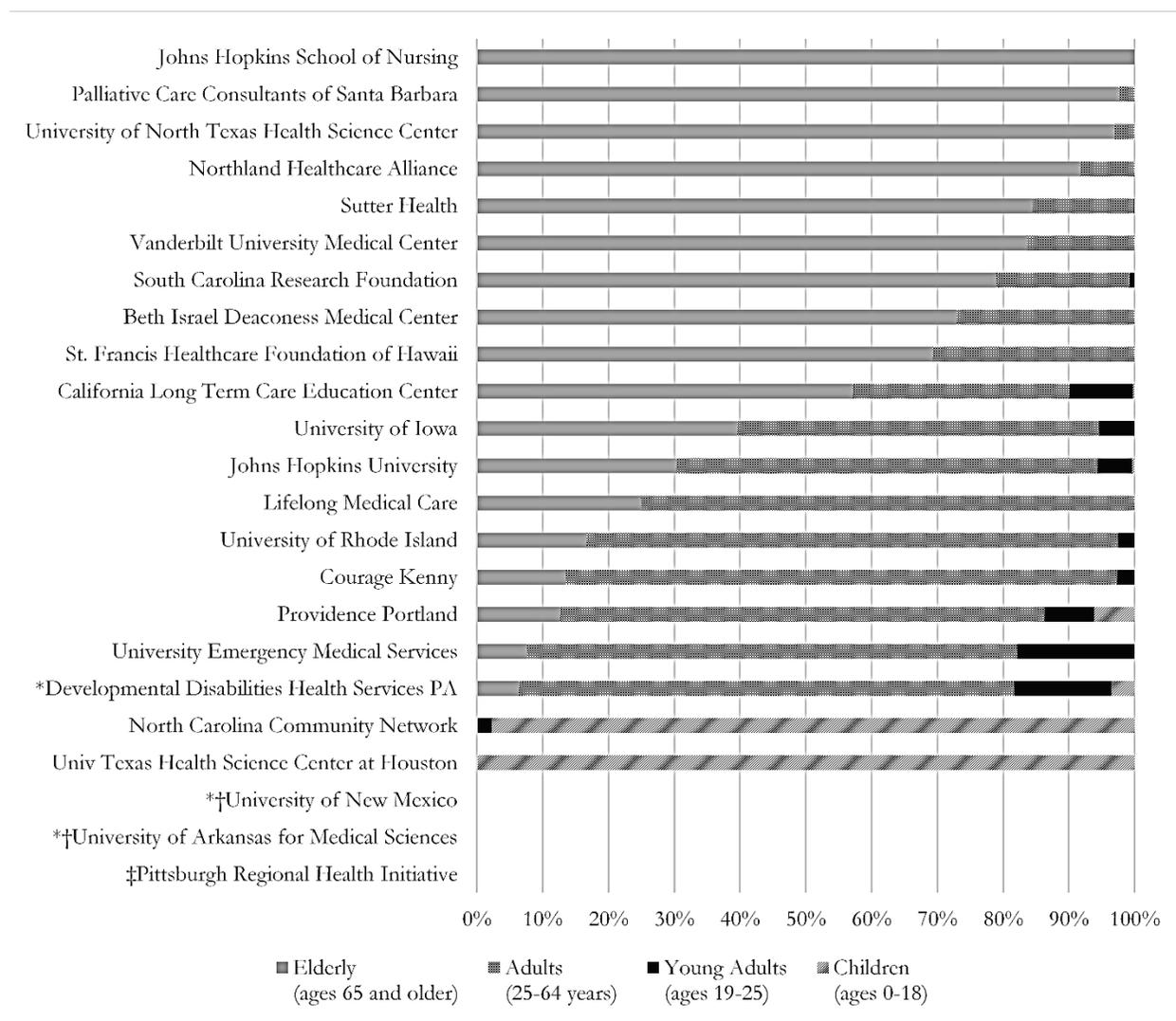
socioeconomic status that can be an important predictor of access to care and of health disparities. These observations raise questions for NORC to explore in its evaluation over the coming year.

Age. The concentration and distribution of patients by age cohort likely reflects both the health-related and functional challenges at different stages in life and the ways in which needs for health care or long-term service and supports change over the life course.

- For the two awardees serving patients with advanced illness, most participants are older than 75 years.
- Those involved in post-hospitalization care coordination and interventions that provide or facilitate LTSS in home settings serve populations that are about 50 percent to 80 percent comprised of people older than 75 years. Some clearly identify a subgroup that may be defined functionally if not explicitly in terms of age eligibility, for example, JHU School of Nursing’s largest group consists of patients ages 65 to 74 (58 percent of participants), who are likely to be more mobile and more cognitively functional than patients over age 75 (42 percent of participants).
- Those interventions that serve persons living with disabilities or with intellectual and developmental disabilities (I/DD), and those that offer training in Independent Living Skills typically serve working-age adults (26 to 64 years): between 75 percent and 84 percent of those served by Lifelong, University of Rhode Island, Developmental Disabilities Health Services, and Courage Kenny. The University of Iowa, which offers a post-hospitalization care coordination intervention that targets those with mental and behavioral health needs, has somewhat younger patients than do other post-acute interventions, more closely resembling the age profile of interventions that serve persons living with disabilities; 55 percent are working-age adults and only 22 percent are older than 75 years.
- For the two awardees that serve high-risk children, most participants are between the ages of 1 and 11 years; the targeting of the University of Texas’s intervention is notable in the relatively concentrated cluster of patients within the 1 to 11 year age group, while North Carolina serves children under 1 year of age (22 percent of participants) and those ages 12 to 18 (18 percent of participants).

See Exhibit 1.4 for a depiction of the age cohorts served by each awardee.

Exhibit 1.4: Age Cohort Distribution for Each Awardee



NOTE: * Awardee does not report on direct participants served or does not serve direct participants; indirect participant counts shown instead.

† The awardee did not report ages for indirect participants.

‡ The awardee does not collect direct patient identifiers and does not provide this level of detail in reports, preventing them from inclusion in the chart.

SOURCE: Awardee self-reported data to CMMI (Lewin, Seventh Quarterly Report, dated 3/31/14).

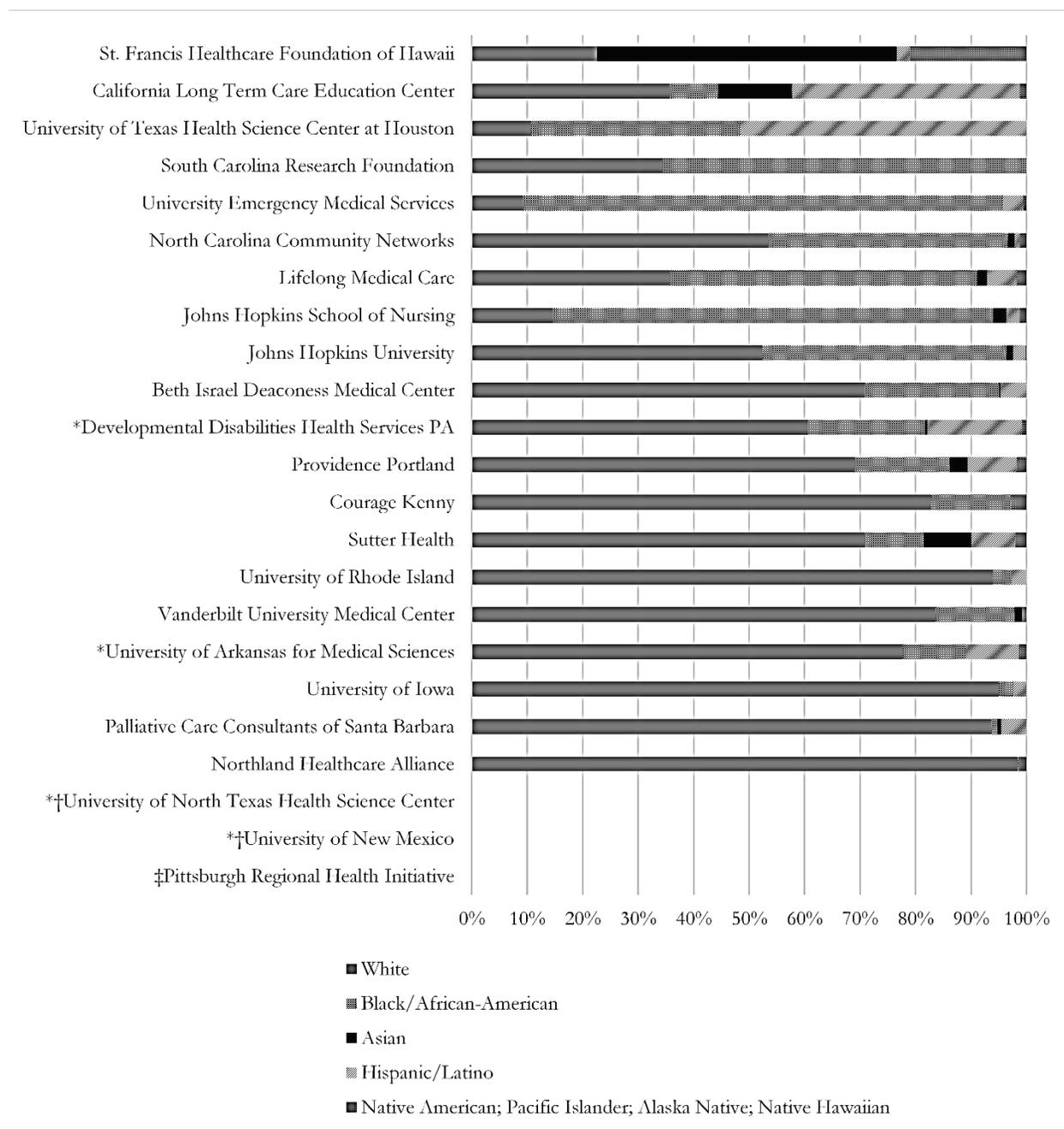
Racial and Ethnic Identity. While none of the 23 awardees explicitly target members of a racial or ethnic group, patterns of service are likely to reflect the catchment areas and historical relationships of the awardees, for example, the majority African American population served by University Emergency Medical Service’s host institution, Erie County Medical Center, by the Johns Hopkins School of Nursing in Baltimore neighborhoods, and by home health agencies in rural South Carolina (South Carolina Research Foundation); and the majority Asian population served by St. Francis of Hawaii. The patterns of

participation by racial and ethnic identity may be obscured by the aggregate numbers presented in the seventh HCIA reporting quarter report for awardees with multiple sites that serve distinct subgroups. For example, in the case of Sutter AIM, the typical patient at the Central Valley site is likely to be Hispanic or Latino, Asian at the San Francisco site, and African American at the San Leandro (Oakland) site. One important caveat is that significant percentages of participants have race/ethnicity marked as unknown in these reports.

- For the two awardees with advanced care interventions (Palliative Care Consultants of Santa Barbara, Sutter Health), most participants are white (93 percent for Palliative Care of Santa Barbara), as are the participants in interventions in Midwestern rural areas (93 percent white for University of Iowa, 98 percent white for Northland).
- Three awardees that offer care coordination initiatives in major metropolitan areas have participants more likely to be white than African American (68 percent white for Beth Israel Deaconess Medical Center, 81 percent white for Vanderbilt University Medical Center, and 56 percent white for Providence Portland). Johns Hopkins J-CHiP serves relatively similar proportions of African Americans (42 percent) and whites (50 percent).
- For three of the awardees that serve persons with I/DD or other disabilities, patients are typically white (78 percent for Courage Kenny, 61 percent for Developmental Disabilities, and 70 percent for University of Rhode Island). One other awardee in this category, Lifelong Medical Care, presents a counter-example, with 48 percent of its patients identified as African American and 31 percent white, reflecting the awardee's site locations in Alameda County.
- For the two awardees that serve high-risk children, the single largest patient group reflects the predominant racial/ethnic group in the State: Hispanic or Latino for the University of Texas Houston (52 percent of participants) and white for North Carolina (46 percent of participants); for both interventions, the second largest group of children are African American (about 37 percent in each case).

See Exhibit 1.5 for a depiction of the distribution of racial and ethnic groups served by awardees, where such data are available.

Exhibit 1.5: Racial and Ethnic Identity of Patients Served, By Awardee



NOTE: * Awardee does not report on direct participants served or does not serve direct participants; indirect participant counts shown instead.

† The awardee did not report racial/ethnic identity for indirect participants.

‡ The awardee does not collect direct patient identifiers and does not provide this level of detail in reports, preventing them from inclusion in the chart.

SOURCE: Awardee self-reported data to CMMI (Lewin, Seventh Quarterly Report, dated 3/31/14).

Key Components of Awardee Interventions

Several evidence-based models have informed the design and implementation of CHRPT awardees' programs. Many awardees cite the Coleman Care Transitions Intervention, the Program for All-Inclusive Care for the Elderly (PACE), the INTERACT program and tools, or the patient-centered medical home as guiding their interventions. Many of the CHRPT initiatives address either the lack of access to timely, high-quality primary care that results in reliance on costly emergency department (ED) or inpatient care or the need for home care or personal care services to enable people with disabilities or who are frail to live in community settings. For many of the populations served by these awardees, improving care involves integrating primary with specialty care, disseminating clinical best practices, or offering consultations facilitated by telemedicine or videoconferencing. Many of the awardees address personal care and non-medical needs through referrals to community resources and through patient education and engagement with participants and their caregivers.

Awardees' interventions consist of one or more of the following components:

- Care coordination among different types of providers such as hospital, primary care provider, and home health
- Care integration (among different types of providers such as pharmacy and PCP, mental or behavioral health and PCP; between health services and human services and/or community programs)
- Redesign of clinical workflow, typically within a hospital or skilled nursing facility
- Access to clinical expertise and specialty care through the development and dissemination of evidence-based clinical best practices and video-consultations
- Patient engagement and self-management (use of motivational interviewing and other techniques to build patient and informal caregiver capacity to manage health and health care system, participate in developing care plan; independent living skills workshops)
- Self-monitoring or continuous quality improvement integrated into the routine operations of the awardee, beyond self-monitoring required as part of the HCIA funding.

See Exhibit 1.6 for a general typology that notes key intervention components by awardee. This typology will be expanded and refined as part of NORC's ongoing analytic work.

Exhibit 1.6: Key Intervention Components for CHRPT Group of Awardees

Awardee	Care Coordination Among Providers	Care Integration Among Providers	Redesign of Clinical Workflow Within Facility	Specialty Care Services (e.g., Clinical Guidelines, Tele-Mentoring)	Patient and Caregiver Engagement	Workforce Training, Including Peer Training*	Continuous Quality Improvement**
Beth Israel Deaconess Medical Center	X				X		
California LTC Education Center					X	X	
Courage Kenny	X				X		
Developmental Disabilities Health Services PA	X				X		
Johns Hopkins University	X	X	X	X	X		X
Johns Hopkins School of Nursing	X				X		
LifeLong Medical Care	X	X			X		
North Carolina Community Networks	X	X		X	X	X	X
Northland Healthcare Alliance	X						
Palliative Care Consultants of Santa Barbara	X				X		
Pittsburgh Regional Health Initiative	X			X	X	X	X
Providence Portland	X	X	X		X		X
South Carolina Research Foundation	X				X	X	
St Francis Healthcare Foundation	X				X		
Sutter Health	X	X	X		X	X	X

Awardee	Care Coordination Among Providers	Care Integration Among Providers	Redesign of Clinical Workflow Within Facility	Specialty Care Services (e.g., Clinical Guidelines, Tele-Mentoring)	Patient and Caregiver Engagement	Workforce Training, Including Peer Training*	Continuous Quality Improvement**
University Emergency Medical Services	X				X	X	
University of Arkansas for Medical Sciences						X	
University of Iowa	X						
University of New Mexico	X	X	X	X	X	X	
University of North Texas Health Science Center	X		X		X	X	X
University of Rhode Island	X				X		
University of Texas Health Science Center at Houston	X	X	X	X	X		
Vanderbilt University Medical Center	X		X			X	X

NOTE: *All CHRPT interventions include workforce training for dedicated staff as well as briefings for affiliated staff and stakeholders. This column indicates interventions where workforce transformation is a stated objective, for example, in cases where the awardee’s emphasis on training is reflected in their characterization as providing services to patients only indirectly.

**All CHRPT interventions include self-monitoring as part of their tasks under the award. This column indicates interventions where continuous quality improvement is ongoing for the awardee and includes activities that are part of the intervention.

In general, the approaches used by this group of awardees include some combination of care coordination, patient support, clinical care workflow redesign, and training. However, even where awardees have adopted a common approach, the interventions themselves are necessarily tailored to the needs of a specific population and location. Adaptation to accommodate local resources and priorities is both efficient in terms of expending resources, and necessary for buy-in by local providers.

For example, the University of Iowa and St Francis Healthcare Foundation both have interventions that focus on improving care during the post-hospital discharge transition. Both rely heavily on telehealth monitoring but have very different structures. Iowa utilizes an interdisciplinary transitional care team (nurses, pharmacists, physicians, social workers, mental health experts, and rural care coordinators) to provide patient care coordination across multiple care settings (the urban University of Iowa Medical Center, 10 partner rural critical access hospitals in 9 counties, and primary care providers), while St Francis employs nurses to install remote monitoring equipment in patients' homes for daily transmission of clinical measurements and to oversee the transition from hospital by providing telephonic support and alerting the primary care provider of problematic changes in condition.

Another example of how two programs address care coordination issues in different ways is Palliative Care Consultants of Santa Barbara's Doctors Assisting Seniors at Home (DASH) program and The University of South Carolina's HOMECARE+ program. Both use in-home care for specific populations to improve care coordination, reduce hospital admissions and ED usage, and improve a person's ability to stay in his or her own home. However, the DASH model offers episodic care while University of South Carolina uses a more continuous, routine approach to coordination. With DASH, an enrollment appointment may be followed at any time by a rapid response visit, at the request of an enrollee or caregiver, whereas HOMECARE+ delivers a sequence of three meetings with program participants, followed by regular, bimonthly home visits by trained intervention staff.

Interventions that focus on training workforce staff to provide direct care to patients also vary. The University of Arkansas for Medical Science (UAMS) trains direct care workers only and does not focus on the patient population directly. Their trainings cover care coordination, inter-professional teamwork, and chronic disease management, enabling direct care workers to meet new Arkansas requirements and to be employed, either independently or through home care agencies, by Medicare and Medicaid beneficiaries who receive long-term care or home care services. The California Long Term Care Education Center (CLTCEC) shares many of the same objectives for its training program but enrolls pairs of MediCal-enrolled clients and Personal Home Care Aides (PHCAs) participating in California's In-Home Support Services (IHSS) program together in their training program.

The 23 CHRPT awardees offer diversity in approaches to adapting evidence-tested models to achieve the triple aim with their targeted populations. Fundamental to this process of adaptation is the capacity of each awardee to monitor the process of implementation, through continuous quality improvement and other self-monitoring policies and procedures, and to apply this monitoring to adjust implementation, to improve program fidelity, or to reform the intervention in more substantial ways. Some awardees and their partners, particularly those that are health care systems or State-level entities, have the in-house capacity for self-monitoring (e.g., Beth Israel Deaconess Medical Center, Johns Hopkins University, Pittsburgh Regional Health Initiative, Providence Portland, Sutter Health, University of North Texas, Vanderbilt University), while other awardees have brought in external partners to conduct monitoring and evaluation as an integral part of their intervention (e.g., California Long-Term Care Education Center and the University of California at San Francisco; University Emergency Medical Services and the University of Colorado Medical School). NORC's evaluation will consider the efficacy and impact of self-monitoring on the implementation process.

Summary, Evaluation Aims and Approaches

NORC's CHRPT evaluation is one of seven that together evaluate all 107 awardees in the first round of HCIA funding.² All seven evaluations are guided by an overarching evaluation research design developed during the first year of the HCIA funding period, including a logic model, conceptual framework, core research questions, and methodological approach. See the Appendix D for the full set of research questions to be addressed across all seven evaluations (Exhibit D.1) and research questions specifically for the CHRPT evaluation (Exhibit D.2). This general evaluation framework allows for some customization that reflects the particular characteristics of each of the seven groups of awardees. Consistency in approach and shared learning across evaluators is supported by an Evaluators' Collaborative convened monthly and by the concurrent development of a meta-evaluation under an eighth evaluation contract. The evaluations share the same set of broad evaluation objectives, namely, to document:

- Implementation effectiveness and efficiency
- Program effectiveness, for health outcomes, cost, quality, and equity
- Effectiveness of workforce training programs
- Impact on priority populations, for outcomes and cost
- Contextual factors that affect performance, both endogenous (awardee) and exogenous (environment).

Key outcomes of interest (core measures) across all 107 awardees include utilization (all-cause hospital admissions, hospital readmissions, emergency department visits) and total cost of care.

Data and Methods

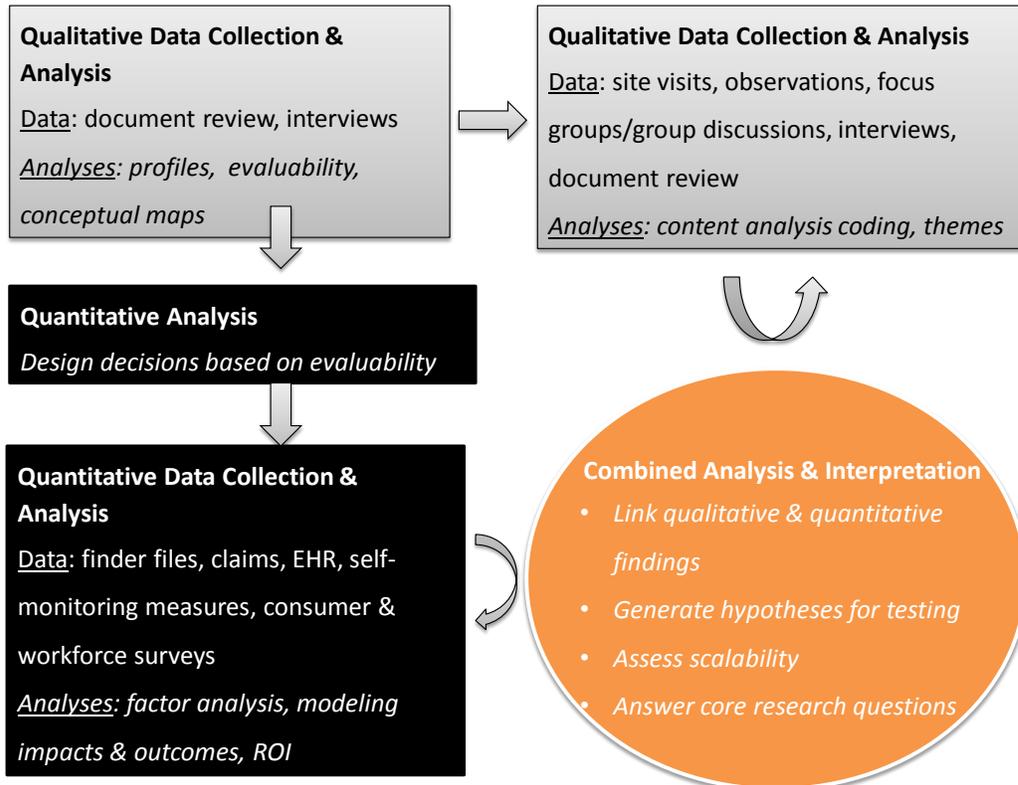
Mixed Analytic Approach

NORC's evaluation takes a mixed methods approach, using a multiple-phase, case-study design where each of the 23 awardees comprises a case. The phases include (1) evaluability determination, (2) concurrent primary (qualitative and survey) and secondary (claims, electronic health records,

² In addition to the 23 awardees assigned to the CHRPT evaluation, the remaining awardees are grouped in portfolios of disease-specific interventions, behavioral health, primary care redesign, community-based interventions, hospital-based interventions, and medication management & shared decision making.

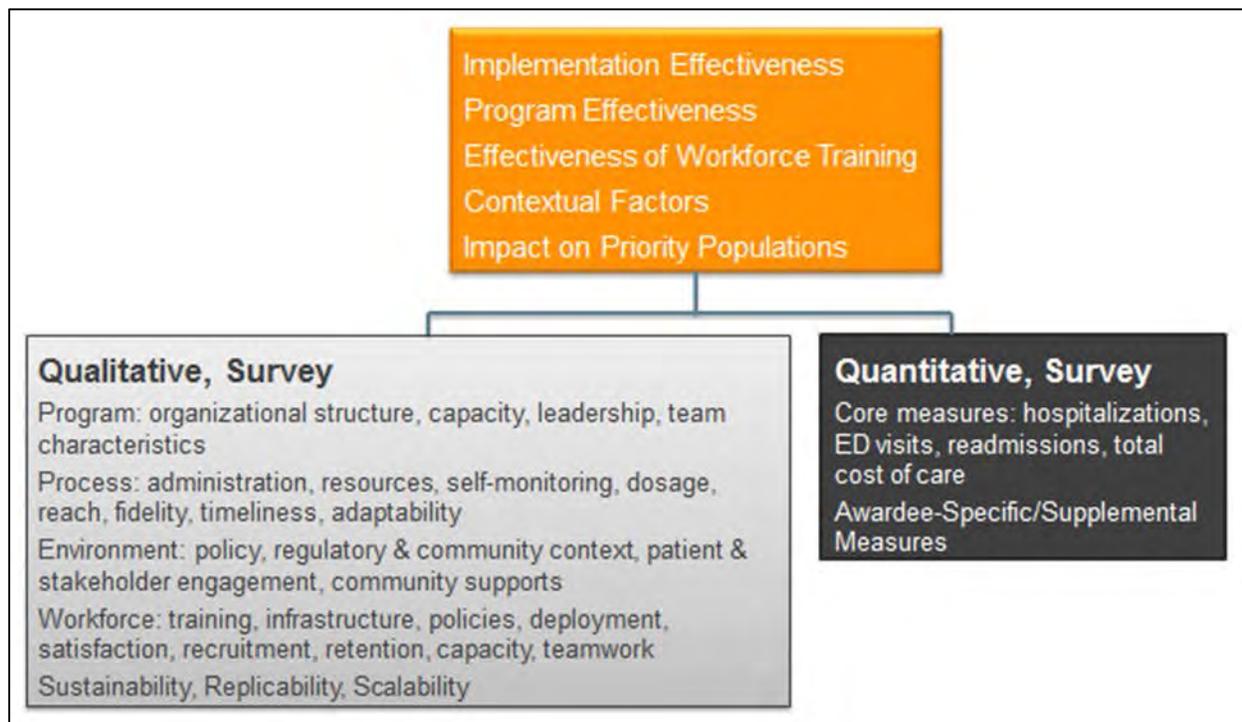
administrative records) data collection and analysis, and (3) mixed qualitative and quantitative data analysis and interpretation, depicted in Exhibit 2.1.

Exhibit 2.1: Evaluation Design, Complex/High-Risk Patient Targeting



Our mixed-methods approach uses claims-based analyses, surveys, and qualitative assessment of text data to address each of the evaluation’s key domains; Exhibit 2.2 depicts the measures used for each evaluation activity; the domains are listed in the top box, with major qualitative, quantitative, and survey tasks and measures listed in the lower boxes.

Exhibit 2.2: Evaluation Domains and Measures, Complex/High-Risk Patient Targeting



Rapid-Cycle Feedback

In keeping with the mission of CMMI and the purpose of the HCIA program, the evaluation is designed to offer feedback to awardees on an ongoing basis through quarterly reporting. NORC’s quarterly reporting is intended to complement and build on the quarterly reporting made by each awardee to CMMI. NORC’s quarterly reports are designed to offer usable, timely insights for awardees based on our ongoing evaluation activities; our first quarterly report (March 2014) presented an overview of NORC’s evaluation design and approach to assessing the evaluability of each awardee. NORC’s evaluation involves iterative cycles of data collection, analysis, and interpretation, with findings from each cycle shared with awardees as part of a joint learning process to support continuous quality improvement. The cycles reflect the rubric of continuous quality improvement and rapid-cycle change as applied to organizations and systems of care. Each cycle corresponds to a quarterly report. NORC’s second quarterly report (covering the period March 1 through May 30, 2014) included an update on evaluation methods and data collection and analysis, as well as summaries of observations from site visits conducted in the spring of 2014 and preliminary results from quantitative analysis for 2 awardees for which data were available and ready for use. The third quarterly report (covering the period June 1 through August 30, 2014) added quantitative analyses for greater numbers of awardees and more comprehensive qualitative

summaries for all 23 awardees. Subsequent quarterly reports may organize findings by theme, depending on data availability and the timeframe in which analyses are available.

Quantitative Approach

Our quantitative evaluation assesses the relationship between awardee programs and measures of health, quality of care, and health care costs and utilization using two approaches.

First, we link identifying information for program enrollees to their Medicare and/or Medicaid claims depending on the population they serve. This allows us to compare their health, costs and quality of care before and after enrollment in the program (pre-post design). Each awardee will provide information to identify the Medicare and Medicaid/CHIP beneficiaries served by their program (called a “finder file”). See Exhibit C.1, Status of Data Sharing Agreements and Finder Files, in Appendix C.

Second, we compare health outcomes, costs, utilization and quality of care between patients in the program and an external comparison group derived from matched patients enrolled in Medicare, Medicaid or CHIP. These external comparison groups enable comparison between HCIA interventions and usual care. In cases where we have both pre and post intervention data for both groups, we will use a difference-in-differences design. If we lack baseline data for the awardee’s treatment or comparison group, we use a longitudinal two-sample design for comparisons. Finally, in the absence of comparison group data, we use a post-intervention longitudinal design for awardee’s treatment group to assess whether longer duration of enrollment in the program is associated with better outcomes, costs, utilization and quality of care.

As noted above, our analyses look at three kinds of outcomes or dependent variables: measures of health, costs and resource use, and quality. Preliminary quantitative analyses presented in the quarterly reports have focused on the four core measures³: all- cause hospitalizations, emergency department (ED) visits, hospital readmissions, and total cost of care, as appropriate. In the case of awardees where the index event is a hospitalization, we have not included all-cause hospitalizations as an outcome measure and instead focus on readmission measures. Exhibit 2.3 provides an estimated timeframe for inclusion of quantitative analyses in NORC reports to CMMI. The timeframe is based on the timely receipt of finder files of beneficiaries served by each awardee and on adequate sample size (e.g., greater than 300 participants); it is likely that the timeframe will be adjusted over the course of the evaluation. NORC’s

³ The four core measures were identified by CMMI and intended to provide a consistent set of measures for comparison across all 107 HCIA awards.

second annual report (summer of 2015) will assess implementation effectiveness, looking, for example, at program dosage, fidelity, and reach. Our third annual report (summer of 2016) will consider program effectiveness and cost to estimate return on investment, sustainability, and the elements and approaches from the interventions that show promise for scaling up.

Exhibit 2.3: Timeframes and Quantitative Measures Planned for NORC Reports

Awardee/ Intervention	Target Population	Setting	Estimated Timeframe for First NORC Report of Findings
Beth Israel Deaconess Medical Center/ PACT	Medicare & Dually Eligible Adults	Hospital	QR3
California LTC Education Center/ IHSS Integration	Adults enrolled in Medicaid (MediCal) In-Home Supportive Services	Community	QR6
Courage Kenny/ APCC	Medicaid & Dually Eligible Adults <65 years	Community	QR5
Developmental Disabilities Health Services PA/ DD Health Home	Medicaid & Dually Eligible Adults <65 years living with I/DD	Community	To be determined
Johns Hopkins University/ J-CHiP	Medicare, Medicaid, & Dually Eligible Adults	Community & Hospital	QR4 (Hospital intervention) QR5 (Community intervention)
Johns Hopkins School of Nursing/ Project CAPABLE	Dually Eligible Adults >65 years	Community	QR6
LifeLong Medical Care/ LCCI	Medicaid & Dually Eligible Adults in health plan (Alameda Alliance for Health)	Community	QR5
North Carolina Community Networks/ Child Health ACC	Children enrolled in Medicaid or State Children's Health Insurance Program	Community	To be determined
Northland Healthcare Alliance/ CC for Seniors	Medicare, Medicaid, and Dually Eligible Adults >65 years	Community	To be determined
Palliative Care Consultants of Santa Barbara/ DASH	Medicare & Dually Eligible Adults >75 years	Community	QR3
Pittsburgh Regional Health Initiative/ PRHI	Medicare Adults	Hospital	QR3
Providence Portland/ Health Commons	Medicaid & Dually Eligible Adults	Community & Hospital	QR5
South Carolina Research Foundation/ HOMECARE+	Medicare & Dually Eligible Adults >65 years	Community	To be determined
St Francis Healthcare Foundation of Hawaii/ H.O.P.E.	Medicare adults	Community & Hospital	To be determined
Sutter Health/ AIM	Medicare adults within Sutter system	Community	QR3
University Emergency Medical Services/ HealthIER	Medicare, Medicaid, & Dually Eligible Adults	Community	QR4

Awardee/ Intervention	Target Population	Setting	Estimated Timeframe for First NORC Report of Findings
University of Arkansas for Medical Sciences/ Home Caregiver Training Program	Medicare, Medicaid, & Dually Eligible Adults using home health or home care services	Community	QR6
University of Iowa/ Transitional Care Team Program	Medicare, Medicaid, & Dually Eligible Adults	Hospital	QR5
University of New Mexico/ ECHO Care	Medicaid managed care Adults	Community	To be determined
University of North Texas Health Science Center/ BSL Transitions of Care Program	Medicare, Medicaid, & Dually Eligible Adults >65 years	Community & Hospital	QR5
University of Rhode Island/ Living Rite	Medicaid & Dually Eligible Adults with I/DD	Community	QR6
University of Texas Health Science Center at Houston/ High-Risk Children's Clinic	Medicaid enrolled children <18 years	Hospital	QR5
Vanderbilt University Medical Center/ IMPACT+INTERACT	Medicare Adults >65 years	Hospital	QR3

Our quantitative data analyses focus on studying the impact of the intervention within the awardee site(s), as well comparing the awardee’s patients with suitable comparison group patients, where possible. The methodological approach employed to answer the research questions varies by the setting and nature of the intervention. Thus, we approach each awardee differently. The remainder of this section outlines the general analytic approaches used.

We have identified two broad groups of interventions for the evaluation—post-acute interventions and ambulatory care programs. Post-acute care interventions focus on improving patient outcomes during or immediately after a discrete event, such as hospitalization. These qualifying events are readily identifiable from claims and allow for easy identification of program participants and potential comparison populations. Ambulatory care or community-based interventions seek to identify and care for participants in the out-patient setting and thus are more difficult to localize to a provider or are not always easily identified from claims records. Please refer to Exhibit 2.4 for a summary describing the methodological implications for each group; Exhibit 1.1 in Chapter 1 notes whether an intervention includes one or both settings (post-acute and/or community-based).

Exhibit 2.4: Methodological Overview by Intervention Type

Type	Post- Acute (Hospital) Interventions	Ambulatory Care/Community-Based Interventions
Intervention Overview	Participant selection event based, focused on transition from in-patient to post-acute settings	Participant selection from the community, often a convenience sample of patients seen in an ambulatory care/community-based LTSS/other community-based care setting
Design	Serial cross-section – with a post- and pre- intervention treatment group, and post- and pre-intervention comparison group. The comparison group consists of similar facilities or peer-providers.	Longitudinal cohort – comparing treatment cohort at two (or more) points in time. Anticipate creating comparison groups in the future.
Analytic Method	Difference in Differences	Longitudinal data analysis
Unit of analysis	Patient-episode	Patient
Comparison Group	Patient-episodes from similar facilities	Patients receiving usual source of care, identified from claims

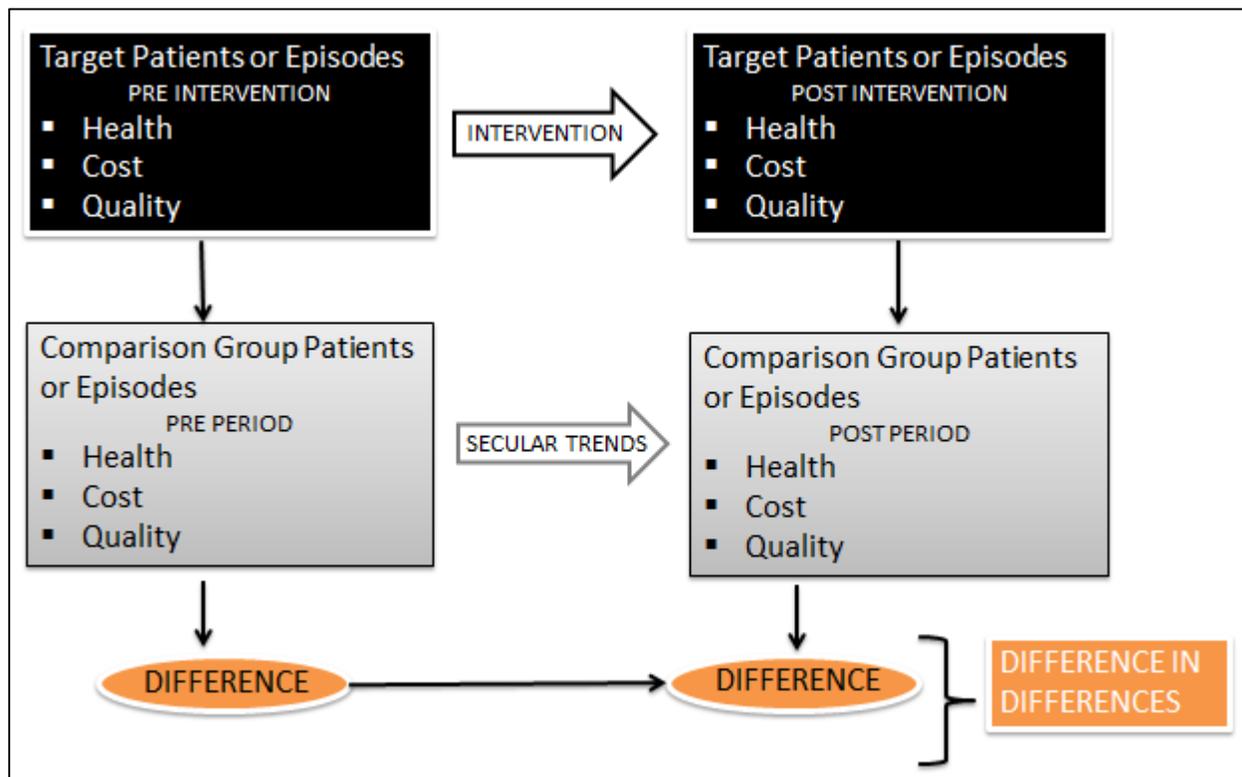
Post-Acute (Hospital) Interventions. Participants are enrolled in these intervention programs, when they are admitted to (or discharged from) a hospital inpatient setting. Although the interventions focus on different populations and use different approaches, they all have a common goal of improving health, increasing quality of care, and decreasing cost in the post-acute care period. Thus each episode of care provided an opportunity to intervene to improve outcomes and the patient-episode serves as the unit of analysis for these awardees. Since patients must be admitted to a participating inpatient facility to be eligible for the intervention, we are able to easily identify pre-intervention treatment group from those patients admitted to (or discharged from) the awardee facilities prior to the start of the HCIA program (pre-intervention period). Similarly, the comparison group is comprised of admissions to (or discharges from) non-participating facilities, during both the pre and post-intervention periods.

Combining the data for the awardee facilities and comparison facilities pre- and post-intervention, we construct a serial cross-section study. In this design, episodes of care (e.g., the period immediately following a hospitalization) occurring during a given calendar time period are compared to episodes occurring during another calendar time period. For example, episodes during the pre-intervention implementation period are compared to those episodes occurring during the post-intervention implementation period. Key assumptions of this design are that the patient-episodes during any given period are similar to patient-episodes in another period, which allows for comparisons to be made between time periods, and that intervention effectiveness is stable over time.

Difference-in-differences (DID) methods are then used to compare average outcomes between the awardee program and a comparison group in the pre- and post- intervention periods. The DID (or double

difference) is the difference in average outcome between the awardee treatment group and a comparison group before implementation of the intervention minus the difference in average outcome between the awardee treatment group and a comparison group after implementation of the intervention. This analysis allows us to study the impact of awardee programs compared to similar provider organizations, estimating an average treatment effect for the program while limiting the influence of selection bias (using the same groups pre- and post-intervention implementation) and secular trends (analyzing the comparison and treatment groups during the same calendar time period). See Exhibit 2.5 for a visual depiction of the difference-in-differences design. For hospital awardees, our unit of analysis in the DID design is episodes of care, while for the community awardees, our unit of analysis is the patient.

Exhibit 2.5: Difference in Differences Regression Evaluation Design for Hospital and Community Awardees



The overall intervention impact is the difference in average outcomes following intervention participation as compared to the average if these individuals did not participate in the intervention, after subtracting baseline scores and balancing on baseline characteristics. The comparison group provides an estimate of what outcomes would be if participants had not participated. Overall impact estimates are provided for the CMMI core measures including readmissions, ED visits, and total cost of care.

Ambulatory Care (Community-Based) Programs. Unlike the post-acute interventions, the ambulatory care awardee programs do not identify their participants based on acute events, like a hospitalization. In general, these programs focus on improving health, increasing quality of care, and decreasing cost for patients in the outpatient setting. Program participants are often a convenience sample of patients presenting to the awardee program site during the intervention period. Both Exhibit 1 in Chapter 1 and Exhibit 2.3 above note for each awardee whether the intervention is considered as hospital-based or community-based.

This program design presents challenges for a claims-based evaluation at the provider level. Patients are attributed to the awardee program during the intervention period by virtue of their enrollment in the program. However, patients can also be attributed to the awardee in the pre-intervention period using claims-based attribution rules. Thus we plan to conduct the analysis for ambulatory care/community-based awardees at the patient level by following patients longitudinally (across time periods) both before and after their enrollment in the program.

Identification of an appropriate comparison group of beneficiaries for ambulatory care/community-based awardees is also a challenge. Creating an appropriate comparison group requires a good understanding of the awardee's treatment population and the demographic characteristics, clinical characteristics, and health service utilization patterns associated with the treatment population. This may not be feasible in the case of every program, as claims data may not include enough information to identify a similar set of patients to use as a comparator. In our current quarterly reports, we focus only on the treatment population for ambulatory care/community-based awardees. Through our analysis of program participants, we will learn more about their characteristics and will determine whether a claims-based comparison group can be constructed for future quarterly reports.

In the absence of a comparison group, we have used a longitudinal cohort design to evaluate the intervention over time at the awardee site in current quarterly reports. The focus of our results is on the trends in hospital admissions, ED visits, and total cost of care for awardee program participants over time. For our analysis, we use generalized estimating equation (GEE) models with the appropriate functional form for the dependent variable, estimating the difference based on duration of enrollment in the program for all program participants. We also plan to examine whether intervention impacts on outcome measures differ by participant sub-populations, specifically focusing on disease, condition, and/or comorbidity sub-populations, variations by site for awardees with more than one site, and intervention sub-components. By comparing sub-populations within an awardee program, we will be better able to understand variability in outcomes across the entire program. This understanding will also help inform our comparison group

selection in future reports that will ultimately enable us to make inferences about the performance of the awardees relative to usual care, employing a difference-in-differences design.

Qualitative Methods

NORC’s qualitative evaluation uses document review, interviews, and site visits including focus groups and workplace observations to gather primary data complementary to the quantitative analyses of claims, survey, and other awardee program data. Text-based data will be analyzed to identify and articulate themes that

- inform our understanding of contextual factors that influence each awardee’s implementation experience,
- refine existing variables and suggest new variables for use in the quantitative analyses, and
- offer insight into how and why interventions succeed or fall short of their goals, and their prospects for scalability.

Evaluability of Awardees. Decisions about how qualitative data will be collected and analyzed reflect multiple considerations related to awardee and implementation characteristics that affect NORC’s ability to evaluate a given intervention credibly and with rigor. These characteristics include the following:

- **Number of sites or locations for a given intervention.** Some awardees are implementing their intervention at one or more clinics, or implementing different aspects of an intervention across multiple settings (e.g., hospital, skilled nursing facility, the home of a participating consumer). The NORC qualitative team is employing a purposive sampling strategy to select a site or sites based on diversity in performance (including but not limited to observations of a particular intervention at its most fully realized point of implementation), geography (e.g., urban, suburban, and rural locations), population demographics and socioeconomic status (e.g., age cohorts served by an intervention), language, and health or functional status of consumer participants.
- **Numbers of participants,** including both consumers and their informal or family caregivers and workforce trainees and intervention staff. Focus group best practices foster trust and comfort that encourages the sharing of frank perceptions and judgments; creation of such an environment is facilitated by anonymity among group members and the convening of participants who share demographic, socioeconomic, professional and other traits. For sites where a relatively small number of trainees with differing backgrounds are involved, for example, a group discussion or series of semi-structured interviews may be substituted for a focus group.

- **The intensity, duration, and quality of interaction** among participants, their informal caregivers, and the providers (including workforce trainees) delivering clinical care and services in connection with an intervention. The duration of interaction can suggest the boundaries of an appropriate time period for follow-up queries, for example, in recruiting patients served by an intervention to participate in a focus group convened within a limited period of time following the patient’s most recent interaction with the awardee.
- **The feasibility of eliciting information from patients or clients.** The high-risk patients with multiple chronic or medically complex conditions served by the 23 awardees in NORC’s evaluation portfolio are likely to have limited mobility or some cognitive impairment. Also, some awardees serve non-elderly adults who are transient and difficult to reach reliably by telephone. In many cases, a caregiver will be expected to serve as a proxy respondent or informant, especially where an intervention serves children, and in some cases, a small number of interviews or sustained observations of care delivery may be more appropriate than the convening of a focus group.

For administrative purposes, NORC has organized its qualitative team into three groups, assigning each group the lead for a cohort of awardees. The cohorts include 8 awardees with post-hospitalization, care coordination interventions; 8 awardees with interventions related to long-term services and supports or in-home care; and 7 awardees with specialized interventions that combine elements of post-acute care, long-term services and supports, and/or community-based interventions.⁴ Each cohort has dedicated staff members who serve as the point of contact for awardees and who plan and conduct site visits. Exhibit 2.6 lists the awardees by cohort.

Exhibit 2.6: Administrative Cohorts for NORC Evaluation

Post-Hospitalization/Care Coordination	Long-Term Services and Supports/In-Home Care	Specialized
<ul style="list-style-type: none"> ■ Beth Israel Deaconess Medical Center ■ Johns Hopkins University ■ Pittsburgh Regional Health Initiative ■ Providence Portland ■ St Francis Healthcare Foundation of Hawaii ■ University of Iowa ■ University of Texas Health Science at Houston ■ Vanderbilt University Medical Center 	<ul style="list-style-type: none"> ■ California LTC Education Center ■ Courage Kenny ■ Developmental Disabilities Health Services ■ Johns Hopkins School of Nursing ■ Northland Healthcare Alliance ■ South Carolina Research Foundation ■ University of Arkansas for Medical Sciences ■ University of Rhode Island 	<ul style="list-style-type: none"> ■ Lifelong Medical Care ■ North Carolina Community Networks ■ Palliative Care Consultants of Santa Barbara ■ Sutter Health ■ University Emergency Medical Services ■ University of New Mexico ■ University of North Texas

⁴ Assignment to a cohort reflects information given to NORC at the start of the evaluation, from the HCIA evaluation design and the awardees’ original application. Clarification of scope and approach, including subsequent formal changes to scope of work, may not be accurately captured by these initial assignments.

Site Visits. NORC is conducting one site visit during 2014 for each awardee and a follow-up site visit in 2015 for a subset of awardees in its portfolio. The two-day site visit is an opportunity to gather a variety of qualitative data, through semi-structured interviews and observations as well as focus groups and less formal group discussions. Decisions about the locations to be visited (for awardees with multiple sites), the use of focus groups versus group discussions or interviews, the identity and roles of interview respondents, and the nature of any direct observation are tailored to each awardee.

Site visit planning is an iterative process to develop data collection strategies for each awardee, while maintaining consistency in domains of inquiry across all primary data collection activities (qualitative as well as survey). Qualitative data collection incorporates a number of strategies to address threats to credibility, including how a respondent may react personally (reactivity) to an evaluation team member; biases that evaluators bring to the task of observing and recording data; and biases that respondents express verbally or behaviorally. These strategies include the triangulation of observations from multiple sources (including quantitative data and findings), the use of frequent team debriefings to confirm or challenge observations made by an individual evaluation team member, sharing of draft notes with the awardee and selected respondents to confirm accuracy, and the creation of an audit trail of memoranda and documentation internal to the evaluation. In addition, site visit interviews and focus groups will be recorded and transcribed (with appropriate consent given by group participants and interview respondents), to supplement and verify written notes.

As of October 2014, NORC has conducted a site visit for each of the 23 awardees; Exhibit B.1 in Appendix B displays the full schedule. Site visits are a key source of primary qualitative data, supplementing program document review and the series of telephone interviews that NORC has conducted with CMMI project officers and all of the awardees. A subset of awardees will be selected for a second, follow up site visit, to be scheduled for the spring of 2015 (February–May). A final decision about second site visits will be made by the NORC team in late 2014, in consultation with CMMI and the awardees. An awardee will be considered for a second site visit if substantive changes in implementation are anticipated following the first site visit; if the awardee’s intervention is being implemented in multiple locations and NORC’s first site visit does not permit a balanced sampling of these locations (for example, observing locations with different types of strengths and challenges); or if an awardee’s intervention is so complex that the initial site visit does not afford adequate time to observe all key components of the intervention or to meet with all key stakeholders and partners. A second site visit is also advisable where an awardee is judged to be exceeding expectations in terms of intervention performance. See Appendix B for further detail on the first round and proposed second round site visits, and on NORC’s methods.

Qualitative Data Procedures. Analysis of text data from primary data collection (interviews, site visit observations, focus groups), as well as program document review, is being conducted by means of coding to develop themes and categories of interrelated themes. NORC bases our codebook on the HCIA meta-evaluator’s comprehensive set of domains and sub-domains for all 107 awardees; we have created a streamlined group of four code families to capture the major themes of the evaluation of complex/high-risk patient targeting awardees, related to program, process, environment, and workforce; observations related to effectiveness are clustered under the process family, given that outcome measures are being assessed through the quantitative arm of the evaluation. Appendix B offers additional detail on NORC’s coding and analytic approach.

Survey Methods

NORC is collecting and analyzing primary data from two general types of surveys, one focusing on consumer and caregiver experience with awardee interventions and the other on the preparatory and work experiences of awardees’ trainees and staff in redesigned care delivery systems. The survey data will fulfill two objectives: to learn more about each intervention and to enable comparisons among the 23 awardees. The specific approach with respect to survey data collection varies among the awardees. In some cases, NORC is designing and administering our own survey; for other awardees NORC is collaborating in the design and fielding of an awardee’s own survey; and finally, NORC will receive raw survey data from some awardees rather than contributing to the design or fielding a survey directly. For sites where fewer staff has been trained, we use qualitative methods (interviews, focus groups or group discussions, semi-structured worksite observations) to collect data on training experiences, using the same set of domains as the survey, with the understanding that the comparability of narrative with survey responses is limited. Exhibit 2.7 lists the survey domains.

Exhibit 2.7: Planned Domains for NORC Surveys

NORC Surveys
<p>Consumer/Caregiver Experience Survey</p> <ul style="list-style-type: none"> ■ Access to Health Care & Human Services ■ Participation & Experience with Care Coordination ■ Medication Management ■ Relationship with Providers, Community Health Workers/Navigators/Peer Educators, & Direct (personal) Care Aides ■ Patient Autonomy, Self-Determination, Intervention Support for Patient Goals ■ Patient and Caregiver Satisfaction & Confidence in Care System ■ Experience of Informal (unpaid family) Caregiver with Intervention ■ Patient & Caregiver Activation ■ Health Status (general, specific conditions addressed by an intervention) ■ Functional status (mobility, self-care, usual activities, pain, anxiety & depression, fragility, cognitive status, communication-related impairments, quality of life)
<p>Workforce Trainee Survey</p> <ul style="list-style-type: none"> ■ Worker Satisfaction ■ Changes in Beliefs & Attitudes ■ Changes in Knowledge & Skills ■ Changes in Behavior ■ Interprofessional Teamwork ■ Intervention-Specific Competencies (e.g., use of electronic health records, motivational interviewing) ■ Training Experience ■ Systematic (environmental) factors

Beginning in March 2014 NORC has engaged in discussions with each awardee to determine the feasibility and relevance of both consumer and workforce surveys. For example, an awardee program with fewer than 10 or 12 staff in all capacities is not practical for a workforce survey; interviews on site would be the better way to collect information on training and on-the-job experience. If a consumer or workforce survey is feasible and likely to be informative, we consider, in consultation with the awardee, whether NORC will field its own survey, coordinate with an existing or planned awardee survey, or forego a survey in favor of other approaches to data collection. These discussions address questions about survey instruments, mode, timing and frequency of administration, sampling, and data management and follow a standard survey development protocol. Design of survey instruments and decisions about modes of administration, when to field the surveys, sampling frame, and other aspects of survey development are tailored to each awardee so that NORC’s surveys build on and complement awardee data collection efforts. This minimizes duplication of effort and administrative burdens on awardees and the beneficiaries that they serve. Where NORC and the awardee consider a coordinated survey effort, we discuss strategies to mitigate biases that may be introduced by the addition of questions or a change in the order of questions and the relative advantages of a joint survey effort as compared with a stand-alone survey by NORC. Appendix B includes further detail on NORC’s survey planning.

Data Analysis and Interpretation. As described in the Overview above, analysis and interpretation rely on a mixed methods approach. For qualitative data, content analysis will be used to develop themes within, between, and across the 23 awardees, each of which comprises a case study. These themes will be considered in light of quantitative findings and used to interpret quantitative results. Qualitative findings will be used to refine and create independent variables for quantitative analyses and to test new hypotheses generated by the quantitative side of the evaluation: to explicate what aspects of a particular intervention work for which populations, how, and under what circumstances (e.g., realistic evaluation). Both qualitative and quantitative analyses will be synthesized to answer the core research questions and to address the issue of scalability for all awardees.

Approach to Workforce Analyses

The NORC complex/high-risk patient targeting evaluation includes a sustained focus on new and expanded workforce roles and related training as part of the interventions fielded by the 23 awardees in our portfolio. The Kirkpatrick model of training program effectiveness guides the design of data collection and analysis.⁵ This model directs our assessment to consider how training influences (1) how participants react to the training; (2) to what extent participants improve knowledge and skills as a result of the training; (3) to what extent participants change their behavior on the job as a result of the training; and (4) what benefits to the organization result, and in particular, what impact does the training have on core outcome measures? See Exhibit 2.8 for a diagram summarizing the Kirkpatrick model.

Exhibit 2.8: Kirkpatrick Model, Evaluating Training Program Effectiveness



⁵ Kirkpatrick, Donald L. 1994. Evaluating training programs: the four levels. San Francisco: Berrett-Koehler. See also “The Kirkpatrick Model,” at <http://www.kirkpatrickpartners.com/OurPhilosophy/TheKirkpatrickModel/tabid/302/Default.aspx>, accessed 10/13/2014.

Evaluation of workforce components is integrated throughout all stages of NORC's evaluation design, following the same mixed methods approach. Numeric data are being gathered from awardee self-monitoring measures, program document review, and trainee and workforce surveys, to be analyzed by means of descriptive statistics and incorporated as variables in both the modelling and factor analyses. Text data are being gathered through site visit interviews, focus groups/group discussions, and workplace observations, with interpretation through theme-based coding.

Plans for Future Reports

NORC plans to present enriched and expanded results in each successive report, as more data become available and analytic findings are generated from these data.

- Quantitative, based on claims, electronic health record, and/or administrative data. Findings related to core outcome measures, as well as supplemental measures as indicated for each awardee, will be generated for greater numbers of awardees in each quarterly report, as data sharing agreements are finalized and finder files are transmitted to NORC, enabling analysis. Exhibit 2.3, earlier in this chapter, includes the estimated timeframes for presenting findings related to program effectiveness; these estimates will be updated in subsequent NORC reports.
- Qualitative, based on site visits, program document review, and telephone interviews. With the completion of the first round of site visits in October 2014, a robust set of case studies will be prepared, using the initial set of awardee chapters in this report as a starting point and the finalized code book as a basis for analyses. Subsequent quarterly reports will link themes and categories of themes identified through coding to both quantitative and survey data, forming the basis for answering the evaluation's set of core research questions in the second and third annual reports.
- Survey, based on free-standing, coordinated, or awardee surveys. Findings drawn from survey results, for one or more awardees, will be presented in each quarterly report, as surveys are fielded and as data sharing agreements allow for NORC to analyze existing survey data managed by the awardees.

Cross-Awardee Findings

Overview of Chapter and Approach

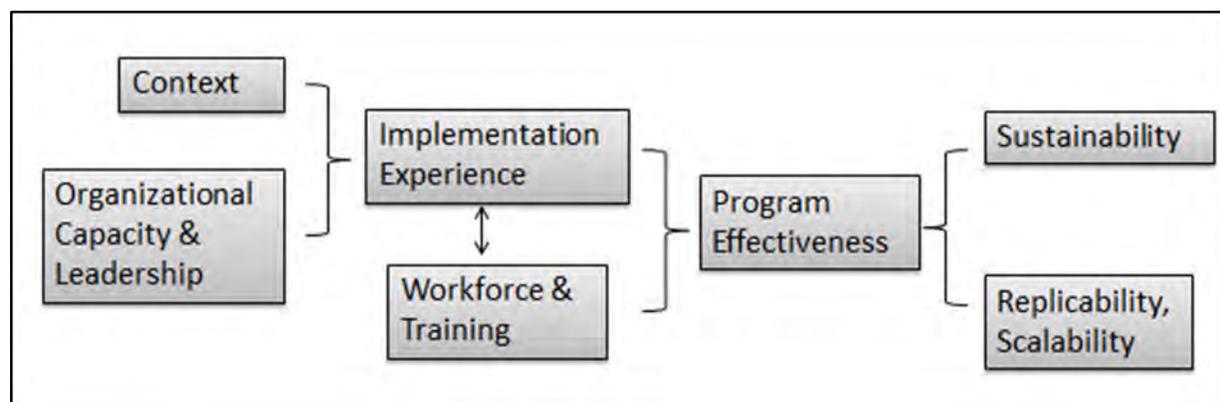
This chapter highlights observations gleaned by the NORC evaluation team during the first year of our qualitative data collection and analysis with a focus on noteworthy common themes and implementation experiences among the awardees. The NORC team has learned a great deal from the site visits to date, as well as the numerous telephone discussions we have had with all 23 awardees. We have spoken with project and clinical leaders, project managers, data analysts, and awardees' own evaluation staff and subcontractors. In the spirit of rapid-cycle evaluation, we are presenting our early findings in this report and simultaneously using them to guide our ongoing data collection and analysis. We are in the process of coding and systematically analyzing all of the interviews, focus groups, and document reviews conducted to date; Appendix B contains details on how that work is being conducted and an estimated timeframe for completion.

NORC's assessment of program effectiveness is largely based on quantitative analysis, combined with survey findings and limited qualitative data from the site visits. For this reason a discussion of program effectiveness will be included in subsequent NORC reports to CMMI, once more data are available and have been analyzed. Also, this chapter only briefly touches upon issues and circumstances encountered by multiple awardees. For more detailed presentation of information, consult the individual awardee chapters. Despite these caveats, the commonalities among different awardees' accounts about specific aspects of their work, challenges they face in launching new services and approaches to care, and particularly successful or rewarding workflow redesigns, staff roles, or collaborations merit examination at this early stage in the evaluation process and will help to frame research questions and working hypotheses for the final evaluation.

The remainder of the chapter is organized topically. First, we discuss contextual factors affecting project design and implementation, including regulatory and marketplace conditions and organizational capacity and leadership. Next, we examine awardees' implementation experience with respect to participant recruitment; communications strategies and use of health information technology (IT) tools; and efforts aimed at patient, client, and informal caregiver engagement and strengthening self-efficacy. Third, we report on awardees' efforts in workforce recruitment, training, teamwork, and deployment of novel roles. Fourth, we address awardees' prospects for and progress toward sustainability and replication or scaling up of their interventions. We conclude the chapter with a discussion of evaluation issues that have emerged as we have conducted our initial data collection and analyses. Exhibit 3.1 depicts the major

domains where initial observations are offered in this chapter, arrayed from left to right, to parallel the general HCIA logic model for the awardees.

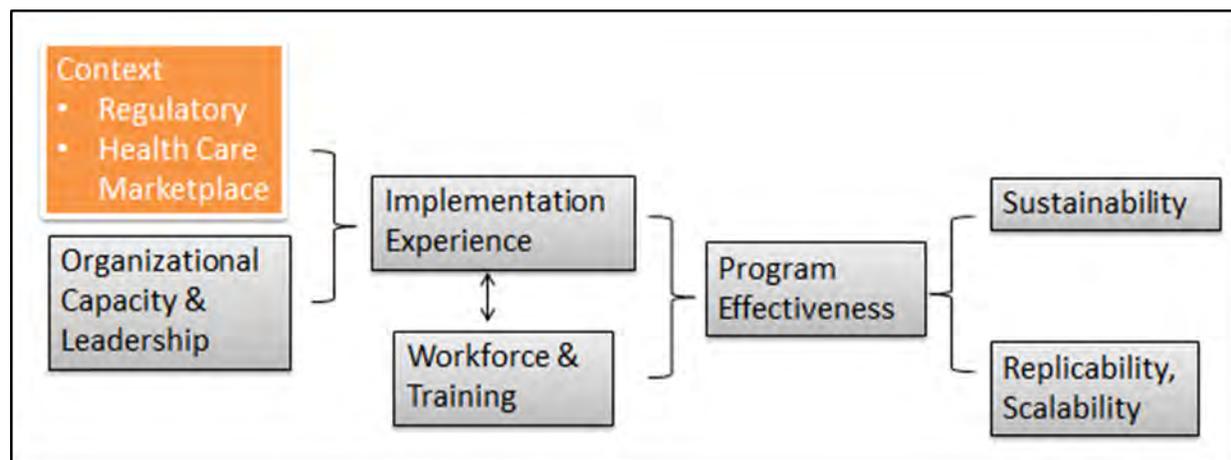
Exhibit 3.1: Cross-Awardee Findings: A Visual Guide



Contextual Factors

HCIA interventions are being implemented by awardees diverse in sponsorship and scope, and within settings that vary in terms of State regulatory environment and local or regional health care marketplace conditions. These contextual factors have shaped the design of the health care delivery innovations and affected the ease and pace of implementation. For the 23 HCIA awardees in the complex and high-risk patient portfolio, State licensure, regulation of facilities and services, and management of the scope of practice for health workers establishes the conditions under which awardees have developed or adapted models. State licensure and regulation also affects the prospects for continuation of some interventions after the conclusion of HCIA funding. Similarly, the dynamics of local health care markets and economic imperatives have, in some cases, motivated awardee innovations and still continue to affect their implementation efforts today. For the several awardees that have planned or are launching innovations in more than one State, variations in State Medicaid policy, regulations, and marketplace conditions have proven particularly challenging. Finally, the internal capacity and resources of awardees, including their pre-award experience, have affected the path that implementation has followed in the case of each. Exhibit 3.2 highlights the contextual factors discussed in this section.

Exhibit 3.2: Cross-Awardee Findings: Contextual Factors



Regulatory Considerations

Facility standards, professional licensure or worker certification requirements, and delineation of scope of practice have motivated and shaped several HCIA interventions. In particular, those awardees that offer in-home services (Beth Israel, Palliative Care Consultants, South Carolina, Sutter Health, University of Arkansas, and UNT/Brookdale) have had to contend with facility and personnel licensure and certification standards. For example, California regulations governing congregate living facilities, such as subsidized public senior housing and assisted living residences, prohibit facility staff from assisting residents with any kind of medical care. This prohibition has led to reliance on 911 calls, emergency response, and emergency department (ED) use for relatively minor mishaps in the home (e.g., small cuts, simple falls). The Palliative Care Consultants of Santa Barbara’s Doctors Assisting Seniors at Home (DASH) addresses this gap by dispatching an experienced registered nurse (RN) to the resident’s home. Although this service is non-billable, it is ultimately a less costly and more appropriate service.

For awardees that target Medicaid enrollees, regulations regarding data privacy and interpretation of HIPAA by State agencies or health plans have often meant that personal identifying information (PII) is not available for use as envisioned in recruiting patients, monitoring implementation, or evaluating cost-effectiveness. Within NORC’s portfolio, the California Long-Term Care Education Center (CLTCEC), North Carolina Community Networks (NCCN), and the University of New Mexico (UNM) are each addressing this challenge in different ways.

- To identify and recruit participants, CLTCEC has conducted outreach to prospective enrollees through the direct care workers who serve them (who are trained as part of the intervention).

- NCCN has developed an alternate set of risk algorithms based on hospital discharge (ADT) data and program data from partner providers.
- UNM continues to test revised versions of a clinical risk algorithm based on Medicaid claims but also seeks referrals from providers at each of its sites.

Another example relates to workforce training. State requirements for the certification of workers who assist homebound patients may specify training hours and curriculum requirements. The University of Arkansas for Medical Services (UAMS) advocated for new State requirements on training for home caregivers, such as the creation of a UAMS training program. The State requirements that have recently been adopted have created both student and home care agency demand for the training UAMS provides. However, extending the well-regarded UAMS (Schmieding Center) training to caregivers in other States may pose a challenge as the Schmieding curriculum may differ from State-approved curriculum for home care workers in other States. In Texas, for example, UAMS has had to adapt its curriculum to comply with State requirements. The operation of the UAMS program in several sites also allows us to examine the impetus for enrollment provided by Arkansas's new training requirement compared with enrollment in others States that have not recently changed their training requirements.

Health Care Market Environment

The local market for health services affects all aspects of HCIA interventions, from the decision of awardees to apply for an award to the nature of the proposal submitted, to the potential impact of the intervention. Awardees contend with fiscal and competitive conditions in their State and localities that influence partners recruited to participate in the intervention and opportunities both to spread their initiative and to effect a financial balance internally to sustain the intervention beyond the period of HCIA funding. Medicaid reforms and initiatives at both the State and federal levels in particular have both underpinned or stimulated the development of HCIA interventions (CLTCEC, J-CHiP, Providence Portland) and, in other cases, create difficulties for the awardees' envisioned programs (DDHS, UT/Houston). Market uncertainties have also offered both opportunities and challenges to the interventions, as have the emergence of accountable care organizations (ACOs) and other forms of market consolidation (Beth Israel, J-CHiP, Pittsburgh, St. Francis, Vanderbilt).

Medicaid reforms. Oregon has created a regulatory and financial environment that underpins the HCIA project's sustainability and replication within the State. Oregon's 2011 legislation mandating Coordinated Care Organizations (CCOs) as the organizational framework for the State's Medicaid program facilitated the establishment in the Portland metropolitan region of an integrated and tailored set of services for enrollees. Under the Providence Portland HCIA award, the Tri-County Health Commons

project is administered by Health Share of Oregon, a CCO comprised of health systems, county health departments, and the CareOregon Medicaid plan. The global budget that CCOs receive to serve their enrolled Medicaid population affords the project great flexibility in tailoring the intensity, type of care coordination, and patient engagement services to the needs of particular patients and helps in staffing these new services with personnel who are not licensed to bill directly for their services.

Other HCIA awardees have not experienced this kind of alignment between their initiatives and their health care financing and payment environment. Developmental Disabilities Health Services (DDHS) offers an example of the kind of mismatch between the design of the intervention and the payment environment that is critical for most awardees as they consider their prospects for sustaining their interventions once the HCIA funding ends. DDHS provides a health home at six sites in New York and New Jersey for Medicaid and Medicare/Medicaid dually eligible young adults and adults with intellectual and developmental disabilities. Trained nurse practitioners offer care coordination, with coordination of mental health services (behavioral and psychiatric) with primary care a particular emphasis. With its emphasis on services integration, the model aims to achieve greater efficiency and quality of care and could lead to overall cost savings. DDHS anticipated internalizing savings from more efficient and appropriate utilization by receiving capitated payments through Medicaid managed care organizations (MCOs). However, the awardee's implementation strategy became problematic when Medicaid MCOs in New Jersey, operating under a capitated payment structure themselves, declined to proceed with capitation payments to DDHS and insisted on a fee-for-service payment structure.

ACOs and other forms of market consolidation. The Beth Israel and Deaconess Medical Center in Boston undertook its Post-Acute Care Transitions (PACT) program to improve post-discharge care for, and reduce readmissions among, Medicare patients discharged from the Center. This intervention follows and is concurrent with a number of other readmission reduction initiatives in Boston and the State of Massachusetts. Motivation for instituting PACT to improve primary care and reduce the use of inpatient and ED services stemmed both from the Medicare Readmissions Reduction Program (and related payment penalties) and Beth Israel providers' membership in the Beth Israel Deaconess Care Organization (BIDCO), a physician and hospital network and an accountable care organization (ACO), which provides financial incentives for high-value performance.

Another awardee, Vanderbilt University Medical Center, is leveraging its involvement in its HCIA-funded project by participating in a readmission collaborative with SNFs and other facilities in its extended market area. The collaborative's goal is to build toward a regional clinically integrated network (CIN). Such a collaborative is an attractive prospect for the participating institutions in terms of market

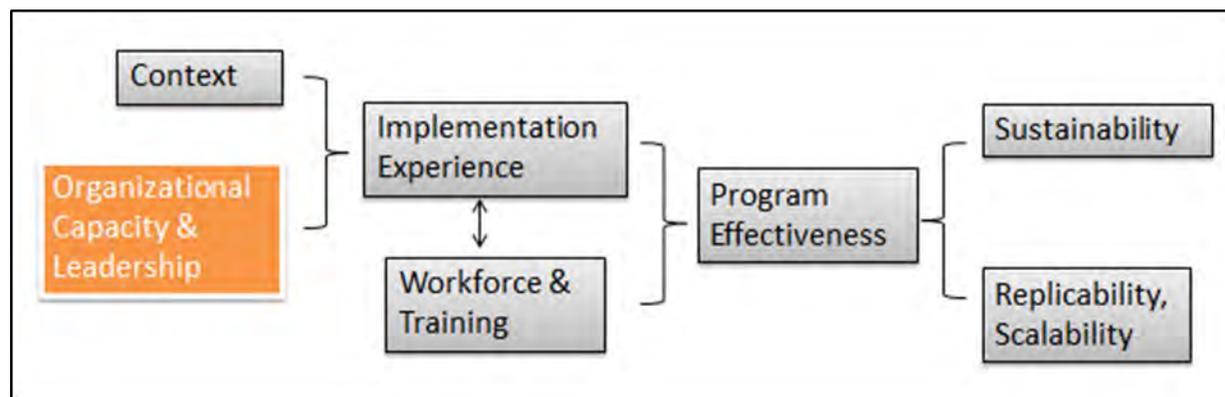
share and financial performance and favors the wider spread of best practices in discharge planning and SNF patient management. However, the awardee's investment in additional hospital staff and training of the staff at current partner SNFs may not prove to be as successful in the case of a broader group of SNFs that have not worked with Vanderbilt before (as have the current SNF partners) or that do not have the same degree of internal and corporate management support as the current partners enjoy.

The unsettled nature of many local health care markets, particularly highly competitive markets with multiple health plans and large providers, has made providers cautious about participating in some HCIA projects. Despite the promising future of global payments, most hospitals continue to depend on inpatient admissions for revenue and physician practices are wary of referring patients or sharing patient information with potential competitors. Despite differences in the nature of their interventions and requirements placed on partners or referring providers, Pittsburgh Regional Health Initiative, Sutter Health in California, and St. Francis of Hawaii have each experienced initial difficulty in recruiting hospital or physician partners for their HCIA interventions.

Organizational Capacity and Leadership

Without exception, NORC's interactions with the 23 awardees, facilitated by the awardees' CMMI project officers, have been constructive, open, and frank. At this early stage of our evaluation, we are not prepared to make a definitive assessment of the organizational capacity and leadership of the HCIA awardees. However, in telephone interviews and at site visits, awardee leadership, staff, and partners have been consistently focused, able to communicate clearly their broad mission and short-term objectives, and have been enthusiastic about and deeply committed to their work. Thus, in this section we take note of how organizational type, size of the sponsoring organization or collaborative, and scale of the intervention appear to affect implementation of the awardees' interventions. Exhibit 3.3 highlights the relationship of findings about organizational capacity and leadership to other evaluation domains.

Exhibit 3.3: Cross-Awardee Findings: Organizational Capacity and Leadership



The HCIA awardees in the Complex, High-Risk Patient Targeting portfolio range in size and organizational characteristics. Ten are sponsored by universities or academic health centers, two by health systems (Sutter Health, Courage Kenny); several by physician practices (Palliative Care Consultants, University Emergency Medical Services) or clinics (Lifelong Medical Care, Developmental Disabilities); six by foundations or other nonprofit organizations (St. Francis, North Carolina, California LTC Education Center, Northland, Pittsburgh, South Carolina) and one regional Medicaid Coordinated Care Organization (Providence Portland) .

A number of awardees (California LTC Education Center, Pittsburgh, Johns Hopkins University J-CHiP, Providence Portland, St. Francis, Sutter Health, University of Arkansas, University of Iowa, University of North Texas, Vanderbilt University Medical Center) have interventions with multiple sites and some have different interventions operating at different sites. The relationship between service delivery sites and the awardee also vary. For example, Sutter Health’s 14 sites all include at least one Sutter-affiliated partner, while at Pittsburgh and Vanderbilt the sites are independent partners of the awardee. In the case of Providence Portland, autonomous health systems and public agencies are financially linked and share data, bound together by the global Medicaid capitation to the CCO, Health Share.

As might be expected, preliminary observations find that interventions are adapted by each site, reflecting differences in local needs, staffing, resources availability, and leadership. Multiple-site interventions share the challenge of aligning and integrating their sites, even when coordinating programs in-house as, for example, across units in a hospital, such as with JCHiP. While corporate support and leadership for the HCIA activities certainly can aid in consistent implementation across sites even in these cases local variations in execution exist. For example, 21 of the 23 SNFs partnering with Vanderbilt are part of a

national corporation that supports the implementation of INTERACT, a communications tool, across all of the sites.

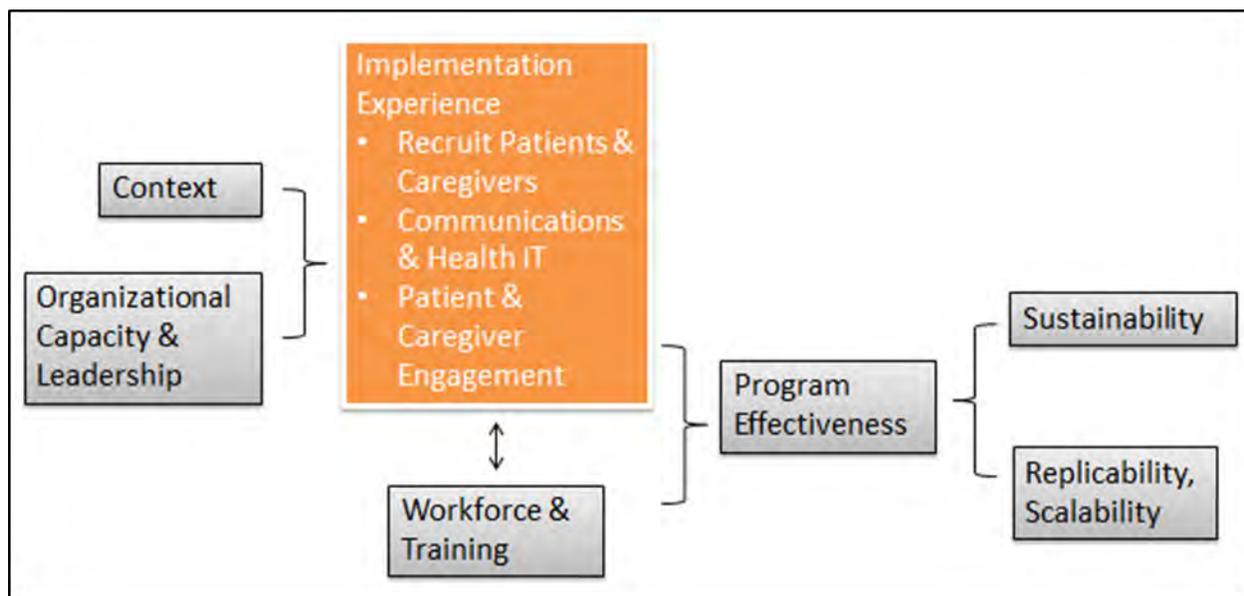
For some awardees, their intervention closely reflects the organization's previous work and through a change in scope, reach, or both, builds upon institutional strengths and experiences. At UAMS, for example, the Schmieding Center has a national reputation in training direct care workers, which has been its focus since its inception in 1999. Similarly, Courage Kenny, which serves as a community-based medical home for nonelderly adults with disabilities in Minnesota, has historically involved volunteers and includes them in the HCIA intervention, and has co-located psychiatry and behavioral health services with physical health services, thereby expanding the role of Courage Kenny's care coordinators.

Smaller scale projects embedded in research organizations or academic health centers (Beth Israel, St. Francis, UT/ Houston, Vanderbilt) are designed and tightly managed by seasoned clinical research directors. Such programs, however, may not have a natural path to expansion—scaling up or replication—because they depend on the discipline and structure of clinical research projects such as a randomized clinical trial. A commitment to the intervention's spread by the parent organization, or a commercial partner (as in the cases of Sutter Health and UNT/ Brookdale), is likely critical to these programs' growth and success.

Implementation Experience

Much of NORC's qualitative data gathering focuses on the process of implementation. In particular, we are looking beyond the design of the intervention to discern what changes, if any, are being made to the intervention post-launch and for what reasons, and the extent to which these changes entail new approaches to achieve the intervention's objectives. In this section, we discuss various facets of awardees' implementation experiences. These observations are based on our review of program documents, telephone interviews, and site visits to date. Exhibit 3.4 highlights factors related to implementation experience discussed in this section.

Exhibit 3.4: Cross-Awardee Findings: Implementation Experience



Recruiting Patients and Their Caregivers

The process of identifying patients, clients, or residents with complex health needs and at high risk for hospital or nursing home care has been an early step in the awardees’ planning and implementation of their interventions. This work has involved targeting and recruiting patients and their caregivers to participate and to maintain their participation. In some cases, the ongoing challenge of recruiting patients or clients reflects the lack of access to primary care among target populations, while in others populations, it reflects the lack of continuity and coordination across providers and sites of care or the reluctance of primary care providers to make referrals for additional services. More fundamentally, recruiting challenges may be a result of the novelty of some of the services being offered, as many of the programs are addressing gaps in care that have not been formally addressed before. Also, these patients and clients, by definition, have multiple health problems that add to the difficulty of connecting them and their families to new and added services.

To date, NORC observations on patient recruitment indicate that almost all awardees seek more enrollees; only two, Palliative Care Consultants of Santa Barbara and Vanderbilt University Medical Center, have reported the need to balance patient demand with the limits of resources available under HCIA funding. Some awardees note the importance of making a significant commitment to outreach and recruitment (Developmental Disabilities, University of Rhode Island, Courage Kenny), given the likely functional and cognitive limitations of their consumers: adults residing independently in community settings who live with intellectual or developmental disabilities, dementia, or traumatic brain injuries. Some awardees

recruit participants directly on hospital inpatient units (Sutter Health, University of Iowa, Beth Israel, Pittsburgh, Vanderbilt), and many solicit endorsements to patients and referrals from organizations that are either partners in the intervention or stakeholders, including home care and home health agencies (South Carolina, St. Francis), independent physician practices, federally qualified health centers (FQHCs), and other clinics that serve high-risk patients (UEMS). Exhibit 3.5 depicts basic approaches to recruitment used by awardees to date; the list is not exhaustive.

Exhibit 3.5: Selected Strategies to Recruit Patients and Caregivers

Home care & home health agencies	Physician practices & FQHCs	Hospital inpatient units	Risk algorithm
<ul style="list-style-type: none"> •California LTC Education Center •St. Francis •South Carolina Research Foundation 	<ul style="list-style-type: none"> •Developmental Disabilities Health Services •Lifelong Medical Care •Univ. Emergency Medical Services 	<ul style="list-style-type: none"> •Beth Israel Deaconess MC •Pittsburgh RHI •Univ. Iowa •Vanderbilt Univ. MC 	<ul style="list-style-type: none"> •Johns Hopkins Univ. •North Carolina Community Networks •St. Francis •Univ. New Mexico

Most awardees also conduct personal outreach, either in person or by telephone. CLTCEC’s Voice for Better Care Campaign aims to recruit clients of the State’s In Home Services and Supports (IHSS) program and, through clients, their personal care assistants. Initial outreach is by phone, followed by home visits by outreach coordinators, and concluded with phone calls to motivate attendance throughout the 17-week training sessions that comprise the intervention. The University of Arkansas Medical Center recruits students for its home care worker training course directly, as home care agencies that employ its graduates are another source of students. Johns Hopkins University’s J-CHiP partners with two local nonprofits, Sisters Together and Reaching (STAR) and the Men and Families Center, to send Neighborhood Navigators to canvass block by block seeking residents to enroll within the targeted zip codes.

Finally, some awardees try to target their interventions to those who are high risk and most likely to benefit from their services by using one or more targeting algorithms to identify patients through claims data supplied by Medicare, Medicaid, or claims administrators (JCHiP, Providence Portland, St. Francis, Vanderbilt). Two of the awardees that have used such algorithms with Medicaid data have encountered significant challenges due to incorrect or incomplete/missing Medicaid data (University of New Mexico, North Carolina). In addition, the process of identifying patients through risk algorithms followed by outreach based on these leads can be time-consuming.

Strengthening Communications and Use of Health Information Technology

For all 23 awardees, improved communication is at the heart of their respective interventions. While one awardee, South Carolina Research Foundation, identifies itself as “high touch low tech” and does not have a health IT component, most awardees have created new software applications, reporting forms, and databases. These awardees have often modified existing IT systems in an effort to transfer information to intervention partners. Many awardees report encountering significant obstacles to achieving seamless information transfers and have improvised solutions that rely on a combination of faxes, customized case management systems, and even handwritten notes.

Perhaps not surprisingly, even large academic health centers such as Johns Hopkins Hospital and Vanderbilt internally support different electronic health record (EHR) systems for inpatient and outpatient care or even different EHRs by clinical service within the hospital. Sutter Health’s AIM uses no fewer than four data systems, including Midas, Epic, Access, and a dedicated home health case management system. Furthermore, for many of the awardees, the expansion of roles within the HCIA interventions to include non-clinical staff, like community health workers and non-licensed behavioral health specialists, has meant addressing or working around the lack of access by non-clinicians to hospital or clinic EHRs.

Care coordination and population health management are predicated on having communication platforms and information systems that fulfill the demands of these activities. Every awardee has had to work out an approach to data infrastructure, decide how to leverage existing EHR and health information exchange resources, and when and how to build new systems. For several of the awardees, the challenges go beyond communication barriers. Widely available EHR systems may not meet the needs of care coordination interventions; often they do not have fields for referrals or case management.

In response to the limitations of institutional EHRs, several awardees have developed their own case management or care coordination systems, either de novo or structured within a platform such as REDCap, a secure web application for building and managing online databases, or Salesforce, a commercially oriented customer relationship management (CRM) system that has been adapted for inter-organizational projects and service operations. For example, the University Emergency Medical Services HealthiER ED-diversion and primary care access intervention uses a customized case management application, Circe, as well as a hospital EHR for documentation. Sometimes, however, intervention-specific applications may not be embraced by partners because of practical concerns, such as dual entry of information. Notably, Providence Portland has developed a robust in-house care management tool that serves its targeted Medicaid population across multiple discrete interventions: PopIntel. The awardee’s

Health Resilience Specialists report great satisfaction with accessing and documenting clinical and administrative information in this system.

Finally, several awardees have implemented telehealth or telemonitoring tools to link providers to providers and providers to patients or to promote patient self-management. To replicate a virtual PACE model in rural areas, Northland uses a TeleCare Network for multi-site teleconferencing, and care coordination and PACECare Online software at each rural site as a real-time records depository. St. Francis implemented a self-contained, patient-driven commercial telemonitoring system that receives clinical information sent from the patient's home and creates reports for the awardee's telehealth nurses to follow-up, highlighting any values that fall outside of a patient-specific "normal" range. Both the University of Iowa program and University of New Mexico's Project ECHO use video consultations to deliver specialty consultation to primary care providers in rural areas.

Engaging Patients and Caregivers and Increasing Patient Self-Efficacy

Once a patient or informal caregiver is successfully recruited, a common next step for many of the awardees in this evaluation portfolio is patient education or engagement strategies. The cohort of awardees takes a variety of approaches toward the overall goals of increasing the capacity of patients and their informal caregivers to advocate knowledgeably and to manage the health of patients and obtain health and social services. The increased capacity for engagement and self-management on the part of patients and caregivers is seen as a driver of higher quality, lower costs, and improved health.

For some awardees, patient education is introduced around the topic of advanced care planning and the completion of a form for Physician Orders for Life-Sustaining Treatment, or POLST (Sutter Health, Palliative Care Consultants of Santa Barbara, Vanderbilt University Medical Center), catalyzing discussions that many primary care providers and families may be reluctant or ill-equipped to begin. Another group of awardees emphasize formal didactic sessions or curriculum in chronic disease self-management (Beth Israel, J-CHiP, Pittsburgh), sometimes linked with staff training in motivational interviewing geared toward inculcating a proactive approach on the part of patients and caregivers who are interviewed as part of the intervention (Johns Hopkins School of Nursing, Pittsburgh Regional Health Initiative, Northland). A third group includes workshops or one-on-one coaching for patients and their caregivers in independent living skills and integrates a disability rights and empowerment perspective into the goals of the program (Courage Kenny, Lifelong Medical Care, University of Rhode Island). Patients also get involved in implementing some of the interventions directly, whether entering their own health data and transmitting that data to a nurse remotely (St. Francis); learning to participate in developing one's own care plan in partnership with a Personal Home Care Aide that the client nominates to

participate in the intervention (CLTCEC); or, for parent caregivers of high-risk children, learning how to manage durable medical equipment and how to advocate for health services and long-term care services and supports (North Carolina Community Networks, University of Texas Health Science Center at Houston).

The centrality of patient and caregiver engagement brings with it the question of how to measure the intended changes, including behavior change, which may be reasonably attributed to participation in the intervention. A number of awardees use a version of the Patient Activation Measure (PAM)⁶ as part of self-monitoring, and Lifelong Medical Care is exploring other measures as well to better capture the learning experiences of its target group. Given the multifactorial nature of patient education and engagement, measuring the impact of awardees in this area moves beyond measuring changes in PAM to take into consideration factors related to education, poverty and system-level or environmental obstacles to change (e.g., homelessness or substandard housing, food insecurity, lack of access to health care), literacy, and empowerment (e.g., social supports) that influence health outcomes.

Where interventions include the development of a patient-centered care plan (SCRF, UEMS, Johns Hopkins School of Nursing), how can the impacts of patient-centeredness, patient commitment to intervention goals, or follow-through on related activities, such as referrals for social services, be measured? And for many of the awardees, the sheer loss to follow-up of enrolled patients presents an additional challenge to measuring the extent of education and engagement; some of the awardees have noted that enrolled patients may not keep appointments or return phone calls once an initial appointment has taken place (UEMS HealthiER follow-up after initial meeting with a community health worker; University of Iowa follow-up after hospital discharge). Further assessment of the awardees, both individually and as a group, may offer insight into what may be the realistic limits of patient education (and caregiver education) as a tool to improve health, wellbeing, and quality of care.

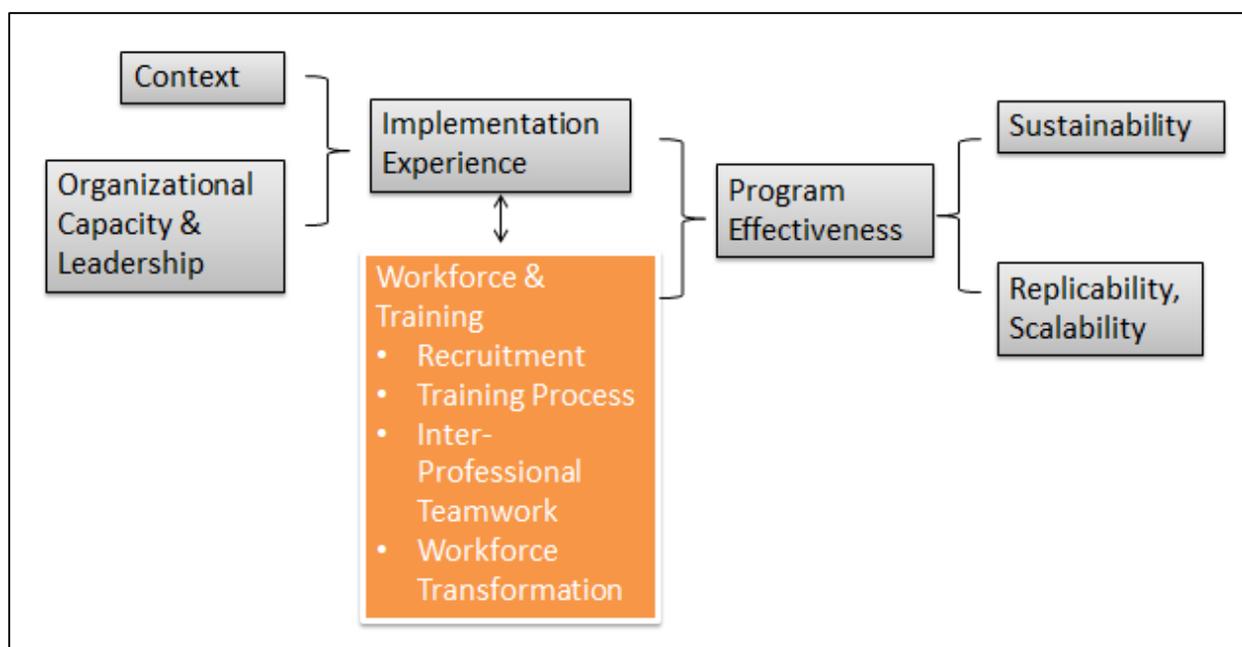
Workforce and Training

The Affordable Care Act of 2010 (ACA) has ushered in many new approaches to training and deploying the health care workforce. The 23 awardees in the CHRPT portfolio illustrate a number of these new experiments or proofs of concept in workforce transformation. This report offers a descriptive overview of these approaches, which support future analyses of training's impact on staff and on intervention

⁶ Hibbard, J.H., Stockard, J, Mahoney, E.R., et al. 2004. Development of the Patient Activation Measure (PAM): Conceptualizing and Measuring Activation in Patients and Consumers. *Health Services Research* 39(4 Pt 1): 1005–1026.

outcomes.⁷ NORC’s initial observations focus on the challenge of recruiting project staff, whether internally or as new hires, and making changes to project criteria for selected staff roles; the tension between formal, competency-based training and informal, experiential training in equipping project staff for roles that stretch existing knowledge, skills, and in many cases, scope of practice regulations at the State level; a commitment to inter-professional team work; and the transformation of workforce roles, especially for nurses, pharmacists, direct care workers, and community health workers, and the creation of entirely new roles for peer coaches and educators. Exhibit 3.6 highlights key factors related to workforce and training discussed in this section.

Exhibit 3.6: Cross-Awardee Findings: Workforce and Training



Recruitment

The awardees in the C/HRPT portfolio are competing for new hires in tight labor markets, especially for advanced practice nurses and data analysts in rural and inner-city locations (Northland as an example of the former, University Emergency Medical Services and Johns Hopkins University the latter). The most desirable job candidates typically have many years of experience in a variety of settings, and this experience appears to be vital to the success of many of the interventions. A number of awardees have

⁷ NORC’s evaluation design uses the Kirkpatrick model to evaluate the effectiveness of training programs, to look at the extent to which training influences organizational change that in turn may lead to measurable outcomes. Following the Kirkpatrick model, we consider four steps, including (1) how participants react to the training; (2) to what extent participants improve knowledge and skills as a result of the training; (3) to what extent do participants change their behavior on the job as a result of the training; and (4) what benefits to the organization result, and in particular, what impact does the training have on core outcome measures?

commented that since project launch, they have learned how to identify the “right” candidates for novel, fluid, and demanding care coordination roles that combine clinical knowledge and patient care experience with patient education skills. Awardees have devised a variety of ways to structure the employment situation to improve workforce stability and avoid temporary, grant-funded positions that are less desirable, for example, by linking partial salary support to ongoing research (UT/Houston). Interventions that place considerable demands on a small group of staff, such as Palliative Care Consultants’ DASH intervention, note the risk of professional burnout.

For many awardees, job candidates are homegrown or internal hires, with the candidate’s familiarity with the culture of the hospital or surrounding neighborhood seen as a distinct advantage in implementation. Contrast the positive experience of Pittsburgh, where each of the six partner hospitals recruits and trains its own staff, with the more challenging experience of Beth Israel, where nurses hired by the hospital under the award and assigned to coordinate care at a partner clinic were, initially, in some cases perceived as outsiders. Another example is University Emergency Medical Services in Buffalo, where community health workers hired by the awardee have reflected on the difficulty of integrating their workflow, as contractors, with the staff at their site, the Erie County Medical Center. Alternatively, at least one awardee (Vanderbilt) reports that its skilled nursing facility partners have found it easier to hire new staff than to retrain existing staff, indicating the value of culture change in implementation practice.

NORC will be looking more closely at staffing and retention, to better understand the relative merits, in terms of efficiency and effectiveness, of different approaches to staffing, for example, using a small team of full-time staff versus a larger team of quarter- or part-time staff; the contribution and value of in-kind and volunteer staffing; and how awardees use self-monitoring or continuous quality improvement to track and modify their staffing for their interventions.

Training Process

Staff training across the 23 awardees runs the gamut from formal classroom or web-based lectures to informal shadowing as a means to gain competencies needed for successful implementation. Some of the awardees offer didactic lectures and test their trainees for competency (CLTCEC, J-CHiP, Johns Hopkins School of Nursing, South Carolina, Sutter Health, University Emergency Medical Services, University of Arkansas Schmieding Center), while others use an informal approach to training through shadowing of experienced staff (St. Francis, DDHS, Palliative Care Consultants, Courage Kenny, Northland). A number of awardees have reported a post-launch shift from an initial emphasis on didactic coursework to a greater emphasis on experiential training and mentoring (UEMS, CLTCEC). And those with multisite interventions often arrange for training at each site, with centralized oversight of varying degrees. Sutter

Health's AIM has a central training office that sends trainers out to each site, while North Carolina offers a set of training specifications for its parent navigator role and identifies a community college course that fulfills the specifications, and each of North Carolina's 14 sites oversees the training of intervention staff.

Inter-Professional Teamwork

All 23 awardees include inter-professional teamwork as a key component of their respective interventions, with much variation from awardee to awardee in team composition and the roles of team members. Some adapt existing models of inter-professional teamwork, such as the Program of All-Inclusive Care for the Elderly (PACE) (which Northland adapts for rural North Dakota through the use of Skype and telemonitoring between rural sites and urban PACE centers) or ABLE (originally developed by a team in Philadelphia and modified by the Johns Hopkins School of Nursing to add handymen to make home improvements), while others develop their own custom approach to staffing, with intervention teams led by nurses, physicians, social workers, direct care workers, or community health workers. Awardees may adapt the same general model of inter-professional teamwork in different ways, for example, addressing outreach and community-based care coordination either with community health workers (University of Iowa, UEMS, University of New Mexico) or with staff who hold at least a bachelor's in human or social services (Beth Israel, Providence Portland, Courage Kenny); or adapting training in the use of the INTERACT suite of quality improvement tools for mixed groups of clinical and non-clinical staff at skilled nursing facilities (Vanderbilt) or across multiple types of residential settings, from skilled nursing and assisted living to home health and independent living (UNT/ Brookdale). In addition, a number of awardees integrate clinicians with human services staff or disability rights advocates (Lifelong, Courage Kenny, University of Rhode Island, DDHS), adding another dimension to implementation of addressing organizational, professional, and even language-based differences (for example, whether a participant is identified as a patient or a client in how each frames the issues to be addressed and how success is to be defined).

Workforce Transformation

For staff employed within many of the programs, participation in the HCIA-funded pilot transforms their roles and career prospects. Site visit focus groups and interviews indicate that, across settings and roles, new workforce members typically reported high satisfaction with their work. We note likely reporting biases created by excluding those who were fired, resigned, or did not complete training. Nonetheless, these observations based on current staff are noteworthy, particularly for interventions that are meeting performance benchmarks and that also appear promising in terms of sustainability and scalability.

Comments about new roles in the interventions cite approval of a more holistic approach to patient care, for example, “what nursing should be but often is not.” NORC will explore further what aspects of job redesign are given high marks by trainees in these interventions, what issues remain to be addressed, and the future career prospects for staff trained for these new roles as a part of the HCIA awards. A more basic part of our analysis will consider how job tasks are assigned and reassigned across professional categories, for example, the contrast between medication reconciliation conducted by a clinical pharmacist versus an RN, and the implications of such assignments for implementation and program effectiveness, as well as return on investment.

Nurses. Most interventions are led by nurses with advanced training, often with many years of experience in a variety of settings. Some nurses work relatively independently or with one or two other dedicated staff to implement their program (University of Rhode Island, SCRF, Courage Kenny, JHU School of Nursing, St. Francis, Lifelong, Pittsburgh). Other nurses lead larger, inter-professional teams (University of Iowa, Beth Israel, UNT/ Brookdale, Community Care of North Carolina). Some awardees employ nurse practitioners at higher cost than for RNs if the intervention requires their specific competencies (DDHS, UT/Houston, Palliative Care Consultants). For many nurses, their role extends their skill set beyond clinical care into social work (e.g., referrals to community resources and social services), patient education, and project management.

Pharmacists. For the medically frail population served by awardees in the complex/high-risk patient targeting cohort, medical reconciliation and management is often vital to the success of the intervention. While some awardees included a clinical pharmacist as part of the intervention team (Beth Israel, Pittsburgh, University of Iowa), at least one awardee (Sutter Health) has added clinical pharmacy post-launch, on a pilot basis. In some cases, a clinical pharmacist is not formally part of the HCIA-funded staff but may be brought in on a consulting basis, to support nurse practitioners, nurses, and physicians involved in medication reconciliation or management (Palliative Care Consultants, DDHS).

Direct care workers. Three awardees (University of Arkansas, CLTCEC, South Carolina) focus their intervention on training in-home direct care workers to deliver services that support high-quality, patient-centered care and to function with confidence as a proactive part of a patient’s care team. All three target specific skills within their training that relate to communication across professional lines, patient education and engagement, knowledge about chronic disease and expected functional and cognitive limitations of their clients, and best practices in home health and home care. Two of the three awardees address State licensure issues as part of the training, enabling their students to fulfill requirements for hours of continuing education. However, the critical issue of adequate pay for direct care workers is not

addressed, despite the implications of low pay, physically hazardous work, and oftentimes dangerous locations, for quality of care and for the sustainability of community-based services in support of health reform. Preliminary observations from site visits note the lack of reimbursement of direct care workers for their time (e.g., travel time to clients), training, or related expenses. NORC’s evaluation will explore this issue in greater depth.

Community health workers. Awardees often use community health workers (CHWs) in outreach, home visits, and patient education (UNM, University Emergency Medical Services, University of Rhode Island, JChiP) and for some, as leaders of care coordination teams (Northland, University of Iowa). Community health workers are diverse in backgrounds and training, with some completing their formal education at the high school level while others have finished college degrees. However, all have in common a cultural and geographic connection or shared experiences with the prospective patients and caregivers. This common ground is the key to the effectiveness of CHWs in recruiting participants and in delivering culturally sensitive care, especially in low-income communities where lack of educational or economic opportunities, limited literacy or facility in English, and the presence of discrimination can isolate community residents socially. Adding community health workers to inter-professional teams with clinicians presents a number of issues that NORC’s evaluation will explore, related to the settings in which CHWs work (e.g., hospital, clinic, community), the dynamics between non-clinicians and clinicians on care teams, and the boundaries of roles for CHWs.

- CHWs in UEMS’s HealthiER are stationed in a hospital emergency department, where they recruit prospective participants from among the non-urgent visitors to the ED. Working in a trauma care environment and developing new working relationships with ED clinicians focused on crisis management is stressful for UEMS’s CHWs and could lead to burnout. A clinic or community setting may offer a more comfortable fit with CHWs’ preparation for community-based interactions and care.
- Providence Portland shifted their staffing model post-launch, moving from using CHWs as Mental Health and Health Resilience Specialists to personnel with more formal training in behavioral health and social services.

NORC will compare staffing patterns and implementation experiences among awardees that employ CHWs with those utilizing social workers, to examine similarities and differences in roles and efficacy.

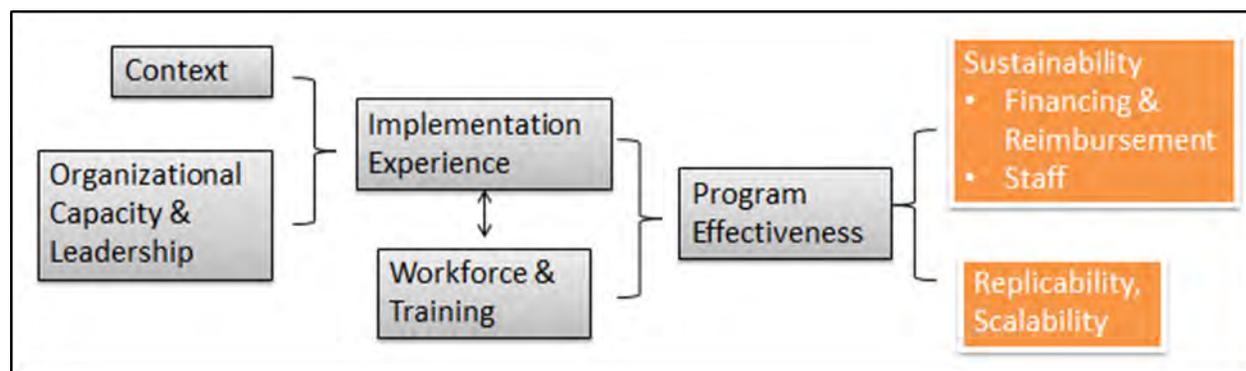
Peer educators. Those awardees that bring together health and human services or disability rights often integrate a paid peer educator, mentor, or life coach as part of the intervention team (Lifelong, University

of Rhode Island). The strength of this role is believed to derive from shared connections—experiences, health status, beliefs, values, language—that link prospective patients or consumers and their peers, similar to the theory of action that underpins the use of community health workers and patient navigators. NORC’s evaluation will be exploring the efficiency and effectiveness of including peers to engage and motivate patients and their caregivers.

Sustainability, Replicability, Scalability

For the 23 awardees in the Complex, High Risk Patient Targeting portfolio, the questions of whether and how to sustain their intervention beyond the initial period of HCIA funding have been critical concerns. In addition, many awardees assert that their program will demonstrate that the evidence-based interventions they have adopted are scalable or replicable in a context different from the one in which it was originally developed. NORC’s initial observations are that there are significant challenges to replicating or scaling most of the awardees’ interventions. Given the early stage of the NORC evaluation, the emphasis in this first annual report is on sustainability. In subsequent reports to CMMI, NORC will be exploring replicability and scalability for each of the awardee interventions, as well as looking at specific elements within the awardees’ programs that show promise for scaling up. Exhibit 3.7 highlights key factors related to sustainability discussed in this section.

Exhibit 3.7: Cross-Awardee Findings: Sustainability, Replicability, Scalability



Sustainability and replicability are affected by size and scope of the award and intervention (e.g., is it part of a major system redesign, the leading edge of an institutional initiative to be spread further, or an initiative of a relatively self-contained clinical or research shop?). Some awardees had piloted a smaller version of their program in the year or two prior to the HCIA award and began the HCIA funded project with a small and experienced core staff that was then expanded. The two awardees with the most extensive and multi-faceted programs, J-CHiP at Johns Hopkins in Baltimore and Providence Portland in

Oregon, identified promising practices or ongoing initiatives from parts of their system and accelerated adoption of these practices throughout the program with HCIA support. For example, the institutional plan at Johns Hopkins Hospital was to extend multi-disciplinary rounding and enhanced discharge planning to all services in the hospital, having started with one floor or service in the past. The HCIA award provided resources to add staff to units, transforming their rounding and discharge planning services at a faster pace than would otherwise have been possible.

Financing and Reimbursement

Across the awardees, the most common source of concern with regard to sustainability involves financing. Regardless of whether awardees have used their HCIA awards to expand current activities or to undertake new functions, they have reported that their current scope of operations could not have been reached without HCIA funding and that maintaining their current level of effort post-HCIA funding will require additional revenues from as yet unknown or unsecured sources. Exhibit 3.8 notes a number of strategies used by awardees to achieve sustainability; the diagram is illustrative and not comprehensive.

Exhibit 3.8: Selected Strategies for Financing and Reimbursement



For some of the awardees, capitated payment or ACO-like value-based payment models hold promise for sustaining their services going forward, assuming that some parts of their programs can demonstrate cost savings for the relevant payers. For Providence Portland, the Health Share leadership emphasized the importance of the State Coordinated Care Organization (CCO) model in fostering an environment where new models of care could be tested. The success of the several interventions within the CCO framework has yet to be determined but because offsetting cost reductions are internalized within the CCO, this

awardee has a good chance of maintaining many of its intervention arms going forward. Notably, we have heard from several awardees that target patients using claims-based risk algorithms or other restrictive criteria that they are monitoring their program's uptake and patient outcomes and using these rules to better identify subsets of patients most likely to benefit at acceptable levels of recruitment and retention efforts. Awardees anticipate refining their targeting of interventions (and the interventions themselves) as they learn more.

A related issue for sustainability particularly for this group of awardees who frequently employ non-licensed health workers, such as community health workers (CHWs) or patient navigators, is coverage of their services by public and private plans or payers. For example, University Emergency Medical Services (UEMS) in Buffalo employs CHWs as care coordinators. Medicaid does not cover care coordination services when provided by CHWs (rather than by a licensed clinician). UEMS does, however, have an arrangement with a Medicaid MCO that serves the Buffalo area and it appears that these CHW services can be compensated through the MCO's global budget. One way that UEMS is looking to sustain itself post-HCIA is to affiliate with the MCO and provide short-term care coordination and patient recruitment and engagement, handing off this responsibility to MCO staff after four to six months.

Other awardees, like Palliative Care Consultants and Sutter Health, have structured their interventions to maximize the provision of covered services and thus improve the sustainability of their programs. At Palliative Care, RNs provide home visits to patients but their services are not covered by Medicare. Instead of providing intensive services to patients, the RNs perform triage and coordinate care. They flag certain patients for a follow-up home visit by the on-call physician, whose services can be reimbursed by Medicare. Sutter Health's intervention, AIM, includes two different funding streams for home visits by their RN and social worker team to maximize reimbursement for services. One track is for patients who qualify for Medicare home health and the other is for patients who do not qualify for skilled nursing benefits and whose home visits are paid with HCIA funds and not Medicare or Medicaid.

Partner and stakeholder buy-in will also be important for sustainability, especially for interventions that span home and community settings or that work with unaffiliated health systems. For example, partner buy-in has been essential for the UNT/Brookdale's INTERACT intervention. Integrating their intervention with their partner Brookdale Senior Living's existing clinical systems required considerable lead time and effort. Without partner buy-in, this integration—a crucial component of sustainability—would not have been possible. Similarly, the SNFs that are part of Vanderbilt's IMPACT-INTERACT intervention for patients discharged from hospital to a SNF have incorporated the INTERACT

components into their clinical operations universally, not just for patients admitted from Vanderbilt. Nursing staff at one SNF we visited remarked that new nurse and nurse's aide hired are directly trained with INTERACT reporting forms and processes, as the facility's standard procedures.

Finding the Right Staff

Many of the awardees report that part of their success is driven by the dedication and enthusiasm of their staff to work extensive hours or expand their duties. The UT/Houston Health Sciences Center's Comprehensive Care Clinic for extremely medically fragile children requires at least one nurse practitioner or physician to be on call at all times, every day. While the staff is relatively small (three part-time physicians and three nurse practitioners), the clinic staff offers coverage 24 hours per day, 7 days per week, with patients reaching the on-call practitioner at night on a dedicated cell phone. The project leadership and staff acknowledge that this work takes special commitment and staffing a comprehensive care clinic for such special needs children requires careful recruitment. Nonetheless, they assert that the opportunity to develop and maintain relationships with a relatively small number of patients and families with great needs is fulfilling and rewarding. Similarly, Johns Hopkins School of Nursing's Project CAPABLE relies heavily on the commitment of a dedicated RN and occupational therapist to conduct home visits of enrolled participants, identify goals, implement a care plan, navigate the health care system, and facilitate access to resources; as well as a handyman who helps make clients' homes more safe and accessible for them. The level of staff commitment and availability for their clients is considerable; without the right team this project may not be sustainable.

The sheer number of staff is also critical for fully implementing and growing a program. A number of awardees have noted that the hiring and retention of project staff is the most important determinant of intervention success.

In considering prospects for scaling up or replicating awardees' interventions, the presence of charismatic and skillful leaders and program champions must be factored into the calculus. In some cases, long-standing and mutually beneficial relationships with the community support a program both materially and politically. Such conditions may be hard to find and replicate elsewhere. Beyond internal staffing and leadership, awardees have deployed their interventions in conjunction with partners or other stakeholders with whom they have worked before (South Carolina Research Foundation, Vanderbilt University Medical Center). These prior associations and collaborations facilitate implementation of new practices and sharing of information due to the partnering organizations' trust and rapport. Familiar relationships take time to forge, a consideration in thinking about program expansions or replication in settings without such established relationships. The South Carolina Research Foundation has partnered with regional

home care agencies to improve care coordination by integrating additional services within its existing program serving fragile elderly patients living at home. Building on a previous relationship with one home care agency has been essential to the growth of the program, as the executive director has a considerable network and has done a substantial amount of work recruiting other agencies. Sustainability and replicability of this intervention may be difficult without such an effective ambassador who is willing and able to bring other agencies on board. In addition, an intervention is more likely to be sustained when it is wholly integrated into an organization that offers long-term stability (e.g., Beth Israel Deaconess Medical Center, Sutter Health, University of Rhode Island's partnership with state Developmental Disability Agencies, University of North Texas's partnership with Brookdale Senior Living).

Issues for Evaluation

Evaluating the first round of HCIA awardees presents a number of challenges to the NORC team, as well as to all front-line evaluators. These challenges relate to the overall framing of the evaluation (i.e., whether it is seen as research or quality improvement, with the implications for data collection and management), identification of an appropriate comparison group in conjunction with the awardee, and specific aspects of the complex/high-risk patient targeting portfolio. In this section, we note some of the issues related to evaluability encountered during the first year of the evaluation in our document reviews, site visits, and review and analysis of awardee data, and present an overview of the preliminary results of our quantitative analysis for six awardees.

Rapid Cycle Evaluation Design

The HCIA program has been designed to produce information quickly and on a regular basis, both by each awardee and through data collection and analysis by the front-line evaluator. This rapid cycle evaluation framework encourages and relies on frequent communication and cooperation between the awardee and evaluator. Such a joint effort also raises the threat of bias in the observations and judgments of the evaluator and risk of contamination of the performance of the awardee with the evaluator's close involvement. At the same time, however, such early and frequent contact between the awardee and the evaluator allows for insights into issues related to measurement and characterization of the intervention that evaluators might not otherwise have realized until much later.

In a rapid-cycle approach, there is an ongoing tension between the need to specify and measure domains in a consistent way (for example, the dosage of an intervention or a program's fidelity to a given model) and the importance of noting ongoing change to any and all aspects of the intervention, in keeping with the continuous improvement commitment of rapid-cycle evaluation. Although awardees proposed

activities, targeted populations, and desired outcomes in their applications to HCIA, some awardees have modified their interventions or redefined their target population since the launch of their programs.

What is the relevant benchmark for dosage? How awardees calibrate interventions is highly variable, even for the same kind of service, such as enhanced discharge planning and transition support, which can be one-size-fits-all or responsive to patient needs. Also, some awardees may have focused on a narrower set of outcomes than their intervention actually affects, as observed from the evaluator's perspective. Our evaluation will explore such dynamics at work among the partners and participants in an intervention as it plays out. Post-launch, some awardees targeting Medicaid beneficiaries have narrowed their scope from targeting patients in multiple States to serving one State, in response to difficulties in securing Medicaid managed care partners for implementation. Other awardees have nested short-term pilots within their intervention, to address new needs identified during the course of implementation (for example, a pilot at Sutter Health to add pharmacy reconciliation and management at one of the 14 sites).

Access to Data and Data Sharing

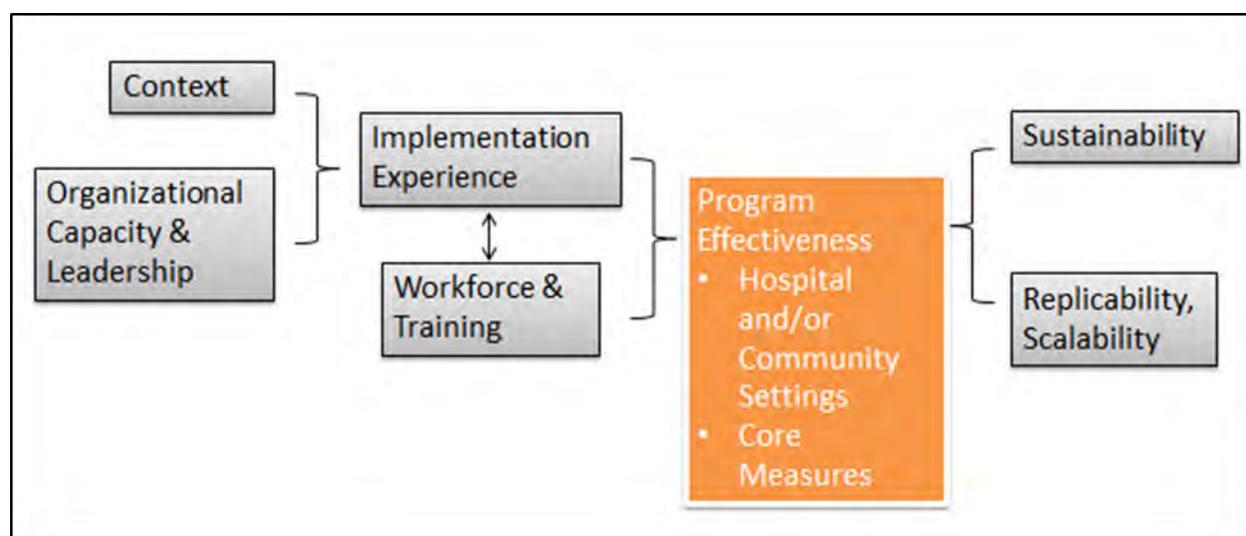
Access to data is a prerequisite for all front-line evaluators. A critical step in the evaluation process is in negotiating access to the data through a data use agreement or business associate's agreement. As a CMMI contractor, NORC should have access to all data to which CMMI has access. The type of agreement depends on the awardee's relationship to patient data, whether it is a health plan or rather a service agency exempt from federal HIPAA privacy protections or whether the data resides with an awardee's partners, in which case a separate agreement may need to be negotiated between NORC and each partner to an intervention. Awardee institutions vary in their IRB practices and rulings. In cases where the NORC evaluation is considered to be research, rather than evaluation or quality improvement, additional layers of review by the awardee's IRB are required for all materials that will be presented to patients, all recruitment and other activities, and approval is needed for all personally identifiable information (PHI, PII). In addition, some of the awardees operate in a for-profit or competitive health care marketplace, where data on patients, training materials, or information about policies or procedures may be considered privileged or proprietary. As an additional challenge, more than one awardee holds data in confidence pending acceptance of a scholarly article for publication. Two awardees are for-profit corporations (Sutter Health, UNT partner Brookdale Senior Living) or nonprofits (Pittsburgh Regional Health Initiative) where the HCIA-funded intervention expands on successful proprietary work and where the boundary may be unclear between publicly funded products and those products that are privately owned. Finally, for awardees including University Emergency Medical Services, North Carolina

Community Networks, and the University of New Mexico that serve Medicaid enrollees, access to claims data and patient information, and the data’s quality and completeness, vary by State.

Measuring Program Effectiveness

One year into NORC’s three-year evaluation period, findings related to program effectiveness are just beginning to become available. The diagram in Exhibit 3.9 highlights key considerations relevant to evaluating program effectiveness. The emphasis in this first annual report is on implementation effectiveness or the process aspect of the evaluation.

Exhibit 3.9: Cross-Awardee Findings: Evaluating Program Effectiveness



Measuring program effectiveness requires a longer lead time to address challenges that include the following:

Identifying a comparison group. Defining appropriate comparison groups, particularly for highly targeted and specialized interventions, requires a clear understanding of what makes the awardee’s intervention unique, and what populations not enrolled or participating in the intervention might be most closely matched. Several awardees depend upon informal referral networks and clinical judgment to identify participants, and comparison groups based only on claims information cannot mimic these selection factors. NORC has worked closely with each awardee to identify and characterize prospective comparison groups. With each comparison group, limitations are likely, based on data availability.

Measuring return on investment. Calculating the cost and return on investment of an intervention involves estimates of program costs in “steady state” circumstances. These estimates should exclude time

and resources devoted to documentation and reporting that would not be maintained outside a research or demonstration context. Estimation of these costs should take into account in-kind and institutional support, which can be difficult to capture in awardees' quarterly reporting, particularly if an intervention fits into and is part of broader institutional operations.

Distinguishing secular trends. There is substantial variability across the country in hospital utilization and post-acute care utilization. This presents a challenge for the post-hospitalization interventions in that they may be capturing different populations in different regions and hospitals and thus may not be measured in a comparable fashion across interventions. A number of awardees noted their observation of declining hospital admissions and re-admissions within their region. It will be important to explore the extent to which these may be secular trends rather than wholly or in part attributable to the interventions themselves. Furthermore, the readmissions measure does not take into account the baseline and trends in overall hospitalization, a factor that may complicate the reliability of using this metric. Measuring hospitalization requires a population or regional catchment area framework, and most measures and interventions are specific to institutions or programs.

Measuring consumer and informal (unpaid) caregiver satisfaction and experience. Capturing participant observations, whether by survey or focus group, presents a particular challenge for the CHRPT portfolio in that some of the awardees, especially those interventions that involve care coordination post-discharge, have incorporated their intervention by design into existing clinical systems or health services, rendering them invisible to participants and their informal caregivers. Despite the fact that many patients must opt-in to participate, their awareness and understanding of the HCIA intervention may be limited or non-existent. Offering a seamless experience for patients or caregivers may be an objective for the intervention but one that presents a challenge to the evaluation team that seeks to measure perceptions and experiences. For the interventions being implemented by Sutter Health, Vanderbilt University Medical Center, Beth Israel Deaconess Medical Center, and the University of North Texas/Brookdale, enrolled patients are unlikely to identify their participation in the HCIA-funded intervention as separate from the health services and care coordination that they receive. Even in the case of awardees whose intervention has a distinct brand identity (South Carolina Research Foundation's HOMECARE+ and Palliative Care Consultants' DASH), enrollees and their caregivers may not clearly identify the HCIA-funded project or distinguish the care coordination piece from their expectations that home health services, primary care, or palliative care services are to be provided as part of their participation in the intervention. In the mind's eye of participants and their caregivers, an HCIA-funded project may reap the benefit of association with other programs with which it is co-located or be blamed for the shortcomings of program aspects well outside the control of the HCIA project.

In addition, evaluation surveys may be difficult or impossible to field due to ongoing survey work by the awardee or its host or partnering institutions, both required (hospital credentialing using H-CAHPS) and discretionary. There is the potential for the evaluation surveys to contaminate ongoing survey work, which may result in unreliable or unrepresentative findings that could influence how the intervention is implemented or sustained. For a handful of awardees, requirements around quality assurance for hospitals mean that no survey with questions similar to H-CAHPS may be conducted within 30 days of a patient's hospital discharge.

Summary

This chapter has offered an initial descriptive overview of the 23 awardees in NORC's evaluation portfolio. We have identified themes for further exploration, related to the influence on implementation of regulatory and marketplace environments and the shared drivers that catalyze many of the interventions. These include an awardee's organizational capacity, including the capacity for self-monitoring and quality improvement; its history with project partners; the varied approaches to recruiting and engaging prospective participants; how health information technology enables (and sometimes impedes) communication; the forging of new workforce roles for nurses, pharmacists, social workers, direct care workers, and community health workers; and the formidable challenges to transitioning from HCIA funding to sustainable sources of support and to scaling up a successful model.

These preliminary observations will guide our ongoing work over the next year, as NORC completes its site visits, continues to review program documents generated by the awardees, codes and analyzes the full set of qualitative data, and integrates more quantitative analyses and survey findings. Subsequent NORC reports to CMMI will develop a fuller analysis of these themes in order to address the core research questions laid out in our analytic plan.

Awardee-Level Analyses

This annual report includes an awardee-specific chapter based on information developed for NORC's third quarterly report (finalized in October 2014). Data for each awardee's eighth quarterly report to CMMI (for the time period April 1 through July 31, 2014) were not available at the time that this report was drafted. Subsequent edits made in response to awardee feedback, and reflecting preliminary observations from site visits made through October 2014, may add information that is also included in the awardee's eighth quarterly report, but these data are not incorporated systematically for all awardees.

Each overview in the following pages consists of a summary of the awardee's development and implementation of its intervention, including the number of participants; observations on contextual factors, workforce development, implementation effectiveness, program effectiveness, and sustainability, replicability, and scalability; and an update on data sources and analyses.

Beth Israel Deaconess Medical Center

This report presents NORC’s evaluation of the Post-Acute Care Transitions (PACT) program, sponsored by Beth Israel Deaconess Medical Center (BIDMC) as part of the HCIA program. The program aims to improve care transitions between six affiliated primary care practices and the Medical Center for Medicare and dually eligible patients discharged from BIDMC.

We provide preliminary observations about the PACT program based on a review of program documents current through BIDMC’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014), telephone interviews NORC has conducted with BIDMC, and a site visit that was conducted in April 2014. While this report presents themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection or fully coded and formally analyzed the data collected from the site visit. We expect to have more definitive findings and results for the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Acute Care Hospital
Funding Amount:	\$4,937,191
Launch Date:	11/12/2012
Location:	Massachusetts

The Post-Acute Care Transitions (PACT) program employs nurse Care Transition Specialists (CTS), dedicated clinical pharmacists, and a social worker to coordinate care for Medicare and dually eligible Medicare/Medicaid patients with a primary care provider (PCP) for 30-45 days following hospital discharge. PACT targets all Medicare fee-for-service inpatients that were referred to BIDMC from one of six affiliated primary care practices, which collectively account for approximately 30 percent of BIDMC’s readmissions.

The range of care coordination and care management tasks offered through PACT include patient education, medication reconciliation, referrals to social services, and communication across providers, facilitated by a medical record shared by BIDMC and the six clinics. These services are initiated during hospitalization. Prior to discharge, a PACT CTS will meet with an eligible patient to explain the program, obtain the patient’s consent to receive PACT services, and conduct an assessment that determines the patient’s individual needs. This assessment covers social factors such as the level of support that the patient expects to receive from family or friends after discharge, any medical or

pharmaceutical concerns that the patient has, and the patient’s health literacy level. The PACT pharmacist will also meet with the patient prior to discharge to conduct medication reconciliation and to answer questions. These services continue after discharge via telephonic and practice-based support, and address all potential transitions of care (including those involving home health agency providers and extended care facilities) in order to address any identified risk factors that may contribute to re-hospitalization. This suite of post-acute care interventions is designed to improve:

- Continuity across the continuum of post-acute care services;
- Disease management following hospitalization;
- Management of complex medication regimens; and
- Care of patients with limited ability to advocate for needed medical attention.

PACT staff is shared and dually-sited between BIDMC and the six participating primary care practices. This staffing model enables PACT professionals to support the existing operational workflows in both settings. The inclusion of pharmacy services strengthens prescribing practices in the hospital by providing consultations with hospital medical staff and medication reconciliation and communication at and post-discharge. The addition of social services allows non-medical needs (e.g. housing and food) to be addressed. A shared medical record facilitates communication between PACT staff and primary care providers, inpatient providers, and staff at BIDMC-affiliated health community health centers, as appropriate.

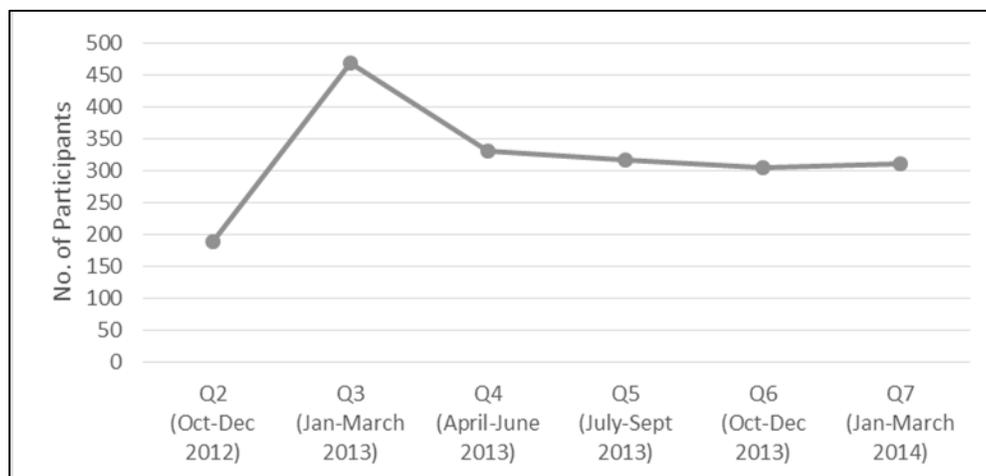
PACT staff work in tandem with BIDMC inpatient case managers to arrange for post-discharge services and placements, and BIDMC has worked to ensure that there is no duplication of effort across the two roles. Inpatient Case Management (CM) staff make referrals to facilities and services outside the home and coordinate the paperwork and discharge documentation between BIDMC and the OP facility, while PACT staff help to reconcile the information from that discharge documentation and work with patients that are discharged into the home or community settings. As one inpatient CM reported, “PACT nurses are the connection between the community setting and the IP side. They do follow-up that nurses cannot do in IP, and it has been a great support.” PACT staff, housed within the hospital but formally designated as the staff of an affiliated clinic, offers transitional services and remain in contact with discharged patients by telephone. PACT CTS and inpatient case managers have distinct roles but share information.

The PACT program targets all Medicare and dually eligible fee-for-service patients referred to BIDMC from one of six affiliated primary care facilities.⁸ The program does not extend to patients who present at BIDMC for ED visits and observation stays. However, if a patient is admitted to BIDMC and enrolled in PACT and is later re-categorized as an observation stay, the patient remains enrolled in PACT.

Additionally, some primary care physicians may request that a specific patient be enrolled in the program without a qualifying hospital admission. The program is voluntary, and patients may decline PACT services. As of March 31, 2014, the program had hired and trained eight CTSs (7 FTEs) and five clinical pharmacists (3 FTEs), and in August 2013 an inpatient medical social worker transferred to the PACT team.

Self-reported data from BIDMC reports enrollment by quarter, shown in the exhibit below (Exhibit BIDMC.1). From program launch through March 31, 2014, PACT has served 1,464 unique participants.

Exhibit BIDMC.1: Total Number of BIDMC Participants, By HCIA Quarter



During the most recent reporting quarter (QR 7) for which data is available (ending March 31, 2014), the PACT program served 310 patients. Of those patients, 57% were female, a substantial majority were elderly (48% were older than 75, and an additional 25% were between the ages of 65-74), and were predominantly white (68% vs. 23% African American and 5% Latino). Further, most of the patients were strictly Medicare FFS or Medicare unspecified (63%), while the rest were dually eligible (37%).

⁸ Healthcare Associates (Boston, MA); BIDHC-Chelsea (Chelsea, MA); BIDHC-Brookline/Washington Square (Brookline, MA); BIDHC-Brookline/Pastor Medical Group (Brookline, MA); BIDHC-Jamaica Plain (Boston, MA); Bowdoin Street Health Center (Dorchester, MA).

Context

Improving care transitions has been a longstanding strategic priority for BIDMC. The hospital's early focus on readmissions and care transitions was initially supported by the Institute for Healthcare Improvement (IHI) State Action on Avoidable Rehospitalizations (STAAR) initiative, which aimed to improve care transitions by fostering learning collaboratives across the continuum of care. The HCIA PACT program is an initiative that was first developed as an internally-funded pilot. The program was designed in accordance with the hospital's strategic plan to reduce readmissions, and relies on core institutional strengths that BIDMC leadership view as underutilized, especially pharmacy and primary care services.

All BIDMC providers belong to the Beth Israel Deaconess Care Organization (BIDCO), a physician and hospital network that operates as an Accountable Care Organization (ACO). BIDCO functions separately from PACT. While the ACO does provide physicians with data on managed care patients and also funds some case management, several hospital managers and outpatient providers that NORC spoke with believe that the PACT model applied hospital-wide would be more efficient than for BIDCO to operate a separate program.

Finally, the progressive health care environment in the State of Massachusetts, and the Boston region in particular, is a significant consideration in assessing the PACT program. Innovation in this region makes it difficult to isolate the effects of the PACT program from other initiatives at BIDMC and from services that patients may be receiving through other health care providers in the area. BIDMC reported collaborating with and helping to refer patients to the Commonwealth Care Alliance's OneCare program,⁹ which provides longitudinal support for many patients who would fall into the PACT program's view as well. BIDMC is also operating a separate nurse surveillance program for patients in SNFs, using teleconferencing for patients about to be discharged. In addition to work within BIDMC, leadership also reported similar transitions and case management work being done at Partners/Mass General and Boston Medical Center, meaning that patients who are have been admitted to multiple hospitals could potentially have received similar services from all sources.

Workforce: Staffing and Training

The PACT staff is made up of three distinct roles: nurse CTS, clinical pharmacist, and social worker. A degree in registered nursing, pharmacy, or social work is required. Prior to the HCIA award, the PACT

⁹ Commonwealth Care Alliance. *How our program works*. Retrieved August 21, 2014, from <http://www.commonwealthonecare.org/the-program/how-our-program-works/>

program began as an internally funded pilot with a core staff of two registered nurses. Pharmacy services were integrated into the pilot as part of the residency project of a BIDMC pharmacy resident. An inpatient medical social worker was transferred to the PACT staff in August of 2013 in response to a high level of need for social services and supports amongst PACT patients.

All PACT employees undergo an orientation to the program to be trained on the post-discharge planning process, PACT workflow, and other program-specific details. The initial group of PACT staff, as well as new hires, are trained with a structured one month orientation (200 hours of training), that involves both lectures as well as practical introduction to the systems of the hospital. In addition, staff is oriented to their practices, and to the other providers, including home health agencies and extended care facilities. New PACT employees are also assigned to shadow current PACT staff members. Some staff was also provided with the opportunity to shadow visiting nurses providing home health services and meet with staff at skilled nursing facilities in order to gain familiarity and build relationships with those partners. Staff members receive training in motivational interviewing and have quickly adopted this technique and employ it during telephonic follow-up. Many PACT staff members were previously employed as inpatient nurses, pharmacists, and medical social workers and so are familiar with the BIDMC system.

Because PACT staff members are assigned to different outpatient clinics, the working relationship between them and the clinic providers varies from clinic to clinic, and depends on the style, preferences, and patient population of each provider. This adaptability to local practices has contributed to the acceptance of PACT services by the outpatient providers. Some PACT staff reported initial difficulties in integrating their work within traditionally organized freestanding clinics until they became familiar with and adapted to the styles and mode of communication preferred by the physicians in the practice; for instance, very brief oral status updates or email exchanges. Conversely, PACT staff members working with BIDMC's co-located primary care clinic found it relatively easy to integrate themselves into the practice and to "sell" the value of PACT services. Staff notes that although variability in practices resulted in some challenges in establishing relationships, PACT's flexible model allows each CTS to tailor their approach to the particular needs of each clinic.

PACT does not collect structured information about employee satisfaction; in discussions with NORC at the site visit, however, staff expressed enthusiasm for the program and satisfaction with their roles.

Implementation Effectiveness

Although PACT services are limited to patients who see a PCP at one of the partner clinics, during the site visit, staff throughout the hospital reported that they were aware of the program and value the

additional patient education, medication reconciliation, and discharge planning offered to eligible patients. A key aspect of the effectiveness of the PACT implementation is the ability of PACT staff to create a “bridge” between inpatient and outpatient treatment. By initiating PACT services at the end of the inpatient stay, the CTS, pharmacist, and social worker are able to support patients during the discharge process and assist in creating a post-hospital plan of care, allowing inpatient staff to focus on the patient’s short term medical needs. This division of labor ensures that both the patient’s immediate and long term needs are anticipated and met.

PACT staff also report that the flexibility they are given with regards to the intake and assessment process is helpful. While each staff member collects and reports on the same information (health literacy, social factors, medical needs, etc.) there is only a general framework for the intake form and each CTS may develop their own template for reporting purposes. The program emphasizes collecting standardized information but encourages staff to ask relevant questions and to delve into issues in a way that is appropriate for each patient. Similarly, although the PACT suite of services is consistent across each of the participating primary care sites, PACT staff also has flexibility in the way that they work with colleagues at each clinic to integrate PACT into existing clinic workflows.

Another important component of the program implementation is telephonic follow-up. Typically, PACT patients receive weekly follow-up calls for 30 days post-discharge. However, the follow up is flexible and PACT staff use their discretion to determine the duration and frequency of patient contacts. Furthermore, the communication between PACT staff and patients is bi-directional; patients or caregivers are able to initiate contact by calling their provider, whereby the call is routed through a call center to a PACT staff member. The content of these phone calls is dictated by the patient’s individual needs and tailored to each program participant. PACT staff uses motivational interviewing to encourage patients to take an active role in their own care, by meeting patients where they are and moving to the next stage collaboratively.

PACT implementation is aided by the use of a shared electronic medical record developed by BIDMC for its inpatient services. The six clinics participating all use the shared EMR for record-keeping purposes, and they were chosen partially because of their shared EMR system. As a result, in order to expand the program to other clinics, the PACT team and BIDMC must determine the best way for PACT staff and primary care clinics to share information without having a common EMR, and they are considering various strategies for electronic communication of patient information. Currently, Massachusetts is developing systems for health information exchange (HIE) across the State, offering a potential solution.

PACT program leadership relies on BIDMC internal billing records for self-assessment. Currently the program is only able to report on readmissions back to BIDMC (participating clinics were chosen specifically because they have historically referred many of their patients to BIDMC). The outcomes of the Medicare population of participating practices prior to the launch of PACT serve as a historical comparison group. However, determining how much to attribute changes in readmissions to PACT, given other programs that are being carried out at BIDMC and in the greater Boston region, is a challenge for the PACT team's internal monitoring effort, as it is for NORC's external evaluation.

Program Effectiveness

NORC's evaluation uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of hospital emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness are gathered through the site visit, review of survey findings, telephone interviews with the awardee, and review of program documents. For example, during NORC's site visit to BIDMC, hospital residents, nurses, and attending physicians reported that they greatly value the consultation and medication reconciliation services provided by the PACT pharmacists, and have come to rely on their expertise. Anecdotally, informal caregivers (e.g. family members, friends, neighbors) have related to PACT staff that the PACT program relieves some of their worry because they know that PACT staff will be checking in on the patient and arranging for needed services. As NORC continues to gather and analyze primary (qualitative and survey) data from BIDMC over the coming year, we will present a more comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

Leadership at BIDMC reported that the PACT model was designed to be scalable to the entire BIDMC system. In planning for the future, the experience and results of the PACT program will shape BIDMC's strategies for enhanced discharge planning and care transitions. If PACT shows reduced cost and improved care, BIDMC leadership reported that the model would likely be expanded going forward; however, PACT and BIDMC are interested in further targeting and enriching the services provided through PACT. BIDMC leadership reported that, as CMMI funding decreased over the course of the award, BIDMC has increased in-kind contributions to the program to compensate for decreased award amounts. The hospital's leadership acknowledges that BIDMC will be accepting more of the risk for PACT and other similar care management programs in the future, while recognizing that PACT is costly

to operate. In order to sustain the program, the hospital and its affiliated practices must identify the payment models that best support the program and others like it. They will also have to resolve questions as to where the Transition Specialists are organizationally situated and financially supported: assigned to outpatient practices but located at the hospital, or more closely integrated with, or supported by, either the outpatient practice or the hospital. As global budgeting comes closer to realization, BIDMC is interested in investing in programs such as PACT that will reduce readmissions and lower costs.

The institution-wide buy-in for the program and a commitment from BIDMC leadership to improve care transitions and reduce readmissions has helped to make implementation successful. BIDMC leadership believes that the PACT model is sustainable and scalable, if somewhat resource-intensive, and is exploring reimbursement models that will support the model in the future, most likely a form of global payment. BIDMC would like to expand PACT to other affiliated primary care practices, including those that do not share the medical center's in-house EMR. The PACT program is considering potential IT solutions for expanding to these practices, including participating in one of the expanding health information exchanges in the State.

The awardee made structural programmatic choices (sharing of staff between hospital and clinic) and the form of contact with patients post hospital stay (telephonic) with an eye to the program's cost efficiency and financial sustainability. PACT leadership decided that the intervention should be offered to all discharged patients who met the eligibility criteria (Medicare FFS beneficiaries) rather than attempting to limit the transitional services to patients with particularly high risk of re-hospitalization. After assessing their experiences from the first year, however, the project team proposed to use carry-over HCIA funding to devise an intervention targeted to very complex patients with especially great social service needs. The six-month pilot project called IM-PACT focuses on a group of PACT patients within the Beth Israel Deaconess Care Organization that have been identified as "super-utilizers" (patients that are medically complex and have a variety of psychosocial issues) and also "high-value" (patients that are "engage-able" and "impact-able"). Similar to PACT, IM-PACT services are initiated during an inpatient stay. However, IM-PACT staff contact patients with greater frequency and are able to take the time to go to a patient's home to conduct an environmental assessment and provide support. Given the short duration of the project and the small number of participants, its purpose is purely exploratory. BIDMC plans to use the lessons learned from the implementation of the program to inform further development of transitional and care coordination services.

Data Sources and Analyses

Site Visit

A 3-member team from NORC visited Beth Israel Deaconess Medical Center on April 29 and 30, 2014. Site visit activities included group discussions and interviews with project and BIDMC leadership, clinical and managerial leaders at two of the affiliated health clinics (Bowdoin Street Health Center, Healthcare Associates), hospital inpatient staff who work with the PACT team, and nurses at the Visiting Nurse Association (VNA), one of many agencies with which PACT collaborates in providing post-hospitalization services. The NORC team visited with the staff implementing the IM-PACT pilot (using carryover HCIA funding) for “super-utilizers” within BIDMC’s Accountable Care Organization. Initial summary observations were included in this report, based on first impressions of the PACT program. In addition to the site visit, NORC conducted a series of interviews with the awardee and the CMMI project officer prior to the site visit and has also been reviewing the quarterly report documentation submitted to CMMI through the Lewin website.

Survey

BIDMC is not fielding a *workforce trainee survey*. Given the relatively small number of staff (8 CTSs, 5 clinical pharmacists, and one social worker) for this intervention, NORC is using the site visit group discussions and interviews to gather primary data on workforce in lieu of a survey.

An existing Hospital CAHPS (Press Ganey) offers a limited number of measures on care transitions, for a small sample of PACT patients identified through encounter numbers. Within the constraint that CAHPS-related regulatory restrictions places on the timing of fielding other post-discharge surveys, the

PACT team is exploring developing and fielding a phone-based *consumer experience survey* of all patients served by PACT, using Research Electronic Data Capture (REDCap) for data collection and in-house analysis. NORC plans to collaborate with the awardee on survey question development.

Secondary Data

NORC executed a Business Associate’s Agreement with Beth Israel Deaconess Medical Center on April 23, 2014 and was able to incorporate their data into this report.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by BIDMC, 4/30/2014.

HCIA Quarterly Report for Beth Israel Deaconess Medical Center, for Reporting Quarter End Date 3/31/2014. Submitted by BIDMC, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone). BIDMC, December 30, 2013

NORC. Interview (Telephone), Awardee Data Sharing. BIDMC, February 4, 2014.

NORC. Interview (Telephone), Survey. BIDMC, April 4, 2014.

NORC. Site Visit. BIDMC, April 29-30, 2014.

California Long-Term Care Education Center

This chapter presents NORC’s evaluation of the California Long-Term Care Education Center HCIA-funded program entitled “Care Team Integration of the Home-Based Workforce.” The program trains pairs of Medi-Cal-enrolled clients and Personal Home Care Aides (PHCAs) in California’s In-Home Support Services (IHSS) program. Training objectives include improving communication and care coordination across home and clinical settings and improving the management of chronic disease for this dually eligible population in order to reduce ED visits, hospitalizations, and the length of stay in skilled nursing facilities.

We provide observations about the program based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI (January 1, 2014 through March 31, 2014), and a series of telephone interviews with the awardee. NORC conducted a site visit to CLTCEC in September 2014. While this chapter presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its information gathering, including qualitative, quantitative, and survey data, to be used as part of our evaluation. NORC will present more definitive findings and results in subsequent reports to CMMI.

Overview of Program

CMMI Category for Awardee:	Community College/Vocational Training
Funding Amount:	\$11,831,445
Launch Date:	10/15/12
States Where Located:	California

The California Long-Term Care Education Center is implementing the “Care Team Integration of the Home-Based Workforce” intervention for Medicaid and dually eligible Medicare and Medicaid beneficiaries who are enrolled in Los Angeles, Contra Costa, or San Bernardino managed care organizations (MCOs) and who receive services through California’s In-Home Supportive Services (IHSS) program. The goal of the HCIA initiative is to develop the direct services workforce by training PHCAs in core competencies, such as coaching, monitoring, and navigation, to enable them to serve as agents of change and assume new roles with respect to caring for their IHSS client. The intervention aims to integrate PHCAs into the managed care teams to serve as bridges between clients and clinicians.

The CLTCEC initiative ultimately serves beneficiaries of California’s Medicaid personal care services program (IHSS). Beneficiaries eligible for the intervention are those whose health care needs are

especially costly, in addition to having functional disabilities that qualify them for PHCA services. Eighty-five percent are dually eligible for both Medicare and Medicaid. Medi-Cal MCOs and community organizations have partnered with CLTCEC for this intervention, to identify eligible individuals and use an in-home visit or group orientation to recruit them into the program. During these contacts, PHCAs and their clients are invited to participate in the CLTCEC training program together. Interested PHCAs and clients can sign up during in-home visits conducted by recruitment staff or during small-group orientation sessions. Once they have completed orientation, they can enroll in the training program, which is offered in a range of languages. PHCA–client pairs that complete the program attend a graduation in recognition of their accomplishment.

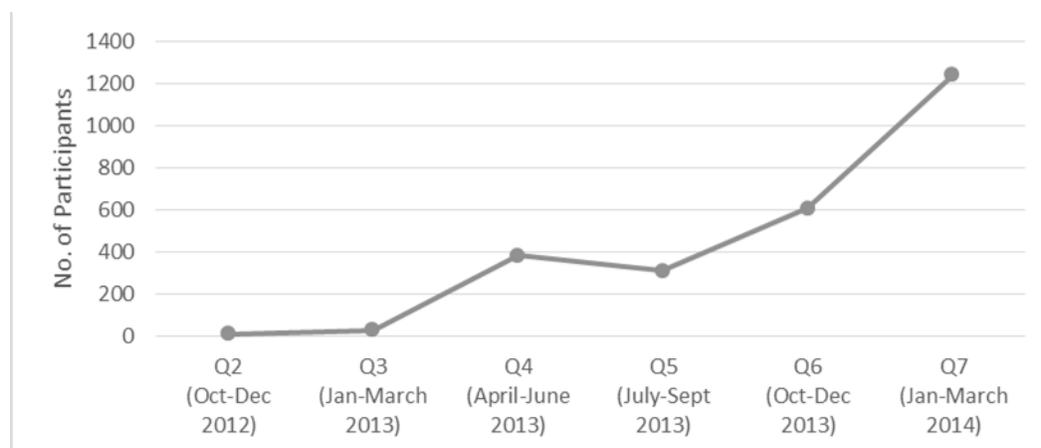
The CLTCEC provides this co-training in three California counties: Los Angeles County, Contra Costa County, and San Bernardino County (the last of which was added in Quarter 8 of the program). The scale of the LA County program, which conducts 40 classes concurrently in 20 sites, is much larger than that operating in Contra Costa or planned for San Bernardino, which each plan for only two concurrent classes (beginning in October of 2014, San Bernardino will offer six concurrent classes). With fewer eligible beneficiaries in Contra Costa, recruitment of PHCA–client pairs has been more difficult. The San Bernardino County program is just now getting underway and information on recruitment or class enrollment is not available.

The CLTCEC, a non-profit organization created by California-based Service Employees International Union (SEIU) Local United Long-Term Care Workers (ULTCW), works in partnership with SEIU locals, community organizations, and health plans in each of the three counties to carry out their training program. CLTCEC's partner, the Shirley Ware Education Center (Oakland, CA), initially served as the key contact (on behalf of CLTCEC) with partners in Contra Costa County, providing CLTCEC with status updates as needed and convening weekly calls. CLTCEC staff assumed the role of key contact with Contra Costa partners in the summer of 2013. The Shirley Ware Education Center continues to teach a portion of a course module on career exploration as part of the training program. Governance of the CLTCEC intervention within each participating county primarily involves the participating MCOs, the internal evaluation team at University of California, San Francisco, and relevant institutional stakeholders (for example, Contra Costa Employment and Human Services Department, which houses the IHSS program, is contracted by Contra Costa Health Plan to conduct recruitment in Contra Costa). A curriculum committee steers the development and pilot testing of the program's courses.

The program aims to serve up to 6,000 of the State's 423,000 IHSS beneficiaries who meet the criteria for high risk. Recruitment and retention of pairs of beneficiaries and their caregivers has proven to be

challenging, and initially enrollment was low and increased slowly. However, after a small downtick in the program’s fourth quarter, over the summer of 2013, the program appears to have regained momentum. Self-reported data provided by CLTCEC indicates enrollment numbers by quarter (Exhibit CLTCEC.1), for both direct participants (those whose services are funded by the HCIA grant) and those considered to be indirect participants (receiving services made available under the HCIA grant but not directly funded by the grant). As of March 31, 2014, the program estimated that it has enrolled a cumulative count of 1,264 participants.

Exhibit CLTCEC.1: Total Number of CLTCEC Participants, By HCIA Quarter



Context

CLTCEC’s HCIA project was launched with the support of the California Department of Social Services, which operates the largest in-home supportive services program in the country. The project depends on close collaboration between the educational partners, CLTCEC and the Shirley Ware Education Center, county agencies, SEIU affiliates, and at least one MCO in each county to match information for the high-risk IHSS beneficiaries targeted and their caregivers—family or non-family care providers—that the program hopes to recruit. The scale of effort in Los Angeles County also involves other community institutions to accommodate the large number (40) of concurrent CLTCEC classes, which may have up to 50 enrollees.

CLTCEC’s program is a novel initiative, and many of the complex organizational arrangements and operational decisions had to be made during the active period of the three-year HCIA award. Further, as described below, once launched recruiting practices, enrollment policies and even health plan partnerships have needed revision. CLTCEC’s leadership has been open and forthcoming about their delays and modifications, and seems to be making progress towards their goals.

Workforce: Staffing and Training

A wide range of roles are required for this intervention; as the project went on, strategies were revisited and staff roles evolved. Along with the leadership team and course instructors who organize and conduct the training, the project employs field staff (including Field Coordinators, Homecare Interns, and Regional Managers overseen by the Campaign Manager or Grant Manager), curriculum developers, and data staff (including a Grant Analyst, Data Associate, and Application Development Manager). Most of these staff members were hired early in the project period. Additional staff has been hired to support the program's geographic expansion and growing enrollments.

The curriculum is predicated on co-training the PHCA and IHSS client pair; the classes take place over a 17-week period. The curriculum focuses on proven readmission reduction factors, such as techniques for dealing with fatigue, nutrition, and effective communication with health professionals. These skills pertain not only to the ability of caregivers to assist clients, but also aim to build caregiver confidence so that they can effectively advocate for their clients. The awardee reports that curriculum development and ongoing revision has been critical for this intervention. A curriculum committee was involved in the development of initial course materials and format, and has also refined its approach in response to trainee feedback over the duration of the program. Revisions have included incorporating role-playing and hands-on learning as part of the core competencies training techniques, and encouraging trainees to volunteer their own experiences in caregiving in group discussions. Classes are taught in Spanish, Korean, Chinese (Cantonese and Mandarin), and Armenian as well as in English, and course materials are available in these languages also.

Community organizations, including United Long Term Care Workers (ULTCW), a California SEIU affiliate, have made training space available so that the CLTCEC can hold courses in areas that are closer to the PHCAs and clients throughout the three counties. The partnerships between CLTCEC and these community organizations are built on mutual goals of improving care for these clients and improving the PHCA workforce.

Implementation Effectiveness

Information about the effectiveness of the CLTCEC project from NORC's own data collection is limited at this time, as our site visit to the awardee was just completed. NORC is working closely with CLTCEC and its internal evaluation partner (the University of California at San Francisco) to tailor the collection of primary data needed to conduct NORC's evaluation. The information below is based on a series of phone calls with the awardee and their evaluation team and a review of CLTCEC's quarterly reports to CMMI.

Recruiting participants for the co-training has been a major focus of many of the project's efforts. Due to HIPAA concerns, MCOs do not share the contact information of high-risk clients with CLTCEC for recruitment. Instead, in Los Angeles and San Bernardino counties, CLTCEC recruits PHCA participants and contacts IHSS clients via the IHSS worker. CLTCEC is provided with contact information for IHSS workers through CLTCEC's partnership with SEIU ULTCW. Those workers who work more than 84 hours a month (a criterion for identifying PHCAs who likely care for a client with greater needs) are contacted, and the IHSS client then responds to questions to help identify them as high-risk (i.e., questions related to co-morbidities, SNF stays, ER visits, and hospitalizations). In Contra Costa County, the county IHSS agency works closely with the county MCO to recruit its members in the program. In order to assure proper use of identified client data and the sharing of personal health information for evaluation purposes, CLTCEC and its health plan partners devoted considerable time and attention addressing legal issues around the sharing of data. Data sharing agreements (DUAs) between CLTCEC and partnering MCOs, and informed consent documents for clients were carefully drafted. Initially, CLTCEC used a call center to recruit eligible clients into the program. However, various logistical and technological problems with the call center approach forced CLTCEC to launch a new recruitment strategy, the Voice for Better Care Campaign (VBC). VBC sends coordinators to visit clients in their homes, educate and inform them about the training opportunity, and ask them to sign up for the training and the project. The face-to-face home visit recruiting has been particularly effective for reaching and recruiting homebound participants. More recently, CLTCEC began using a hybrid approach recruiting participants through both initiating calls and home visits.

The awardee reports that although large numbers of caregivers were being recruited during the second cycle of VBC, many did not show up for the first day. CLTCEC adapted to these recruitment challenges by asking course coordinators to focus on retention among the current trainees. A system has been established for calling PHCA–client pairs who miss a class, so that these trainee pairs receive information about make-up sessions and are encouraged to continue with the program, and make up any missed classes. These calls are tracked in the phone log system.

The awardee reports that recruiting through home visits proved to be very effective, if arduous. Home visits foster a relationship between the PHCA–client pair and the field coordinator and can provide a positive experience with the program. Coordinators are able to listen to the client's story and gain insight into the everyday lives of their participants. Coordinators who conducted the home visits report having received positive reactions to the program and were able to build connections with trainee pairs. As this project is focused on training, curriculum development is a core aspect of the intervention. Instructors have reported that one of the biggest challenges is being able to convey the course materials to classes of

trainees with wide ranging learning styles, ages, and education levels. Focus groups are used to test curriculum changes before they are implemented. This feedback has guided curriculum development and made the classes more engaging for students. Recent adaptations include reducing the length of the courses from five to three-and-one-half hours and incorporating more hands-on exercises to keep students engaged.

The awardee reports that students' and instructors' responses to the curriculum revisions have been very positive. In particular, the role-playing activities have been effective. Participants express great pride in their education and report feeling more valued after the training. The CLTCEC program also helps to create a sense of community among the IHSS providers and to develop a support network of peers. Experienced student providers also appear to be an asset to the program, as they can speak about their personal experiences and engage the rest of the class.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that will inform our understanding of program effectiveness has been gathered during a site visit but not yet analyzed, nor have survey data been reviewed. Secondary data analysis based on claims and electronic health records is not yet complete; see Appendices B and C for updates on NORC's primary and secondary data collection and analyses. For these reasons, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

The CLTCEC program has been able to provide co-training to PHCAs and clients through working with community and health plan organizations, addressing the needs of the PHCAs and clients, and building on findings from their self-monitoring efforts. The program has demonstrated considerable flexibility in approaches to recruitment and curriculum. As the needs of the program outgrew the initial recruitment strategy, the CLTCEC added in-home visits for recruitment, which the awardee reports has not only been effective but has also provided the recruiters and the PHCAs and clients with greater satisfaction with the program.

The program leadership has demonstrated adaptability and responsiveness to the caregivers and clients whom they train as they have revised their curriculum and formats. The program has also reached ethnic

communities of non-English speakers by teaching in their trainees' first languages. The structure of the CLTCEC program, with many distinct participants and constituents—caregivers and clients, the State IHSS and Medicaid programs, and MCOs—does not, at this early stage, suggest an obvious long-term sustainability strategy. Clearly, State and federal Medicaid policies will largely determine whether such training can be supported, even if and when the integration of PHCAs into their clients' health care team is shown to reduce expensive utilization. The awardee's ability to amass the evidence to demonstrate offsetting savings in ED, hospital, and nursing home costs is the first step towards a sustainability strategy. In order for this program to grow, additional partnerships with community organizations will need to be formed, to provide space for classes in the growing geographic areas that this intervention serves. Stable partnerships with health plans are also key for identifying IHSS beneficiaries and thus for the program's growth.

Data Sources and Analysis

Sources for this report include program documents, awardee self-reported data uploaded to the Lewin website, and telephone interviews with the awardee.

Site Visit

A site visit to CLTCEC took place on September 15 and 16, 2014, too recently for inclusion of findings in this report. NORC will next code and analyze the full set of observational notes and link these thematic findings to quantitative data when available. Findings will be presented in the first and subsequent NORC reports to CMMI.

Survey

The University of California/San Francisco (UCSF) has developed a *workforce trainee survey*, administered to IHSS providers, and a *consumer experience survey*, administered to IHSS clients or beneficiaries. Each survey, unique in content, is administered at the start and finish of each 17-week training cycle. Clients spend the first and last sessions of the training series in the classroom with their Personal Home Care Aide, and it is during these sessions that the surveys are administered jointly. The surveys are administered via tablet to all IHSS providers and beneficiaries (if a beneficiary is unable to complete the survey, it is not administered, since the provider is present with the beneficiary, and the client survey asks questions about the provider) and are offered in multiple languages. Given the survey efforts already underway, NORC will rely on the results of the already established surveys as part of the evaluation. NORC is currently in discussions with UCSF about obtaining access to raw data from both the trainee and consumer surveys.

Secondary Data

NORC executed a Memorandum of Understanding with CLTCEC on April 24, 2014 and is seeking to establish data sharing agreements with CLTCEC's health plan partners to receive identifying information on participating Medicaid beneficiaries, and potentially additional administrative data. NORC is also negotiating a data use agreement (DUA) with UCSF, the awardee's evaluation subcontractor, in order to receive survey data collected by CLTCEC that UCSF is analyzing for the awardee. Once these agreements are finalized, we will use the data provided by CLTCEC and their partners to assess the program's impact on measures of health, quality of care, utilization and costs for the Medicaid, and dually eligible Medicare beneficiaries served through California's IHSS.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by CLTCEC on April 30, 2014.

HCIA Quarterly Report for the California Long-Term Care Education Center (CLTCEC), for Reporting Quarter End Date 3/31/2014. Submitted by CLTCEC, 4/30/14.

Interviews

NORC. Interview (Telephone), Awardee Data Sharing. CLTCEC and UCSF, Jan 7, 2014.

NORC. Interview (Telephone), Survey. CLTCEC, April 2, 2014.

NORC. Interview (Telephone), Survey, 2nd call. CLTCEC, April 25, 2014.

NORC. Interview (Telephone), Survey, 3rd call. CLTCEC, May 20, 2014.

NORC. Site Visit. CLTCEC, September 15-16, 2014.

Courage Kenny Rehabilitation Institute

This report presents NORC’s evaluation of Courage Kenny’s Advanced Primary Care Clinic (APCC), from program launch through August 2014. The Advanced Primary Care Clinic is a medical home model focused on chronic disease self-management, independent living skills, supported by telemedicine based at a patient’s home, to decrease utilization, and improve patient engagement and health for Medicaid and dually-eligible patients with disabilities in the Minneapolis-St. Paul area. Common conditions among the targeted patient population include spinal cord injury, traumatic brain injury, cerebral palsy, and musculoskeletal conditions.

We provide initial observations about the Advanced Primary Care Clinic based on a review of program documents current through the awardee’s seventh quarterly report CMMI, a series of telephone interviews with the awardee, and a site visit that NORC conducted in July 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC will present more definitive findings and results in subsequent reports to CMMI.

Overview of Awardee

CMMI Category for Awardee:	Rehabilitation Facilities/Providers
Funding Amount:	\$1,767,667
Launch Date:	10/1/2012
States Where Located:	Minnesota

The Courage Kenny Advanced Primary Care Clinic builds on a successful demonstration piloted in a two-year pilot phase prior to the HCIA award. The pilot is reported to have demonstrated a 70 percent decrease in hospital days overall; a 65 percent decrease in emergency room visits for the five most common causes of avoidable hospitalization for the target population; a 50 percent decrease in the 30-day readmission rate; and improvements in patient engagement, patient-reported healthy days, and patient satisfaction. Courage Kenny Rehabilitation Institute (CKRI) estimates that its health care home model saved the State Medicaid program—called Medical Assistance in Minnesota—close to \$2.4 million in reduced hospitalizations over the first two years of operation.

In 2013, Courage Center merged with Sister Kenny Rehabilitation Institute to form Courage Kenny Rehabilitation Institute operated by the Allina Health System. Allina is the largest integrated health care

system in the State of Minnesota and is now the parent organization of CKRI. Merging Courage Center and Sister Kenny was a unique opportunity because the two organizations' missions were complementary and their respective cultures were aligned. The goal of and vision for the merger was to create a resource and set of services that anticipate the direction that health care has been taking: moving away from fee for service (FFS) and toward population health management, encompassing an integrated continuum of services broader than that typically considered to be health care. Allina thinks of CKRI as a laboratory for health care payment and delivery innovations for complex populations.

Within the Allina Health System, the Courage Kenny Rehabilitation Institute's Advanced Primary Care Clinic is a health care home for Medicaid and dually eligible adults, in addition to commercially insured, with disabling conditions (e.g., spinal cord injury, traumatic brain injury, cerebral palsy, and musculoskeletal conditions) who live independently in the Minneapolis-St. Paul area. The goals of the intervention are to reduce the number of hospital days, and the rate of 30-day hospital readmissions, as well as to improve patient health and engagement by integrating medical and community-based care.

In addition to the primary care clinic at Courage Kenny, clients may participate in a number of ancillary services that are offered as part of the HCIA award, including Independent Living Skills, the Chronic Disease Self-Management Program, and Telemedicine. Clients come to the primary care clinic through different referral sources and other CKRI--based programs or services. In addition to receiving care by either a physician or nurse practitioner at the clinic, clients have a care coordinator who plays a vital role in the care and management of clients' health, including education and preventive care. The care coordinators are integrated into the care team and serve as the primary contact with the client. Care coordinators contact their clients at least quarterly to update care plans, conduct health promotion and patient education, ensure that clients schedule and attend all necessary appointments, fill prescriptions and take their medications, and facilitate social support that aids in problem solving.

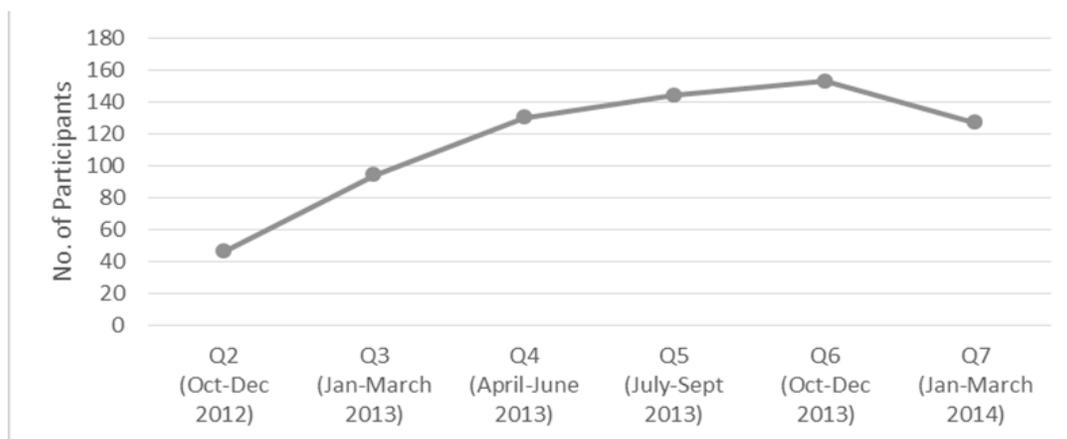
Another important component of the care provided at Courage Kenny is the colocation of two specialty clinics: psychiatry and physical medicine and rehabilitation. Approximately one year ago, CKRI began to pilot a more intentional model of integrated behavioral health services, to manage the entire clinic population with respect to behavioral health. The focus was on improving the diagnostic process, treatment protocols, training, and supervision of care coordinators (who help to address behavioral health concerns), and psychiatric treatment.

The Advanced Primary Care Clinic offers intensive care coordination; telemedicine visits with providers; and in-home support with Independent Living Skills (ILS) specialists and patient education and self-

management skills with the chronic disease self-management program (CDSMP). While CKRI provides training for the ILS specialists for this intervention, some specialists who were already CKRI employees may have received previous training. Facilitators who run CDSMP are trained by the Minnesota Department of Health. Volunteers offer in-home technology support during telemedicine consults, and often serve as another set of eyes for the clinical team, noting general observations when visiting clients in their own homes. CKRI’s clients live independently with community-based supportive care.

Self-reported data provided by Courage Kenny includes participation data by quarter (Exhibit CK.1) for both direct participants (those whose services are funded by the HCIA grant) and those considered to be indirect participants (receiving services from staff trained under the HCIA grant, where services are not directly funded by the grant). These data indicate a relatively steady increase over time up until the end of December, 2013, when enrollment peaked at 153 participants. In December, the project team made a decision to limit enrollment to internal referrals from CKRI’s inpatient transitional rehabilitation program in order to more clearly define the combined programs’ services and refine enrollment criteria. As of March 31, 2014, there were 127 participants reported for the Advanced Primary Care Clinic.

Exhibit CK.1: Total Number of APCC Participants, By HCIA Quarter



Context

While Courage Center and Sister Kenny were similar in their missions, the services they provided were different. Sister Kenny operated under a traditional medical model of care, with hospital-based rehabilitation units and a large physician practice that attended patients in the hospital itself. Courage Center, on the other hand, provided more community-based and social services (e.g., ILS). The services provided within the new Courage Kenny Rehabilitation Institute are within a spectrum that encompasses

acute rehabilitation, sub-acute rehabilitation, physician services, outpatient therapy, and community services (such as ILS or vocational services).

Overall, staff at Courage Kenny acknowledges the benefits of the merger, including the availability of more resources, such as professionally produced patient education materials that can be readily distributed to patients, additional educational classes for clients, and prescription assistance. Furthermore, clinicians note the increased ease of making referrals to specialists who operate within the merged organization. The staff also appreciates the support and recognition it has received from the Allina leadership, who acknowledge the team's hard work and accomplishments. In addition, staff noted that their roles are more specific and standardized, which helps them to fulfill their respective responsibilities.

At the same time, staff acknowledges that there have been some challenges related to the merger, including a planned temporary reduction in enrollment in order to clarify the goals of the program and the target populations. Furthermore, the staff is keenly aware of the potential negative effects of the merger on its client base and has noted dissatisfaction reported in its patient surveys. In focus groups conducted during NORC's site visit, clients have reported concern about the potential loss of identity of Courage Kenny in the larger, more bureaucratic system, describing their frustration with the "branding" of Allina Health on signage throughout the facility. Clients also raised concerns about issues such as the phone system, billing system, and physician turnover (even though this began even before the merger), with the last being particularly worrisome.

Workforce: Staffing and Training

Social workers and human services workers are trained as Independent Living Skills (ILS) specialists. ILS specialists complete a 40-hour on-the-job training, as well as ongoing supervision and periodic training updates. ILS specialists generally have undergraduate degrees in social sciences or humanities. During the first week of employment, new ILS specialists shadow veteran ILS team members to observe billing, paperwork, and intervention styles. For their first three months of employment, ILS specialists meet with their supervisors weekly for training on social skills or problem-solving with clients, after which they gradually build up their own caseload. ILS specialists complete annual training modules on vulnerable adults and child protection reporting, as well as Allina Health System information privacy and security compliance. Furthermore, as of January 2014, Minnesota now requires all ILS specialists to have a home and community-based services' license. A small number of CKRI staff (care coordinators/registered nurses) and client peers are trained using Stanford University's 32-hour chronic disease self-management program curriculum through the Minnesota Department of Health. The program includes self-management tools, goal setting, and working with that support system. Finally, the intervention

recruits skilled retirees (nurses, social workers, etc.) to serve as telemedicine volunteers, once they have completed a six-week, 20-hour telemedicine training class.

The Advanced Primary Care Clinic uses both physicians and nurse practitioners to deliver acute care, each practicing independently but available for consults as needed. Care coordinators, who are also registered nurses (RNs), play a unique role in the Courage Kenny model, coordinating medical, social, and behavioral health services based on individual client needs. Utilizing RNs in this capacity is not typical in other settings. Care coordinators customarily have well-honed critical listening and observational skills, and patience to understand and work with Courage Kenny clients who may not be able to articulate their thoughts and needs due to cognitive deficits.

As of December 2013, there are eight Independent Living Skills workers and 10 telemedicine volunteers.

Implementation Effectiveness

In 2013, Courage Kenny slowed enrollment into its program after leadership became concerned about too broad a recruitment of patients who did not meet the target criteria for inclusion, where patient needs could not be adequately addressed with planned staffing and where patients themselves had not experienced high levels of hospital utilization prior to enrollment. Courage Kenny specializes in helping clients who have complex neurological conditions such as stroke, brain injury, or spinal cord injury. The clients who were initially enrolled had considerably more mental health conditions than the facility was prepared to address. Given the mix of clients, as well as a shortage of physicians in the clinic, Courage Kenny re-evaluated the types of clients they were best able to serve and refined their admissions criteria and process to focus on having an impact on utilization, as during the initial pilot phase. This pause in enrollment affected numbers in other programs, too, including the Independent Living Skills program.

Since the merger with Allina, CKRI is moving toward adoption of a new electronic health records (EHR) system, Epic. A common EHR will allow CKRI to integrate with the larger health care community and other service providers, enabling better access to current patient information. Staff is excited about the potential to be able to connect with one another and other providers more efficiently, including the ability to recruit clients from within the Allina Health System.

The Chronic Disease Self-Management Program is a 6-week program based on an evidence based model and curriculum developed by Stanford University and provides coaching to help clients in managing their care. The ILS program is provided to clients who are “near-poor” and who would not otherwise qualify for the same service covered by a Medicaid waiver. Staff and clients spoke very highly of the role of ILS services in clients’ lives. Telemedicine services allow clients to communicate with their providers

remotely, helping to overcome access issues often related to transportation for this population. The telemedicine program is staffed by volunteers, with home visits to clients to offer assistance with telemedicine equipment set-up and also to help with the collection of biometrics (e.g., blood pressure). Volunteer visits provide a social component, too, which helps combat isolation, and volunteers often help take notes for the client during provider visits. The volunteer-facilitated telemedicine program helps empower clients to take a more active role in their own health management. The staff at CKRI notes that the volunteer role is an important part of the program's history, and something that is not a regular feature of other health care programs.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. NORC has not yet acquired claims and electronic health record data for the clients of Courage Kenny's Advanced Primary Care Clinic. For this reason, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Measures of program effectiveness related to patient and informal caregiver satisfaction and experience with the intervention have been captured as part of NORC's site visit, and NORC plans to field a patient experience survey in collaboration with CKRI.

Based on team member interviews, focus groups conducted with ILS patient groups and also the telemedicine volunteers, as well as observations noted during the two-day site visit, the NORC team noted the inherent strength of the program's integration of care coordination as an essential aspect of care for the challenging target population. The "co-location" of care, the provision of complementary services, such as primary care, acute care services, mental and behavioral health, as well as physical medicine, enables the Courage Kenny Rehabilitation Institute team to provide a well-rounded base of care. Furthermore, support and recognition of the care coordinators by the organization's leadership emphasized the importance of their role and of the work they do, and staff dedication is certainly a contributing factor to the program's success.

While the merger under Allina enabled integration within a larger clinical team and access to additional clinical resources, it also provided some challenges, affecting in particular staff turnover and patient

enrollment. Patient perception of the merger as a sign of possible instability has been a further challenge, particularly with the resultant loss of the Courage Center identity.

The program does not yet have an electronic health record, but is in the process of adopting an EHR shared throughout the Allina system, which will further facilitate the integration of health care providers, supports and services for the target population.

Sustainability, Replicability, and Scalability

The CKRI identity, from both the patient and staff perspective, is critical to the success of the clinic. The close-knit community and strong relationship between patients and staff contribute to the patients' trust and confidence in their caregivers, and also provides the staff with the personal and professional satisfaction of providing meaningful care. Maintaining this identity in the context of the larger Allina system will be a key factor in the program's sustainability.

Although the team narrowed its enrollment criteria to better match client needs with staff expertise, it remains to be seen whether a larger degree of flexibility in enrollment criteria would be more appropriate in order to meet the changing needs of the target population. Staff recognizes the benefit of having complementary patient services offered under the single Allina Health organization, an advantage to this program particularly since this complex group's medical and social needs are multivariate. While this patient group can, and frequently does, present with complex medical issues, the larger concern is often related to aspects of social care, such as food and housing. As staff noted, these social issues are the ones that often have the bigger impact on hospitalization rates. Therefore, it is hoped that having access to the combined services, including care coordination and ILS staff, under Allina Health will be reflected in decreased hospital utilization.

Data Sources and Analyses

Sources for this report include program documents, awardee data reported to CMMI, telephone interviews with the awardee, and a site visit.

Site Visit

A site visit was completed July 14 and 15, 2014. Interviews were conducted with Allina Health System administration and CKRI program staff, and focus group discussions were conducted with CKRI clients and telemedicine volunteers. NORC will code and analyze the full set of observational notes and will link these thematic findings to quantitative data when available. Findings will be presented in subsequent NORC annual reports to CMMI.

Survey

CKRI is not fielding a *workforce trainee* survey. Given the relatively small number of trained staff (as of the awardee's Q7 report, eight Independent Living workers, 10 volunteers), NORC plans to use the site visit to gather primary data on workforce, in lieu of a survey.

CKRI does plan to develop a *consumer experience* survey, either in connection with Allina Health's ongoing CAHPS or as a stand-alone patient satisfaction phone survey. The stand-alone survey would complement CKRI's current collection from patients of four measures (CDC Core Healthy Days, PAM, PHQ-9, and the SCSJ Conditions Checklist), which are collected at baseline enrollment and then at six-month intervals thereafter. In consultation with CKRI, NORC is developing a stand-alone consumer experience telephone survey of the awardee's clients. We expect the survey to be fielded in fall 2014.

Secondary Data

NORC executed a Business Associate's Agreement with CKRI on May 14, 2014. At the time we began work on this report, we did not have the necessary agreements in place to receive data from CKRI. We look forward to presenting results on the program's impact on measures of health, quality of care, utilization and costs for the Medicare and Medicaid beneficiaries served by CKRI's program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by CKRI, 4/30/14.

HCIA Quarterly Report for Courage Kenny Rehabilitation Institute (CKRI), for Reporting Quarter End Date 3/31/2014. Submitted by CKRI, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. CKRI, April 29, 2014.

NORC, Interview (Telephone), Survey. CKRI, March 25, 2014.

NORC. Site Visit. CKRI, July 14-15, 2014.

Developmental Disabilities Health Services

This chapter presents NORC’s evaluation of Developmental Disabilities Health Services’ Developmental Disabilities (DD) Health Home program from launch through August 2014. The DD Health Home model relies on care teams, consisting of nurse practitioners and physicians, to provide integrated primary care, mental health services, and specialty medical care support for persons with intellectual and developmental disabilities (I/DD) receiving Medicaid or Medicare benefits, living in New Jersey and in the Bronx in New York.

We provide initial observations about the DD Health Home based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, a series of telephone interviews with the awardee, and a site visit that NORC conducted in April 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative data to be used as part of its evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Primary Care Clinics
Funding Amount:	\$3,701,528
Launch Date:	1/15/2013
States Where Located:	New Jersey, New York

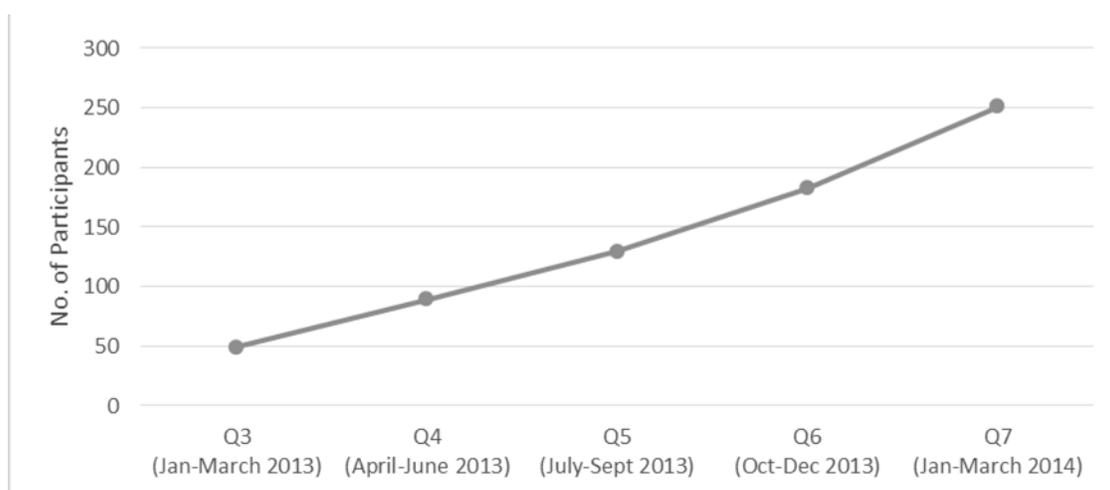
The Developmental Disabilities Health Services (DDHS)’ *DD Health Home* model aims to coordinate mental health services (behavioral and psychiatric) with primary care and some specialty medical care, such as neurology, for young adults and adults with intellectual and developmental disabilities (I/DD). The goal of the care coordination is to achieve improved care and health outcomes for the target population, as well as cost savings in overall medical care spending. The awardee notes that earlier implementation of the same DD Health Home model, prior to the HCIA award, at two sites in New Jersey resulted in improvements in clinical outcomes and also cost savings related to decreased numbers of emergency room visits and acute care hospitalizations.

The DD Health Home model uses a team of trained nurse practitioners to offer 24/7 care coordination for young adults and adults with I/DD who are Medicaid beneficiaries or who are dually eligible for Medicaid and Medicare. Fully implemented, this intervention includes a dedicated training and clinical

coordinator to educate staff, as well as pre-service training and clinical rotations for nurse practitioner students and medical students. Clinics are staffed with one nurse practitioner per office. Currently, these services are provided through six office sites: four in New Jersey and two in New York.

Self-reported data provided by DDHS show enrollment in the DD Health Home by quarter (Exhibit DDHS.1), indicating a steady increase over time. As of March 31, 2014, the DD Health Home had served 251 patients, well ahead of the site’s projected enrollment of 167 through this period.

Exhibit DDHS.1: Total Number of DDHS Participants, By HCIA Quarter



Context

This project has changed considerably since the time of the HCIA application for a variety of reasons, including the shifting market and political climate in New Jersey and New York and changes to the organizational structure of DDHS. At the time of the HCIA application, DDHS was in the process of disbanding, and it subsequently reformed when the HCIA award was received. These changes affected some of the existing relationships that DDHS had with other key entities in New Jersey. Unfortunately, these changes to DDHS resulted in decreased interest and limited participation in the project by partners that had been included in the HCIA application. Additionally, some data sharing agreements that had been in place under the old organizational structure were not retained when DDHS was reformed. This has made it difficult to identify and recruit potential patients to enroll in the HCIA-funded initiative.

For example, DDHS planned to partner with a Medicaid plan to set up a capitated payment structure to care for patients with I/DD. Although the Medicaid plan, a managed care organization (MCO), provided a letter of support as part of the HCIA application, it was unable to enter into the agreement as planned and was forced to move to a traditional fee-for-service (FFS) payment arrangement with DDHS. In the

time frame that it took to execute a FFS contract with this organization, the DDHS team was seeing patients without receiving reimbursement for the care and services provided to MCO members. New contracts with DDHS were not finalized until eighteen months into the HCIA award period and at least one contract has yet to be executed. Once signed, the FFS arrangement with DDHS has operated alongside bundled payments made by the MCO to other health care providers based on geographic location, so patients have frequently been seen by regular providers who are more conveniently located but who are not necessarily familiar or knowledgeable about working with the I/DD population. DDHS does, however, have a contract with Wellcare, but this is limited to about half of the counties in New Jersey.

Overall, the Medicaid marketplace in the State of New Jersey does not readily accommodate the needs of this complex patient population for specialty care and medical services. As the legacy contracts held by the State Department of Developmental Disabilities (DDD) that offer mental health services for this population are moved into the Medicaid managed care arena, provision of mental health services is diminishing drastically. In practice, I/DD patients receive all services from primary care providers, and the MCOs are not referring patients to providers who can offer the mental health services needed by this population. New Jersey State Medicaid capitates MCOs for I/DD enrollees at rates that reflect the presumption that these beneficiaries will have access to enhanced networks, as State contracts stipulate. However, these networks have not been established, and the number of MCOs that will accept I/DD patients has decreased from the previously available 14 to now only three, after consolidation, closure, or relocation out of State.

DDHS had also planned to launch a clinic in Arkansas, per its original proposal, but lack of interest from providers and differences in program and reimbursement schedules have resulted in significant delays in implementation and enrollment.

While each of these issues has delayed project implementation, they have not diminished the DDHS staff's dedication to and enthusiasm for working with the I/DD population. The integrated care model enables providers to spend as much time with a patient as is required to complete an assessment, whether that involves straightforward procedures such as measuring blood pressure, or more invasive procedures such as drawing samples for bloodwork. Accordingly, appointment times are flexible, and the staff engages the patient and any involved caregivers in all aspects of care in a supportive, unrushed pace. As evidenced by expressions of satisfaction with care by patients and caregivers alike during NORC's site visit, the Health Home approach appears to work well for the needs of this very vulnerable population.

Workforce: Staffing and Training

Each DDHS office location has a receptionist who manages patient intake and a nurse practitioner who sees patients. DDHS has found that dedicated team members who are flexible and able to adapt their work style to meet the needs of the I/DD population are the cornerstones of the Health Home approach. Nurse practitioners in particular must have strong communication skills, since they must be able to understand and communicate with non-verbal patients or those with limited language abilities. In addition to the nurse practitioner and receptionist at each office, project leaders travel to all of the practices and often conduct patient appointments and assessments themselves at some of the sites.

DDHS offers training to its employees with respect to serving the I/DD population. Using specialized I/DD clinical practice guidelines, leadership trains nurse practitioners in the provision of primary care to the I/DD population. Staff (both clerical and nurse practitioners) is also trained on data collection, and training materials include a formal handbook along with instructions and samples. Staff members also rely on continuing education programs for training and professional development, and they share successful approaches and experiences amongst themselves as teaching opportunities. The pre-service training for nursing and medical school students has yet to be implemented.

Implementation Effectiveness

The DD Health Home aims to be an integrated care model, including primary, behavioral, and psychiatric health care. The intervention is designed so that patients are able to schedule appointments, including same day appointments, as appropriate. In addition, DDHS schedules appointments for much longer than the traditional 15 minutes typically allotted for an office visit, using an unhurried consultation style, an approach that is very important for the I/DD population. The nurse practitioners seeing patients have flexibility to determine the most effective appointment length for their patient and to adapt protocols for procedures to best suit the needs of the patient.

The model is being implemented across several different sites. Each site operates autonomously, but adheres to the well-defined mission promoted by DDHS leadership.

As described above, contractual issues have meant that this project has been implemented differently than initially planned. Although DDHS originally was to provide services under a capitated model, the services are now provided under FFS arrangements. DDHS leadership decided that it was more important to provide services immediately rather than continue negotiating with plans to set up capitated arrangements, which could have taken considerably longer and delayed implementation.

While the model aims to be patient-centered, the sites' ability to tailor care to the individual patient is constrained by the cognitive and functional limitations of the patient population. Often, participants arrive with limited documentation and virtually no medical history, and they themselves are unable to provide additional information. In addition, the awardee must work with and through caregivers who are not family members, such as the staff of group residential facilities who accompany patients to visits, to ensure that high quality care is being provided and proper follow-up occurs.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. NORC has not yet conducted secondary data analysis based on claims and electronic health records for the DD Health Home and will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Measures of program effectiveness related to patient and informal caregiver satisfaction and experience with the intervention are being gathered through surveys conducted by Developmental Disabilities Health Services, as well as during NORC's site visit. Survey findings are not yet available to the NORC team for analysis and will be included in subsequent reports.

Sustainability, Replicability, Scalability

The site's staff agrees that implementation of the DD Health Home under the HCIA grant has encountered challenges based on the differences among States in the predominant approach to structuring and paying for Medicaid benefits. For example, Arkansas, a State that relies on fee-for-service payments in its Medicaid program, supports the idea of providing a health home arrangement for the DD population as part of reform of the long term care program. In New York, however, the State is aggressively pursuing contracts with Medicaid MCOs and is still trying to provide and pay for care for the I/DD group under waivers. As a result of the significant differences in the Medicaid service delivery and payment models, this awardee is maintaining the same clinical approach across States while trying to fit their business model into the various State-supported funding structures.

Data Sources and Analyses

Sources for this report include program documents, awardee self-reported data uploaded to the Lewin website, telephone interviews with the awardee, and a site visit.

Site Visit

A three-member team from NORC visited DDHS on April 10 and 11, 2014. Site visit activities included interviews with the project co-directors, training leadership, and program staff; a focus group with nurse practitioners trained as part of the intervention; and observations of patients and interviews with patients and their caregivers.

Survey

DDHS is not fielding a *workforce trainee* survey but does have a one-item provider satisfaction question that is fielded on an annual basis. Given the small number of trainees (as of the awardee's seventh quarterly report to CMMI, 4 nurse practitioners), NORC has used the site visit focus group and interviews to gather primary data on workforce, in lieu of a survey.

Since the start of its intervention, DDHS developed, validated, and fielded a *patient satisfaction* survey on a rolling basis. A shorter, 14-item pre-survey is administered at baseline, with a more comprehensive 32-item post-survey; both are administered in-person, with patients and their caregivers in office waiting rooms. Given the unique challenges of surveying the DDHS patient population, the NORC team plans to leverage the expertise and experience of DDHS in administering its own *consumer and caregiver experience* survey and coordinate with DDHS to add a subset of questions to its existing survey. NORC will work with DDHS to determine the most appropriate timeline for administering new NORC items within the DDHS instrument, and plans to take advantage of the quarterly survey data collection mechanism already in place at DDHS. NORC will be responsible for subsequent data analysis.

Secondary Data

NORC executed a Business Associate's Agreement with Developmental Disabilities Health Services on May 14, 2014. At the time we began work on this report we did not have the necessary agreements in place to receive data from DDHS. We look forward to presenting results on the DDHS program's impact on measures of health, quality of care, utilization and costs for the Medicaid and dual Medicaid and Medicare beneficiaries served by DDHS's program in future reports.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by DDHS, 4/30/14.

HCIA Quarterly Report for Developmental Disabilities Health Services, for Reporting Quarter End Date 3/31/2014. Submitted by DDHS, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. DDHS, Jan 8, 2014.

NORC. Interview (Telephone), Survey. DDHS, March 26, 2014.

NORC. Site Visit. DDHS, April 10-11, 2014.

Johns Hopkins University

This report presents NORC’s evaluation of the Johns Hopkins University Community Health Partnership (J-CHiP) program. J-CHiP provides care coordination services in two hospitals, eight community clinics, and in post-acute care settings such as skilled nursing facilities (SNFs) and in the home especially for underserved and high-risk Medicaid and Medicare patients in East Baltimore.

We provide initial observations about J-CHiP based on a review of program documents current through the awardee’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014); telephone interviews that NORC has conducted with the J-CHiP team, and a NORC site visit to Johns Hopkins University in March 2014. While this report presents themes that NORC has identified since the launch of J-CHiP, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection for J-CHiP or formally analyzed the quantitative data, survey data, and qualitative data we will use in our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of the Awardee

CMMI Category for Awardee:	Academic/University
Funding Amount:	\$19,920,338
Launch Date:	7/1/2012
States Where Located:	Maryland

The Johns Hopkins Community Health Partnership (J-CHiP) program aims to combine in-hospital, post-discharge, and clinic-based primary care interventions with community outreach services to coordinate the provision of services and enhance the quality of chronic disease management across the continuum of care. The components of the program build on internal pilots and ongoing programming that was in place prior to the award, including daily multi-disciplinary rounding, early risk-screening for complex discharge needs¹⁰ and Project Sugar.¹¹ In addition, J-CHiP’s designers and leadership reported that they also drew on a variety of evidence-based care coordination models in planning their program.¹²

¹⁰ Dedhia P, et. al. A quality improvement intervention to facilitate the transition of older adults from three hospitals back to their homes. *Journal of the American Geriatrics Society* 2009, vol. 57(9): 1540-6.

¹¹ Gary TL, et. al. A randomized controlled trial of the effects of nurse case manager and community health worker team interventions in urban African-Americans with type 2 diabetes. *Controlled Clinical Trials* 2003, vol. 25L: 53-66.

¹² Coleman EA, Mahoney E, Parry C. Assessing the quality of preparation for posthospital care from the patient's perspective: the care transitions measure. *Medical Care* 2005, vol. 43: 246-255; Jack BW, Veerappa KC, Anthony D, et al. A re-engineered hospital discharge program to decrease rehospitalization. *Annals of Internal Medicine* 2009, vol. 150: 178-187; Naylor MD, et al. Comprehensive discharge planning and home follow-up of hospitalized elders: a randomized clinical trial. *Journal of the American Medical Association* 1999, vol. 281(7): 613–20.

J-CHiP is one of the most extensive and diverse programs in the HCIA portfolio of awards targeting complex, high-risk patients. Its interventions at Johns Hopkins Hospital (JHH) and Johns Hopkins Bayview Medical Center (JHBMC) related to discharge planning and care transitions are expected to affect the discharges of roughly 40,000 adults annually by the third year of the HCIA award. Its community and clinic-based interventions in patient engagement and chronic disease management for high-utilizers of emergency department (ED) and inpatient services involve screening about 7,000 Medicaid and 10-14,000 Medicare high-risk patients and targeting an array of community-based services to 3,000 of those patients over the award period. Patients are identified via predictive risk algorithms (one for Medicaid enrollees and another for Medicare beneficiaries) and physician referrals. As of the end of the awardee's latest reporting period (Quarter 7), 1,144 adult Medicaid patients belonging to the Hopkins-sponsored Priority Partners Medicaid Managed Care Organization (PPMCO) had been screened and determined eligible for the clinic and community-based interventions. Just over half of these patients reside in the 7-zip-code area that surrounds JHH and JHBMC. The most prevalent conditions in this population are cardiovascular conditions, including hypertension and heart failure (91%); substance use, including alcohol, (71%); and diabetes, depression, and asthma (with prevalence ranging from 48% to 43%). J-CHiP estimates that over a third of this group has six or more chronic conditions.

Overall, the population directly served by J-CHiP interventions (as reported for Q7) is almost two-thirds adults between 26 and 64 years of age, and 30 percent adults 65 years of age and older. Forty-two percent are Black or African American, about half are white, and just two percent are Hispanic or Latino. Thirty-seven percent are Medicare beneficiaries and 30 percent are enrolled in Medicaid through Priority Partners. These percentages each include the seven and a half percent of beneficiaries who are dually eligible for both programs. A quarter of J-CHiP's patients have private health insurance and five percent are uninsured.

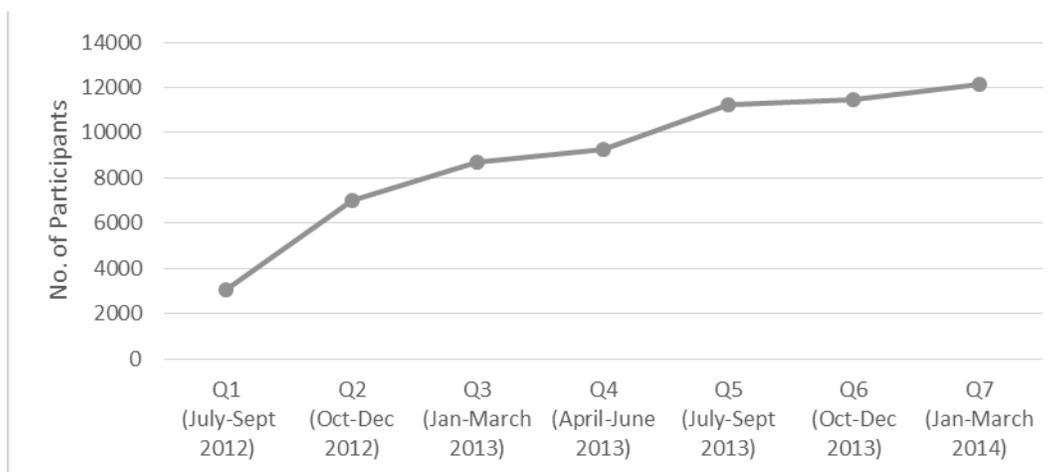
Within JHH, J-CHiP funding has allowed the hospital to accelerate the adoption of daily multi-disciplinary rounding, in which unit staff gather to discuss patients with the attending physicians, nurses, a case manager, pharmacists, social workers, care transition specialists, physical and occupational therapists and other staff as necessary, in order to address a patient's preparation for discharge from hospital and her anticipated needs for transitional assistance and services and social supports after discharge. The hospital began instituting this rounding practice five years ago, with one hospital unit. J-CHiP reports that the practice is now used by 16 inpatient adult units in JHH. JHBMC had instituted multidisciplinary rounding on all 14 adult inpatient units as of June 2013.

Pharmacy services play a prominent role in transitional services, with the unit pharmacist and pharmacy assistants providing patient education using the “teach back” method, medication reconciliation (both in-hospital and at home), and a popular Meds for Home initiative, whereby patients leave the hospital with their post-discharge medications in hand. The hospital discharge bundle of services instituted through J-CHiP also includes patient and family caregiver education, in both general self-care management skills and condition-specific information. J-CHiP has supported the expansion of behavioral health specialty services, both for inpatients and ambulatory patients. ED interventions aim to link patients with community-based providers and facilitate information exchange between providers. J-CHiP has also instituted a Patient “Anytime” Line (PAL), providing a post-discharge phone check-in by a dedicated Hopkins nurse.

In the community setting, J-CHiP has supported the addition of Case Managers, Health Behavior Specialists, and community health workers (CHWs) within seven Hopkins-affiliated clinics and the Baltimore Medical System Highlandtown clinic (an FQHC). In addition to clinic-based CHWs, J-CHiP has enlisted two community organizations, Sisters Together and Reaching (STAR) and the Men and Families Center, to provide direct patient outreach and supportive services to targeted patients and neighborhoods. STAR has a RN Case Manager and several Community Health Worker Case Managers (CHWCMs). The work of these organizations is referred to as Tumaini (Hope) for Health (“Tumaini” is Swahili for “hope”). The Neighborhood Navigators (NNs) from the Men and Families Center are trained through J-CHiP (but are not required to have advanced degrees or specific certifications or licenses) to canvas their own neighborhoods, introduce available health services and resources to residents, connect patients with resources in the community, and provide social support on a block-by-block basis. The RN CM and CHWCMs, employed by STAR, are trained to provide more advanced case management, working with social services and health professionals to coordinate care on a long-term basis. Both CHWs and NNs reside in, and their organizations are located within, the 7-zip code area in East Baltimore in which J-CHiP is especially active.

Self-reported data from Johns Hopkins provides information on enrollment by quarter, shown in the graph below. 44,714 patients and community residents have been served cumulatively since the start of the intervention. The data do not break down this count by intervention component. See Exhibit JCHiP.1.

Exhibit JCHiP.1: Total Number of J-CHiP Participants, By HCIA Quarter



Context

The J-CHiP initiative, under the auspices of Johns Hopkins University and in collaboration with affiliated organizations, including Johns Hopkins HealthCare, LLC (a health plan), Johns Hopkins Community Physicians (who staff the clinics), and Priority Partners MCO, has marshalled considerable institutional support and buy-in both among the Hopkins community and within the Baltimore community served. J-CHiP has a Community Advisory Board to help ensure that the J-CHiP mission and programmatic elements are in line with the needs and priorities of the community. The leadership of Sisters Together and Reaching and the Men and Families Center, two of J-CHiP’s community partners, serve on the Advisory Board.

As mentioned previously, several care transitions initiatives were in place in the Hopkins hospital system prior to the HCIA award, including daily multidisciplinary rounding, although J-CHiP leadership acknowledge that the fast pace at which the multidisciplinary rounding is spreading throughout JHH and the full scope of the discharge-bundle services would not occur without the HCIA support. Physician champions within the hospital are enlisted to generate support for the J-CHiP program, especially with regard to getting clinical units on board with multidisciplinary rounding.

Johns Hopkins’ leading role in the Priority Partners Medicaid MCO not only provides J-CHiP with enrollees’ administrative information for targeting outreach and health services, it also presents the opportunity for J-CHiP investments in care management, patient education and activation, and in preventive services, to reduce utilization elsewhere within the capitated plan.

All hospitals in Maryland operate within the fiscal environment of the State's unique all-payer rate-setting system, which operates under a federal waiver. In the spring of 2014, the Johns Hopkins Health System and Hospitals negotiated a global budget revenue (GBR) arrangement with Maryland's Health Services Cost Review Commission (HSCRC), the hospital rate-setting agency in the State. This GBR payment approach will affect JHH and JHBMC, the two hospitals participating in J-CHiP, starting in July of 2014. The GBR approach represents a change for the Hopkins hospitals, and at this time its effect on the hospitals' ability to absorb the costs of the enhanced discharge planning and transitional services provided through J-CHiP is unknown.

Workforce and Training

The J-CHiP initiative includes expanded roles for both current and newly recruited staff; the latter are largely within the clinic and community-based interventions. Within hospital settings, the most substantial change with respect to workflow, according to hospitalists and other practitioners we spoke with involved the transition to daily multidisciplinary rounds. Inpatient staff reported that "there is a lot of culture change required to get a bunch of people in a room to talk about patients in a meaningful way, since they don't want to give up so much time." Leadership reported that, within each unit as daily rounding was launched, clinical staff expressed skepticism because of the time involved, but over time the clinicians became more practiced and disciplined at limiting patient discussions to between one and two minutes per patient. The case manager, social worker, transition guide, home care coordinator, and pharmacists are also encouraged to re-group after the rounds to go over patient needs and discuss more plans of care in more detail.

Training for the hospital staff takes place over the course of a month on a unit-by-unit basis, in which J-CHiP leadership gather unit leadership, a unit physician champion, and multi-disciplinary team members (i.e. pharmacists, PT, home care, etc.) to go through the elements of the program and determine how the team fits into the larger J-CHiP initiative. The J-CHiP team also presents unit-specific patient outcomes and encounter data to discuss areas of improvement, and schedules monthly check-ins with the unit to track their outcomes data and discuss readmissions. New members to the teams are trained by "super users" (those particularly proficient in the approach) within the clinical units, using the "teach back" method supported with a didactic online training through the hospital's electronic portal and observation on the job.

The transitions guides are registered nurses (RNs), primarily with backgrounds in home care. However, they do not provide hands-on care in the home. Rather, their role is to provide guidance to patients and reinforce discharge instructions, aiding in facilitating self-management and connecting patients to

community resources if necessary. The guides work with patients for 31 days post-discharge, but some staff reported aiding patients past that window of time.

On the clinics and community side, both the eight affiliated clinics and STAR have recruited additional CHWs, and the NNs affiliated with the Men and Families Center are filling a new position with that agency. At the time of the NORC site visit in March 2014, the newly recruited CHWs with STAR and the NNs were just completing their J-CHiP orientation and training, and were about to begin their work. Combined under the banner initiative Tumaini for Health, the J-CHiP intervention managed by STAR and the Men and Families Center employs East Baltimore natives with cultural knowledge of the local population. The group of CHWs and NNs in the focus group conducted by NORC comprised individuals who had worked with nonprofit organizations, in public schools, within various units in the Hopkins system, and in assisted living facilities. This program benefits both the community at large and the trainees themselves. Some of the newly hired Neighborhood Navigators—whose positions are part-time—have been signed up for Medicaid since beginning their training with Tumaini for Health.

Community Health workers, nurse case managers, and physicians work in teams to coordinate care and prevent hospitalizations. All new workers are trained on the J-CHiP program (details and mission). Those who work in the community-based interventions are trained on how to use JCARE, the case management software that allows project staff to enter inpatient information and track patient contacts. Community mental health specialists are trained to provide several discrete modules, including ones for stress, smoking cessation, and depression. Inpatient nurses and pharmacists are trained using “teach back” methods.

Implementation Effectiveness

Throughout both the hospital and community settings, interviews with staff at all levels demonstrated a high level of dedication to the J-CHiP work and a clear and consistent understanding of the J-CHiP mission and philosophy. Hospital staff in particular praised the multi-disciplinary rounding for providing better context for addressing patients’ needs and preparing them for discharge and follow up care. One hospitalist summarized the experience by saying, “[the change] involved the collaboration of multi-disciplinary teams, the concept that we are no longer siloed, and every provider has a responsibility for patient outcomes.” One of the unit physician champions argued that getting buy-in for the rounding was challenging at first due to the additional time required during the roll-out phase, but eventually the unit physicians came to appreciate “getting fewer pages [about patients] during the day and [having to do] less damage control,” singling out the pharmacy assistance as particularly beneficial for patient care planning.

Further, many of the unit managers reported that having the unit-based outcome and readmission data has been important for refining the interventions and improving analytic capabilities within the hospital.

While the Tumaini (Hope) for Health component of the J-CHiP project had not launched at the time of the NORC site visit, both Johns Hopkins and community leadership reported that the implementation process was aided greatly by the inclusion of the community organizations in intervention planning.

Representatives from STAR and the Men and Families Center sit on the J-CHiP advisory board, and they were able to leverage their resources and learn from their organizations' previous community outreach to build the Tumaini (Hope) for Health initiative. The community workers also expressed excitement and passion about their upcoming work and stressed the importance of "meeting people where they are" in the community and teaching patients the importance of self-advocacy in getting the resources they need. The workers have a solid, experiential understanding of the people living in their community, and noted that even if patients are reluctant to listen to them at first, "It's only negative for a certain period of time. The more you come back, they will start to respond." Another remarked, "Living in the community all your life, there is a connection even if you haven't spoken."

One of the biggest challenges to implementing the intervention is the ability to electronically capture data and share information across the continuum of care. The Johns Hopkins system is transitioning to universal use of the Epic EMR. J-CHiP leadership reported, however, that the EMR's case management capabilities were not adequate for tracking the components of J-CHiP; as a result, J-CHiP built a home-grown case management platform called JCARE, built on a Salesforce platform. Additionally, the inpatient transitions guides and those working with transitions to SNFs use REDCap, a web-based data platform originally developed for clinical research data capture. The CHWs are able to read information from Epic, but can write only within JCARE, and they are not able to access REDCap data. Further, the notes entered into JCARE by the community workers do not feed directly into the Epic medical record. Leadership reported that the JCARE platform might be integrated into the Epic record in the future, but many of the staff across the hospital and community settings remarked about the challenges of sharing information across the data collection systems.

J-CHiP reported challenges with maintaining the technology and recruiting data analysts, a consequence both of the limited and highly sought-after workforce in IT and data management and of the less-than-competitive salaries for these positions that had been initially budgeted for in its HCIA application. Also, positions within a three-year project are less attractive than a comparable permanent staff position within the Hopkins system or other organizations. The team reported that it has been able to replace most of the

analytic workforce lost to turnover, but noted that the typical market salaries for these positions are difficult to match.

The newly-established Patient Access Line (PAL) has improved its patient acceptance rate of post-hospital, community-based services over time. While the PAL is still an outbound-only call system (patients cannot call the PAL line), PAL staff reported that patients have become more accepting of the services over time, particularly if the transition guides met with the patients in person prior to discharge rather than calling them afterwards. One PAL nurse argued, “Most [patients] want to participate, because the last day of a hospital stay is not the place for a patient to remember his or her questions.” Further, PAL staff noted initially that they had a very low call completion rate (not including wrong numbers) and discovered that because the PAL line would show up on caller ID as “Johns Hopkins Hospital,” patients thought they were calling about billing and were hesitant to answer the phone. Once the staff changed its caller ID to read “Hopkins nurse call,” completion rates improved.

The Health Behavior Specialists, who work with the patients with mental and behavioral health issues, have been able to achieve accelerated referrals for patients throughout the system, but the staff reported that these services were still challenging to arrange. Further, due to budget cuts, one of the community clinics had its psychiatric services carved out, and its payment model can only fund a part-time psychiatrist for a few hours a week. The clinic also reported that local resources, particularly involving transportation to appointments, do not always follow through, providing obstacles to patient treatment.

Program Effectiveness

NORC’s evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. We expect to have claims and other program administrative data for J-CHiP in house for analysis shortly, and will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Measures of program effectiveness related to patient satisfaction and experience with the intervention are being gathered through surveys conducted by the awardee. Survey findings are not yet available to the NORC team for analysis and will be included in a subsequent report.

Sustainability, Replicability, and Scalability

There is strong institutional support for the program; Hopkins is committed to continuing and expanding this work after the end of the award. J-CHiP is viewed not as a time-limited project but rather as a catalyst that will sustain itself past the end of the grant period. However, leadership notes that J-CHiP could not be doing the extent and intensity of the work that have been done to date without the HCIA funding.

Payment reforms will be necessary to sustain J-CHiP's efforts with respect to community and clinic-based services once HCIA funding ends. Hospital-based reformed discharge and post-hospitalization services may be less at risk than the ambulatory care and community-based interventions following the conclusion of the HCIA award period, although a significant portion of the newly deployed hospital staff is funded by J-CHiP at present. Multi-disciplinary rounds are supported by the hospital, but most of the analytics, technology, and behavioral health specialists are funded by the award.

Sustainability of extensive efforts is uncertain in the absence of re-oriented payment policies to compensate health systems for front-end (preventive) services to high-risk patients. Priority Partners MCO is owned by Johns Hopkins HealthCare and the Maryland Community Health System, which does provide incentives for applying resources to high-risk patients if overall program costs can be reduced. However, the level of financial incentives on the Medicare side is less clear, as many of the services are not billable. JHH leadership did note that the Maryland Health Savings Cost Review Commission has applied for a waiver that would allow it to pay Maryland hospitals on a capitated, population-based payment for Medicare, with the plan to form a global budget. It was not clear from the interviews how soon this program could be implemented or the likelihood of approval.

Data Collection and Analysis

Site Visit

A five-member team from NORC visited the Johns Hopkins Community Health Partnership on March 7 and 10, 2014. Site visit activities included meetings with program leadership, a panel from the Johns Hopkins Hospital inpatient workforce, the East Baltimore Medical Center J-CHiP team, the Comprehensive Care Practice team on the Bayview campus, an Ambulatory and Community Advisory Board Workforce Panel; observation of Inpatient Multi-Disciplinary Rounds at Johns Hopkins Hospital; and a focus group with Community Health Workers, Community Health Worker Case Managers and Neighborhood Navigators.

NORC is in the process of coding and analyzing the full set of notes from our site visit and will be linking these thematic findings to quantitative data when available. A more complete analysis will be included in subsequent NORC reports to CMMI.

Survey

The Johns Hopkins Community Health Partnership is fielding four versions of a *workforce trainee* (“site assessment”) survey, with similar questions slightly modified for primary care providers and residents, case managers, health behavior specialists, and community health workers. The site assessment survey includes the following domains: implementation readiness, change valance (value placed by the respondent on different reasons for the intervention), utility of intervention for reducing cost and improving quality, inter-professional teamwork, chronic care management, and relational coordination (self-reported changes in beliefs, knowledge, skill, and behavior around communication). The survey is to be fielded annually at baseline, and at one year and two years post-implementation. In addition, J-CHiP fielded a 14-item baseline workforce survey across five participating skilled nursing facilities, to measure teamwork and collaboration; this survey was administered at baseline and again in March 2014. Given the comprehensiveness of existing survey instruments and plans for administration, NORC expects to receive data from J-CHiP’s workforce surveys for its independent analysis.

While J-CHiP has access to hospital CAHPS de-identified data for a proportion of the patients enrolled in the intervention, in 2014 J-CHiP has developed an expanded *consumer experience survey* based on CAHPS questions. NORC has proposed a coordinated survey with J-CHiP, suggesting a small number of questions to be added to J-CHiP’s survey instrument; NORC anticipates receiving data from J-CHiP for analysis.

Secondary Data

NORC executed a Business Associate’s Agreement with Johns Hopkins Community Health Partnership on April 9, 2014. At the time we began work on this report we did not have the necessary agreements in place to receive data from J-CHiP. Since that time, we have finalized these agreements and look forward to presenting results on the program’s impact on measures of health, quality of care, utilization and costs for the Medicare and Medicaid populations served by J-CHiP’s program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by JHU, 4/30/2014.

HCIA Quarterly Report for Johns Hopkins University Community Health Partnership, for Reporting Quarter End Date 3/31/2014. Submitted by JHU, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone). JHU, December 9, 2013.

NORC. Interview (Telephone), Awardee Data Sharing. JHU, December 17, 2013.

NORC. Interview (Telephone), Site Selection. JHU, January 16, 2014.

NORC. Interview (Telephone), Survey. JHU, April 3, 2014.

NORC. Site Visit. JHU, March 7 and 10, 2014.

Johns Hopkins School of Nursing

This report presents NORC’s evaluation of a Johns Hopkins School of Nursing program entitled “Project Community Aging in Place, Advancing Better Living for Elders” (Project CAPABLE), from program launch through August 2014. Project CAPABLE provides a highly personalized combination of services to older adults who are dually eligible Medicare and Medicaid beneficiaries living in Baltimore, MD. The project helps beneficiaries to achieve greater independence, including living in their homes longer. The goal of the program is to improve health in this population and to reduce rates of admission to nursing homes and to hospital.

We provide preliminary observations about Project CAPABLE based on a review of program documents current through the awardee’s seventh quarterly report to CMMI, a series of telephone interviews with the awardee, and a site visit that NORC conducted in April 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC will present more definitive findings and results in subsequent reports to CMMI.

Overview of Awardee

CMMI Category for Awardee:	Academic/Universities
Funding Amount:	\$4,093,356
Launch Date:	11/12/2012
States Where Located:	Maryland

The Johns Hopkins School of Nursing’s Project CAPABLE offers a 16-week intervention for dually eligible seniors living in Baltimore, MD, who report difficulty performing daily living activities that includes home-based care, care coordination, and environmental modifications.

Project CAPABLE originated from two previous studies, replicating the structure of an earlier Baltimore-based pilot study with 40 participants and incorporating modified elements of the Philadelphia-based ABLE project, which served 318 consumers and demonstrated success through a randomized control trial. Project CAPABLE is part of an effort to determine if these kinds of resource-intensive programs will save money over time, both directly and indirectly.

The primary intervention goal is to reduce nursing home admissions and hospitalizations for the target population. Project CAPABLE uses a three-pronged approach to achieve this goal: home-based care,

environmental modifications, and workforce training. Home-based care consists of a Project CAPABLE team, including an RN and an occupational therapist, who conduct home visits to enrolled participants throughout the course of the 16 week intervention. This team works closely with the enrolled consumers to identify goals, implement a care plan, navigate the health care system, and facilitate access to resources. For the environmental component, the Project CAPABLE team provides a handyman who assists with home safety repairs and modification services that the participant requires. Both the home-based care and environmental modification components are tailored to the participant's specific functional goals.

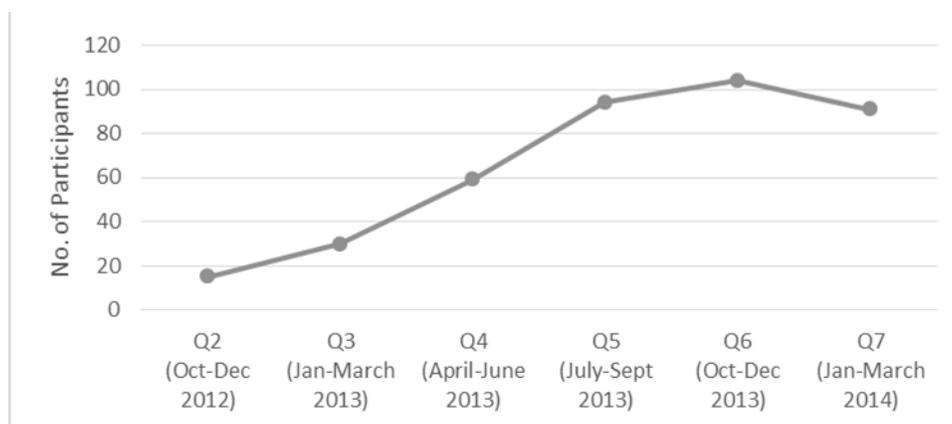
The third component, workforce training, focuses on two main groups: the nurses and occupational therapists who conduct home visits as part of the project. Trainings are separated to ensure quality assurance and continuity. Handymen are also trained on how to analyze the home to determine what should be fixed, i.e., what is worth the investment of fixing and what will enhance home safety.

In addition to workforce training and improving the care and safety of enrolled participants, Project CAPABLE has also conducted a considerable amount of community outreach. To expand awareness and reach potential participants, the project has used social and traditional media, partnered with the Maryland Department of Health and Mental Hygiene and a number of other community organizations, and established a working relationship with a skilled nursing facility in the community. This intervention has received favorable responses from the State, community, partnerships, and individual families and patients. In addition, Project CAPABLE has had measurable success in improving participant activities of daily living. For example, the number of participant activity limitations decreased from 4.2 (SD of 2.3) at baseline to 2.0 (SD of 1.1) after program completion. The team is currently working with the State of Michigan to pilot Project CAPABLE through their Medicaid waiver and further expand the program.

Project CAPABLE targets seniors who are eligible for both Medicare and Medicaid, need assistance with the activities of daily living, live in a home, and are not enrolled in PACE or a waiver program. The inclusion criteria were briefly relaxed to include cognitively challenged participants. This inclusion criterion has since been reversed, although participants included at that time were still involved in the program at the time of the site visit. Self-reported data provided by JHU SON reports enrollment by quarter (Exhibit 1). As of March 31st, 2014, a total of 690 participants have been assessed for eligibility during the current reporting period. Among this group, 232 were excluded because they did not meet inclusion criteria, declined to participate, or for other reasons not specified. The cumulative count of enrollees through March 31, 2014 was 145.

Since the last reporting, 16 additional participants have been enrolled, bringing the total enrollment number to 163. Nine participants discontinued participation during the intervention and also declined to be reassessed. Additionally, 93 participants have completed their program and their reassessments. See Exhibit JHU SON.1.

Exhibit JHUSON.1: Total Number of Project CAPABLE Participants, By HCIA Quarter



Context

Project CAPABLE has several strengths in terms of organizational capacity and leadership, participant engagement, and collaborative partnerships. The project appears to have a collaborative, dedicated staff and a positive working environment. NORC observed that there is a strong staff commitment to making the intervention succeed. The project ethos is one of personalized and professional care. The leadership appears dedicated, specifically in terms of troubleshooting, dissemination, and translation of research into practical applications. Beyond team leadership, because the program is largely patient-driven, participants are extremely committed to the project as well. In addition, Project CAPABLE collaborates regularly with a host of community partners, including the Baltimore City Health Department, neighborhood associations throughout Baltimore, Baltimore City Department of Social Services, Johns Hopkins Community Health Partnership (J-CHiP), and Experience Corps AARP division. As observed on a recent site visit, the combination of JHU’s urban setting and its extensive community network has provided an environment for this project to flourish.

The program currently appears to have sufficient organizational capacity to grow and expand. Since inception, the program has grown from one part-time employee to 17 full-time employees. Currently, program staff training occurs in bi-weekly meetings to identify unique and common situations on site and in the field and to discuss possible solutions. In addition to funding from CMMI, the awardee is

conducting a randomized clinical trial supported by the NIH, during the same timeframe as the HCIA funding award; the study designs under the HCIA project and NIH complement one another. The project has also worked with CivicWorks since 2009 to apply for relevant grants. Despite current organizational capacity, NORC observed that a lack of long-term assessment of cost, utilization, and behavioral change might represent potential gaps in the program that will need to be addressed.

Currently, project implementation does not appear to be significantly affected by exogenous factors. However, external factors may come into play as the project expands to other locations, such as Michigan, which might have a different political, economic, and regulatory environment than Baltimore.

Workforce: Staffing and Training

There are four main roles within Project CAPABLE, including RN, OT, handyman, and project recruiter/data collector. As of December 31st, 2013, there were three RNs and three OTs actively working with the project. As previously mentioned, the RN addresses health care needs, the OT works with the participant on improving their capability to engage in the activities of daily living, and the handyman works on home safety repairs and modifications. The project recruiters/data collectors are in charge of assessing eligibility, enrolling participants, and collecting data for the study. Currently, the project has had little staff turnover and is expanding the number of project employees.

Two bi-weekly meetings are held regularly for different groups of staff. The first group involves the clinicians (the RNs and OTs) who are delivering home-based care. The second group involves data collectors who assess eligibility to participate in the study. Meetings for each group focus on interdisciplinary case assessment, situations that have occurred on site and in the field, and how each situation was addressed. These informal “trainings” also provide the opportunity for clarification, staff requests, or education on new tools being used.

The OT on the study visits is considered a consultant, rather than an OT practitioner. This is in part because OT practitioners in the traditional setting are not allowed to begin the care plan process. In this consulting capacity, the OT avoids any potential concern related to scope of practice.

Implementation Effectiveness

The pilot for Project CAPABLE was conducted using the ABLE project as a foundation from which to build the project. However, as the project has grown, there have been several modifications that set it apart from the original ABLE structure. The inclusion of a handyman and an RN changed the home-based care team organization and modified the protocol for handyman work. The project also builds on

the implementation team's experience in conducting a randomized control trial supported by an NIH grant.

Project CAPABLE's recruitment has also expanded in scope. Although the project eliminated the recruitment of individuals with cognitive impairments, it began to reach out to a variety of other community resources and expanded the project area to Baltimore County. Discussions to further develop the project for other sites around the country, such as Michigan, are in progress.

Much of the effectiveness of Project CAPABLE can also be attributed to the patient-driven nature of the intervention. The project is tailored to the needs of each patient, in terms of their health care, their daily activities, and the home safety modifications they require. The CAPABLE team bases their activities on the functional goals of a particular patient. Thus, this highly specific intervention is targeted to be effective in transforming a particular situation.

Despite the high level of patient-centered care, program implementation appears to be consistent among the teams. To maintain uniformity, clinicians have attended selected site visits with each other to observe practices and certain visits are discussed at case conferences held every two weeks. Additionally, all visits with clinicians are taped, and then reviewed by a peer. Written feedback from the recordings is given to the project director. The project has online modules for training that provide short snippets about each session and the objectives for each visit. Clinicians write down quotations and stories from participants, as well as write up their own summaries of working with participants, in order to compile a list of lessons learned. These practices ensure that the intervention is implemented as uniformly and as effectively as possible for each enrolled participant.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Secondary data analysis based on claims and electronic health records is not yet complete for Project CAPABLE. For this reason, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Measures of program effectiveness related to patient satisfaction and experience with the intervention are being gathered through surveys conducted by JHU SON, as well as through NORC's site visit. While

survey findings are not yet available to the NORC team, preliminary observations based on the site visit are noted below.

Sustainability, Replicability, and Scalability

While Project CAPABLE has been successful in Baltimore thus far, it may prove difficult to sustain. Because this intervention requires a highly dedicated team of RNs, OTs, and handymen, sustainability may hinge on the program's ability to retain committed staff members. JHU SON expressed some concerns about sustainability of this intervention particularly in terms of how they have staffed the environmental modification component of the project. Currently, AmeriCorps volunteers serve as handymen. Changes to this arrangement may affect sustainability, depending on the new source of staff, e.g., whether volunteer or paid, and whether the staff is experienced or require training. Data are still being collected to determine the cost of implementing this intervention. Once these data are analyzed, JHU SON will have a better sense of sustainability.

Replicability and scalability of this program are questionable for similar reasons. For example, it is unclear whether the program could be implemented in the same way in other locations, or expanded, if AmeriCorps volunteers were not hired to staff the environmental modification component and if for-profit contractors were used instead. Cost data might also help address this issue.

Data Sources and Analyses

Sources for this report include program documents, awardee data reported to CMMI, telephone interviews with the awardee, and a site visit.

Site Visit

NORC conducted a site visit to Project CAPABLE on April 8 and 9, 2014. Site visit activities included interviews with the project director, research staff, recruitment and data collection staff, and the project team as a group; an interview with Project CAPABLE partner CivicWorks; one focus group with participants and another with team clinicians (including nurses and occupational therapists); and two home visits.

Survey

Project CAPABLE measures the competencies of its nurses and occupational therapists both before and after training, to certify readiness to implement the intervention. Due to the relatively small number of

trainees, NORC has used focus groups, interviews, and observations during the site visit to gather primary data on the *workforce trainee* experience, in lieu of a survey.¹³

An interview with each consumer is conducted as part of assessment at the time of enrollment, and a patient satisfaction survey is administered four months post-enrollment. NORC is exploring the possibility of coordinating with JHU SON on a *consumer experience survey* by adding questions to the ongoing patient satisfaction survey. JHU SON has expressed willingness to share data for analysis by NORC.

Secondary Data

NORC executed a Non-Disclosure Agreement with Johns Hopkins School of Nursing on April 28, 2014; however, at the time we began work on this report, we did not have this agreement in place to receive data from JHU SON. We look forward to presenting results on the program's impact on measures of health, quality of care, utilization and costs for the dual-eligible (Medicaid and Medicare) population served by JHU SON's program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by JHUSON, 4/30/14.

HCIA Quarterly Report for Johns Hopkins University, for Reporting Quarter End Date 3/31/2014. Submitted by JHUSON, 4/30/14.

Pho AT, Tanner EK, Roth J, Greeley ME, Dorsey CD, Szanton SL. Nursing Strategies for Promoting and Maintaining Function among Community-Living Older Adults: The CAPABLE Intervention. *Geriatric Nursing* vol. 33#6 (2012): 439-445.

Szanton S, Thorpe RJ, Boyd C, Tanner EK, Leff B, Agree E, Xue Q-L, Allen JH, Seplaki CL, Weiss CO, Guralnik JM, Gitlin LN. Community Aging in Place, Advancing Better Living for Elders (CAPABLE): A Bio-Behavioral-Environmental Intervention to Improve Function and Health-Related Quality of Life in Disabled, Older Adults. *Journal of the American Geriatrics Society* vol. 59#12 (2011): 2314-2320.

¹³ As of the awardee's Q7 report, the intervention employs the following number of trained staff: 4 RNs, 4 occupational therapists, 3 handymen, and 7 direct care workers.

Interviews, Site Visits, Communications

NORC. Interview (Telephone), Awardee Data Sharing. JHUSON, March 20, 2014.

NORC. Interview (Telephone), Awardee Data Sharing #2. JHUSON, January 6, 2014.

NORC. Interview (Telephone), Site Visit Planning. JHUSON, March 13, 2014.

NORC. Interview (Telephone), Site Visit Planning. JHUSON, February 26, 2014.

NORC. Interview (Telephone), Survey. JHUSON, April 16, 2014.

NORC Site Visit. JHUSON, April 8-9, 2014.

Szanton, Sarah. Email to CMMI Re: HCIA Evaluation First Quarterly Report. June 6, 2014.

LifeLong Medical Care

This chapter presents NORC’s evaluation of the LifeLong Complex Care Initiative from program launch through August 2014. The program aims to address complex health and social needs of low-income adults with disabilities and seniors by providing comprehensive clinical case management and peer support to empower enrollees to increase independence and self-management, thereby improving health outcomes and reducing avoidable emergency room and inpatient utilization.

We provide preliminary observations about the Complex Care Initiative based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, a series of telephone interview with the awardee, and a site visit that NORC conducted in May 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of the Program

CMMI Category for Awardee:	FQHC/CHC
Funding Amount:	\$1,109,231
Launch Date:	2/26/2013
States Where Located:	California

LifeLong Medical Care (LifeLong), a group of federally qualified health centers (FQHCs) based in Berkeley, California, partnered with Berkeley’s Center for Independent Living (CIL) and the Medicaid managed care plan Alameda Alliance for Health (AAH) to implement the LifeLong Complex Care Initiative (LCCI). The program embeds an interdisciplinary care team, consisting of a nurse care manager and a peer coach, in a clinical setting (LifeLong’s FQHCs). The nurse care managers are RNs who facilitate the integrated care of program enrollees by providing hands-on nursing services including self-management support, medication reconciliation, health education, medical referrals, home visits, and referring enrollees to the peer coaches. The nurse care managers are embedded into the interdisciplinary team at each site. Peer coaches also have workspace at LifeLong. Peer coaches work with enrollees to develop and implement Independent Living Plans that identify self-directed goals, for example, in such areas as disease self-management, healthy lifestyle modifications, increased independence, learning how to navigate the medical system, and obtaining housing. The peer coaches provide one-on-one coaching sessions with enrollees and provide information about and referrals to services that support community

living (e.g., paid caregivers, housing and food assistance, obtaining medical services and equipment). The peer coaches also lead wellness classes, the “Living Well” workshops, in English and Spanish. A “Living Well” workshop consists of eight to twelve weekly, or twice-weekly, sessions during which participants discuss a variety of topics aimed to educate and empower consumers. The awardee reports that workshop participants have had a positive reaction to the series, so much so that LCCI implemented a follow-up series titled “Continuing to Live Well” for enrollees who had already participated in the “Living Well” workshops.

LifeLong and CIL collaborated to design the program model and to operationalize the intervention. CIL has a depth of experience in offering peer coaching services to consumers with disabilities, though this service has historically been provided outside of the clinical setting. LCCI’s innovative approach to an interdisciplinary care team had not been employed by either organization before the HCIA grant.

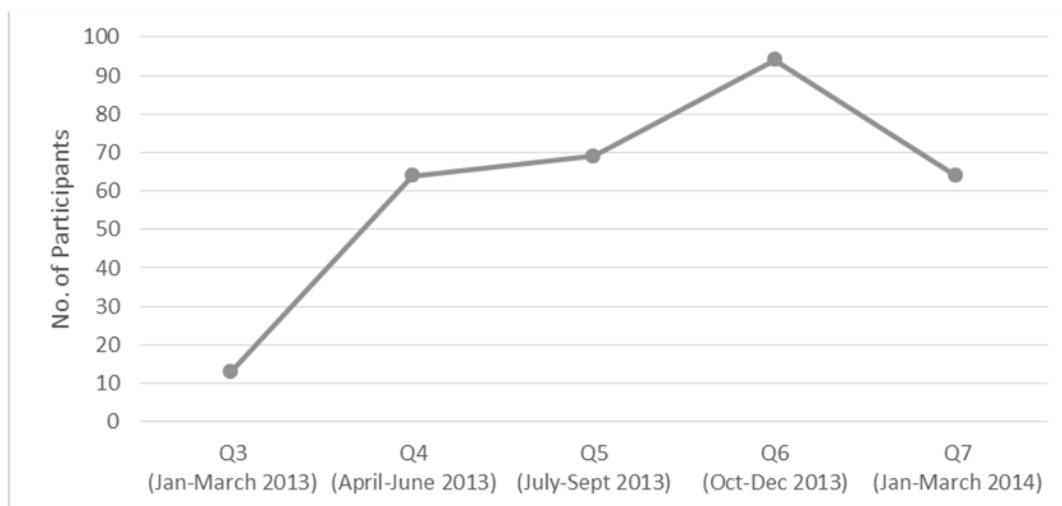
Alameda Alliance, which already had relationships with CIL and LifeLong, joined the partnership to help identify candidates for the program, provide utilization data of enrollees, and fund the peer coaches.

Eligible participants must be 18 years or older, and must be defined as among the 20% highest risk among Alameda’s enrollees identified as Duals (Medicaid-Medicare) or Seniors and Persons with Disabilities (Medicaid only), and cannot already be receiving complex case management services through Alameda. The interdisciplinary care team began providing services to enrollees in February 2013 and currently operates at three clinics, Lifelong Over 60 Health Center, Lifelong West Berkeley, and LifeLong Berkeley Primary Care. Currently, LCCI employs four nurse care managers and two peer coaches who staff all three clinics.

Patients Targeted and Served

Data reported by LCCI notes enrollment figures by quarter (Exhibit LCCI.1), and displays an increase over time through quarter 6, after which there is a decline. At any one point in time, the census of enrollees may include those who have moved into and out of the program in past quarters. As of March 31, 2014, LifeLong’s program has served a total of 168 patients since program launch.

Exhibit LCCI.1: Total Number of LCCI Participants, By HCIA Quarter



Context

One of the tenets of LCCI is the evolving partnership between LifeLong and CIL. As a disability rights advocate, CIL follows and promotes the Independent Living philosophy, which emphasizes empowerment of a consumer to advocate on his or her own behalf. Services at LifeLong typically follow the medical model. Historically, these philosophies have been at odds, with differences even down to the language used to describe those served, e.g., a participant would be considered a patient in the medical model and a consumer in the disability rights model. Despite these differences, CIL and LifeLong share a common history of being community-based organizations with the goal of helping people improve their quality of life. Furthermore, they share a patient base and serve many of the same residents in the neighborhoods in which each work. In addition, since planning began for the Complex Care Initiative, there has been strong buy-in and continued commitment to the project from each organization, despite changes in leadership. The openness, flexibility, dedication, and respect shown by each organization have promoted mutual learning and have strengthened the partnership.

CIL is an international model for the Independent Living movement and philosophy. The organization has extensive experience advocating for rights and fostering self-empowerment for individuals with disabilities. CIL staff, which includes the peer coaches and their manager, is well versed in the Independent Living philosophy and live by it as they are adults with disabilities.

LCCI employs a holistic approach by attempting to address both medical and social issues for its enrollees. The payment scheme for the service providers has an important impact on the implementation, spread, and sustainability of the intervention. The peer coaches are reimbursed by Alameda for billable

encounters with enrollees. A fee-for-service payment structure limits the reach and dose of the peer coaches, who constitute a critical component of the intervention. The role of the peer coach in this intervention expands beyond the constraints of the traditional clinical services for which health plans customarily reimburse, with regard to education, accreditation, and the services provided. In addition to peer coaches' unreimbursed time spent on training, patient recruitment, and team collaboration, the traditional fee-for-service structure limits the services a peer coach may provide. As more payers move towards a capitated payment model for managed care, it may be possible to extend reimbursement to include services offered through LCCI.

Workforce: Staffing and Training

The differences in philosophies and operations between LifeLong and CIL have an impact on the relationship among the nurse care managers, other clinical staff and peer coaches. The nurse care manager and peer coach work as a team and as equal partners. Throughout the implementation of the program, LifeLong and CIL have made an effort to refine the definition of the nurse care managers' and peer coaches' roles. One challenge in navigating this partnership has been reconciling fundamental cultural differences between Lifelong and CIL, as noted above. For example, LifeLong's nurse care managers are accustomed to the medical model and refer to enrollees as "patients," while the peer coaches employed by CIL refer to enrollees as "consumers." Currently, the peer coach is defined as "a service provider with a disability who is located at the clinic and who helps consumers to identify their goals and to create and implement plans for pursuing these goals." It is also important to note the difference between the role of a peer coach and that of a social worker: the peer coach motivates and encourages enrollees to personally manage their social and medical situations through increased independence, rather than finding the solutions and services for the enrollees. In the beginning, there were instances when the clinical staff misunderstood the role of the peer coach. In an effort to reduce the misunderstanding, the peer coaches identified best practices to define and clarify their role to the clinic staff.

Since the start of the program, LCCI has reported difficulties in recruiting, hiring, and retaining peer coaches and nurse care managers. Due to the complex medical and social needs of the target population, a specialized skill set is required of the nurse care managers and peer health coaches. Among the nurse care managers and peer coaches we interviewed, there was a high level of satisfaction.

Implementation Effectiveness

LCCI's flexibility and strong leadership has allowed the program to successfully navigate implementation challenges it has encountered related to recruitment and retention of nurse care managers and peer coaches, allocation of physical space for them, funding for the peer coaches, and identification of eligible participants.

LCCI has decreased its enrollment goals in response to its difficulty identifying eligible participants, the delayed implementation of California's Coordination Care Initiative in Alameda County, and staffing shortages. Over the course of the project's implementation, LCCI has adapted its procedures for identifying eligible participants and now use a variety of sources and techniques to correctly identify individuals from the target population.

Given the innovative basis of the program, LCCI has had issues recruiting nurses and peer coaches that possess the professional and personal characteristics necessary for the program. LCCI has made careful observations over time on these critical qualities, and has continually updated how they recruit for these positions. For example, the most successful LCCI peer coaches have prior experience providing similar services before joining LCCI, and have the confidence to educate and correct their clinician colleagues when their role is misunderstood. Successful nurse care managers have an appreciation for the Independent Living approach, and are respectful of their equal rank to the peer coach. LCCI has had to remain flexible in its hiring of nurses given the particular skillset required to work with complex patients and the low pay range relative to other employers in the area.

Furthermore, LCCI has recognized potential obstacles to integrating the interdisciplinary care team into the existing workflows of the FQHCs. They have implemented processes for educating clinic staff on the new care model and have developed best practices for how best to communicate the roles of the nurse care managers and peer coaches. Explaining the role of the peer coach has proven to be particularly challenging, but LCCI has developed best practices on how to do this effectively (e.g. explaining the role of the peer coach in terms that are familiar with clinic staff, like "motivational interviewing"). LCCI has found that integrating the nurse care managers in the FQHCs' specific clinics or pods fosters relationships and facilitates communication between the nurse care managers and other clinic staff, thereby increasing referrals and improving the coordination of care for patients.

LifeLong and CIL turned to Alameda to provide funds for the peer coaches. Initially, LifeLong and CIL expected Alameda to provide the funds in the form of a grant. After negotiations, it was agreed that Alameda reimburse for billable visits between the peer coach and patient after a prior authorization is

submitted by CIL and approved by Alameda. This payment structure is limiting because it does not fund time spent on training, patient recruitment, team collaboration, incomplete appointments, or innovative services that might not currently be authorized as billable. In addition, peer coaches required extra training about this funding approach and the proper procedures for submitting prior authorization requests and billing for services to Alameda.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Secondary data analysis based on claims and electronic health records is not yet complete for the Complex Care Initiative. For this reason, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

Similarities between the respective histories and missions of LifeLong and CIL facilitated the initiation of the partnership for LCCI. The strong leadership at LifeLong and CIL, their ties to the community, their commitment to the program, and the feedback processes they have developed has created an environment in which they have been able to respond quickly and flexibly to challenges. One of LCCI's greatest strengths lies in the expertise and commitment of its current nurse care managers and peer coaches, as well as the commitment from Lifelong and CIL leadership.

It was evident from the consumer focus groups that there is a very high demand in LifeLong's FQHCs for the services provided by the nurse care managers and peer coaches. The nurse care managers serve an important role for patients with complex conditions, and the patients noted that the nurse care managers helped alleviate issues such as a lack of timely access to care and an opportunity for brief one-on-one time with clinicians. Further, those consumers who had interactions with the peer coaches through the coaching sessions or "Living Well" workshops felt empowered and reported an increased sense of control and self-efficacy in advocacy for self and self-management.

Though Alameda reimburses for billable services provided by peer coaches, the fee-for-service structure is not ideal for this model. The list of services that are reimbursable continues to be limited by the traditional definition of care coordination, limiting the potential for peer coaches to provide more

extensive and innovative services to consumers, and in turn potentially limiting the sustainability of this intervention beyond the HCIA funding period.

Data Sources and Analyses

Sources for this report include program documents, awardee self-reported data uploaded to the Lewin website, telephone interviews with the awardee, and a site visit.

Site Visit

NORC conducted a site visit to LCCI in May 2014. Site visit activities included interviews with key project staff, including two nurse care managers, two peer coaches and a Living Well facilitator, and current and former management from LifeLong, CIL, and Alameda. NORC also conducted two focus groups with consumers of the program (13 participants), and an observation of an enrollee's clinic visit that involved both a nurse care manager and a peer coach.

Survey

LifeLong does not field a *workforce trainee* survey. Given the relatively small number of trainees, NORC is using the site visit to gather primary data on the workforce experience.

To measure *consumer experience*, Lifelong captures a set of clinical indicators as updates to initial assessment data, every 6 months. At baseline, the awardee collects a set of health literacy questions from CAHPS and began administering an annual follow-up to these questions for all currently enrolled patients during 2014. In addition, LifeLong is considering modifying the Patient Activation Measure (PAM) to better capture the experiences of its target population. NORC is also exploring the prospect of coordinating with LifeLong on a survey instrument, with NORC to conduct the data analysis.

See Appendix Exhibit B for an update on survey development.

Secondary Data

NORC executed a Business Associate's Agreement with LifeLong Medical Care on April 9, 2014 and with LifeLong's partner Alameda Alliance on April 24, 2014. The data were not received in time for analyses included in this chapter. For subsequent reports, NORC will present results on the program's impact on measures of health, quality of care, utilization and costs for the Medicaid and dual-eligible populations served by LifeLong's program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by LifeLong Medical Care, 4/30/14.

HCIA Quarterly Progress Report for LifeLong Medical Care, for Reporting Quarter End Date 3/31/2014. Submitted by LifeLong Medical Care, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. LifeLong Medical Care, January 14, 2014.

NORC. Interview (Telephone), Survey. LifeLong Medical Care, April 3, 2014.

NORC. Site Visit. LifeLong Medical Care, May 29 and 30, 2014

North Carolina Community Care Networks

This chapter presents NORC’s evaluation of Community Care of North Carolina’s Child Health Accountable Care Collaborative (CHACC),¹⁴ from program launch through August 2014. CHACC aims to improve health outcomes, patient and caregiver experiences, and cost-effectiveness of care delivered to children enrolled in Medicaid, or the Children’s Health Insurance Program (CHIP), who have complex, chronic illnesses. The intervention uses Community Care’s existing statewide network of not-for-profit care coordination organizations, academic medical centers, and tertiary medical centers to integrate pediatric specialty care into primary care, through care coordination, promulgation of clinical practice guidelines, and the engagement of family caregivers.

We provide initial observations about the program based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, and a series of telephone interviews with the awardee; a site visit has been scheduled for October 22 and 23, 2014. While this chapter presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection, including the site visit, nor formally analyzed the qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Community Based Organizations
Funding Amount:	\$9,343,670
Launch Date:	1/15/2013
States Where Located:	North Carolina

The Community Care of North Carolina’s (CCNC) Child Health Accountable Care Collaborative (CHACC) is a network of 14 local medical homes across 23 communities around the State for children enrolled in Medicaid and CHIP “who have a complex medical condition that requires services from multiple providers.” Each home is hosted by one of North Carolina’s seven academic medical centers or five tertiary medical centers, under the aegis of a non-profit Community Care Organization, and features a Physician Champion as well as two trained dedicated roles for the intervention –an RN/MSW Specialty Care Manager (SCM) to coordinate care between pediatric subspecialists and primary care providers, and

¹⁴ Please note that NORC has changed the name used in this report to refer to the awardee, from the name used in previous reports to CMMI (North Carolina Community Care Network). Community Care of North Carolina is the name that the organization uses. Please see www.communitycarenc.org/emerging-initiatives/child-health-accountable-care-collaborative.

a Patient Coordinator to facilitate communication and education with parent caregivers. The intervention builds on an existing infrastructure of patient-centered medical homes and case management created by CCNC and its partners.

CHACC's goal is to bridge gaps between primary and specialty care, and between outpatient and inpatient experiences, so that care is delivered in an integrated, coordinated fashion rather than episodically. To achieve this goal, CHACC facilitates changes in how specialty referrals are made, develops and disseminates clinical practice guidelines for selected conditions, and provides support and education to families. CHACC is designed to be flexible, facilitating replication across the State while enabling each network to address the conditions most relevant or pressing to their providers and patients.

The CHACC brings new professional roles, health IT, and referral practices to the existing network of patient-centered medical homes and case management at five Academic Medical Centers (Carolinas Medical Center, Duke University, Vidant Medical Center, University of North Carolina, and Wake Forest Baptist Medical Center) and seven tertiary Medical Centers (Cape Fear Valley Medical Center, CMC Northeast, Mission Hospital, Moses Cone, New Hanover Regional Medical Center, Presbyterian Medical Center, and Wake Med).

The RN/MSW Specialty Care Manager and the Patient Coordinator manage care between the pediatric subspecialists and an enrolled child's primary care physicians, and work with the child's caregiver to improve access to services and community resources, and to improve the caregiver's capability for managing their child's health and health care. A Physician Champion serves as a liaison on behalf of each CHACC team, which is embedded at each participating Academic Medical Center and Tertiary Medical Center. Referrals to CHACC are made by providers and also through use of a claims-based clinical risk algorithm to identify prospective enrollees.

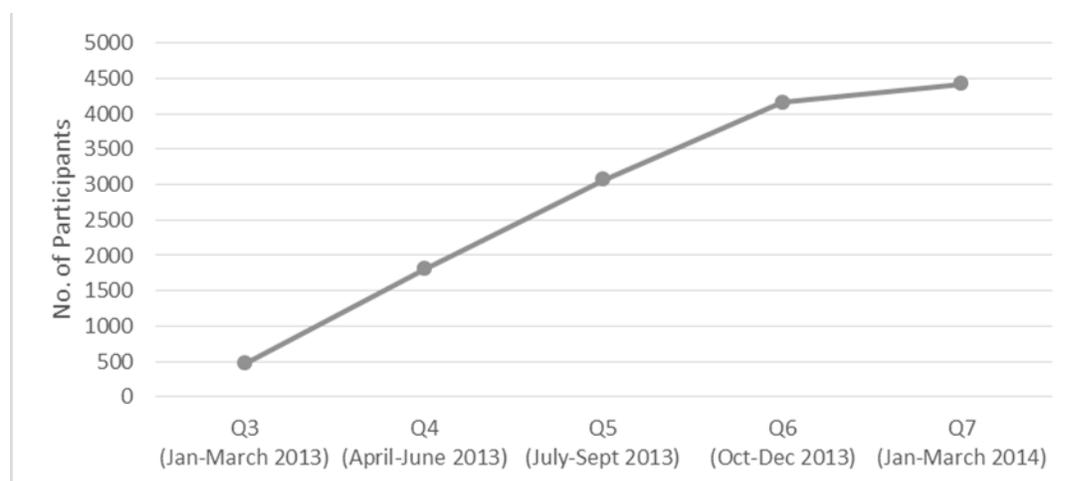
CHACC uses multiple health IT systems to facilitate collaboration and communication, including a Medical Co-Management System (MCMS), a web-based system that provides a secure, HIPAA compliant platform for primary care physicians and pediatric subspecialists to share a Medical Co-Management Plan; a Case Management Information System (CMIS) accessible to care managers; and the CCNC Provider Portal. A Patient Treatment Plan (PTP) is available to physicians and to patients and their caregivers.

CHACC is partnering with pediatricians from across the State, as well as clinicians from the Departments of Pediatrics at Carolinas Health Care, Duke University, East Carolina University, University of North Carolina, and Wake Forest University, to develop clinical guidelines on selected complex health

conditions. The guidelines are intended for primary care providers and offer direction for referrals to subspecialists, care transitions, and co-management best practices. In December 2012, CHACC released the first guideline for treating children with gastrointestinal conditions; CHACC is completing a second guideline for management of headaches. Future guidelines are planned for constipation, gastro-esophageal reflux, and functional abdominal pain.

CHACC’s initial target for enrollment has been all children in North Carolina from birth through age 20, enrolled in Medicaid or the Children’s Health Insurance Program (CHIP), who have a complex chronic condition requiring services from multiple medical providers. Self-reported data provided by CHACC shows steady enrollment by quarter (Exhibit CCNC.1). As of March 31, 2014, CHACC has served a cumulative total of 8,069 children.

Exhibit CCNC.1: Total Number of CHACC Participants, By HCIA Quarter



Context

CCNC is a public-private partnership between the State of North Carolina and 14 non-profit regional networks, comprised of hospitals, nurses, physicians, pharmacists, health departments, social service agencies and other community organizations. It offers an organizational home for the CHACC that has widespread recognition and support among providers, a historically close relationship with the State’s Medicaid program, and an important role in the transformation of care delivery for North Carolina’s Medicaid population over the last 10 to 15 years. CHACC is able to leverage existing CCNC relationships with network leadership, care coordination programs, and community partnerships and holds bi-monthly meetings to provide information and solicit feedback about CHACC. The North Carolina

Pediatric Society is another important supporter of CHACC, offering a venue for outreach and recruitment of providers and local leadership.

Given the close relationship between CCNC and North Carolina's Medicaid program, it is likely that ongoing changes in management, vendors, and claims processing will have an impact on CHACC's ability to target the highest-risk patients, conduct self-monitoring using claims, and demonstrate the impact of CHACC on measures of utilization and cost.

Workforce: Staffing and Training

CHACC staff includes a Physician Champion as well as two trained dedicated staff, an RN/MSW Specialty Care Manager and a Patient Coordinator. The Physician Champion at each of the networks leads a local CHACC, convening a local steering committee that includes inpatient, hospitalists and sub-specialist physicians, CHACC care management staff, local network leaders and staff, and working with CHACC staff on all aspects of the intervention. At each site (Academic Medical Center or Tertiary Medical Center), an RN/MSW trained as a Specialty Care Manager coordinates care between the pediatric subspecialist and the primary care physician; and a non-clinical Patient Coordinator provides support to the parents and offers referrals to community resources and services.

CHACC reports that recruitment and training for the dedicated staff positions has been a challenge, especially for the Patient Coordinator positions, and initial hiring requirements that targeted military veterans have been revamped to recruit more broadly. While CCNC offers a combination of didactic orientation to CHACC and shadowing of experienced staff for training new Specialty Care Managers and Patient Coordinators, the qualifications for the Patient Coordinator position are tied to completion of a 50-hour, 12-week online case management assistant course offered at a community college, and both hiring and training are done locally by each site.

Implementation Effectiveness

CHACC has identified a number of issues related to implementation. NORC has explored these issues through review of program documents, reports, and telephone interviews. Our site visit will enable our team to take a first-hand look at implementation in the field, for example, how Patient Coordinators conduct outreach and monitor the experiences of patients and their caregivers, and to collect primary data that will inform NORC's assessment of the implementation overall. Preliminary observations based on information provided by CHACC relate to challenges involved with reliance on Medicaid claims data for patient recruitment and project monitoring and evaluation; and with the use of health information technology portals to facilitate co-management of specialized health services.

Initially, CHACC planned to identify prospective patients using Medicaid claims data. A change in Medicaid vendor resulted in the loss of access to reliable, timely claims to use in a clinical risk algorithm. In addition, diversity in the patient mix recruited from site to site was expected to make demonstration of consistent results more difficult. CHACC leadership responded in the spring of 2014 by revising its approach to recruitment, instituting a multi-level strategy that taps existing referral networks (from neonatal and pediatric ICUs, as well as other providers, case managers, and agencies) for patients who meet CHACC inclusion criteria, as well as a revised set of screens (clinical risk groups) or exclusion criteria applied to two sets of Medicaid claims –one a retrospective list of inpatient admissions and the other a running list of hospital emergency department admissions.

The health IT portals are a critical component of CHACC. The portals are intended to improve communication between primary care providers and specialists, and between providers and patients and their caregivers. CHACC was able to add an intervention specific component to the existing Case Management Information System and created the Medical Co-Management System as a platform through which providers can access and edit both the Patient Treatment Plan and the Medical Co-Management Plan. Interconnectivity between CCNC’s health IT portals and those of its local partners remains incomplete. For example, each Academic Medical Center has its own electronic health records (EHRs) which are accessible to affiliated physicians but on a read-only basis for CHACC staff, limiting their ability to update information. For these instances, CHACC Specialty Care Managers facilitate communication between providers by faxing updated Patient Treatment Plans.

Program Effectiveness

NORC’s evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness will be gathered during the site visit and through review of survey data. As of this report, NORC has not completed its site visit nor are survey data available, and secondary data analysis based on claims and EHRs has not begun; see Technical Appendices B and C for status updates on NORC’s primary and secondary data collection and analyses. For these reasons, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

Within North Carolina, sustainability is likely to be closely tied to Medicaid policies and procedures, for example, the relative success of CHACC in identifying patients most likely to benefit from participation in the intervention and the availability of Medicaid reimbursement for CHACC's care coordination activities (e.g., telephone consultations between primary care providers and specialists, patient education delivered by Patient Coordinators) and incentives for provider use of clinical guidelines. Demonstrating the positive impact on core utilization and cost measures will be an important part of sustainability, which in turn will rely on access to Medicaid claims data. Prospects for sustaining CHACC are enhanced by the degree to which CCNC has leveraged existing health IT relationships and allowed for local adaptation of CHACC specifications and training requirements to local patient needs and staff resources.

Replication of the statewide CHACC model would depend on a broad infrastructure such as the organizational and operating environment that CCNC provides for CHACC. It may be possible to create a program similar to CHACC in a State that is developing a similar patient-centered medical home network for its pediatric Medicaid population, with systemic financial and political support.

Data Sources and Analyses

Sources for this report include program documents, including materials available on CHACC's website,¹⁵ awardee data reported to CMMI, and telephone interviews with the awardee.

NORC is planning a two-day site visit to CHACC for October 22 and 23, 2014, and is developing the itinerary for the site visit in consultation with the awardee. Once the site visit is complete, NORC will code and analyze the full set of observational notes and will link these thematic findings to quantitative data when available. Findings will be presented in subsequent NORC reports to CMMI.

Survey

CCNC is not fielding a workforce trainee survey for CHACC. NORC is exploring the possibility of developing a stand-alone survey, in collaboration with CCNC; mode is likely to be online or phone.

At present, CCNC measures caregiver experience through two short survey instruments, including

- Parent Survey, on communication, coordination of care, satisfaction with services, impacts of child's illness on family and caregiver stress.

¹⁵ <https://www.communitycarenc.org/emerging-initiatives/child-health-accountable-care-collaborative/>

- “Time and attendance” survey reporting missed days of school and work due to the child’s illness. A Patient Coordinator administers this survey every three months by phone, either in English or Spanish.

An independent evaluation partner at the University of North Carolina performs data analysis and prepares a summary report. In addition, CCNC also hires an outside organization to conduct a chart audit on 20,000 Medicaid charts across the State, which includes a sample of CHACC patients.

NORC is exploring the possibility of developing a coordinated survey based on CCNC’s ongoing caregiver surveys.

Secondary Data

NORC executed a Business Associate’s Agreement with the Community Care Networks of North Carolina on May 30, 2014. Data were not received in time to be analyzed and included in this chapter. For subsequent reports, NORC will present results on the program’s impact on measures of health, quality of care, utilization and costs for the Medicaid/CHIP population served by NCCCN’s program. The unavailability at this time of claims data for North Carolina’s Medicaid program for a period that partially coincides with the program’s operational period poses a serious threat to the ability to evaluate this awardee.

References

Program Documents

HCIA Narrative Report, for Reporting Quarter End Date 3/31/2014. Submitted by NCCN, 4/30/2014.

HCIA Quarterly Report for North Carolina Community Care Networks (NCCCN), for Reporting Quarter End Date 3/31/2014. Submitted by NCCN, 4/30/14.

Interviews

NORC. Interview (Telephone), Awardee Data Sharing, 4th call. NCCN, June 12, 2014.

NORC. Interview (Telephone), Awardee Data Sharing, 3rd call. NCCN, March 21, 2014.

NORC. Interview (Telephone), Awardee Data Sharing, 2nd call. NCCN, February 17, 2014.

NORC. Interview (Telephone), Awardee Data Sharing. NCCN, January 30, 2014.

NORC. Interview (Telephone), Site Visit Planning. NCCN, June 12, 2014.

NORC. Interview (Telephone), Survey. NCCN, March 26, 2014.

Northland Healthcare Alliance

This chapter presents NORC’s evaluation of Northland Healthcare Alliance’s Care Coordination for Seniors program from the project’s launch in January 2013 through August 2014. Northland’s program uses an adapted Program of All-Inclusive Care for the Elderly (PACE) model to coordinate care for seniors living in rural North Dakota, allowing this population to stay in their homes and still receive the services they need.

We provide preliminary observations about the Care Coordination for Seniors program based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, and a series of telephone interviews with the awardee; a site visit is planned for October 2014. While this chapter presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection, nor formally analyzed the qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to present more definitive findings and results in subsequent reports to CMMI.

Overview of Awardee

CMMI Category for Awardee:	Integrated Health System
Funding Amount:	\$2,726,216
Launch Date:	1/31/2013
States Where Located:	North Dakota

Northland Healthcare Alliance is implementing an adaptation of the PACE model in rural regions of North Dakota. The PACE model was developed in 1971 in San Francisco as a method to care for the elderly population at home, avoiding nursing home placement. The PACE program coordinates and provides all requisite preventive, primary, acute, and long-term care services to enable its participants to continue living in the community. The Northland Care Coordination for Seniors (NCCS) program partners with existing long-term care and assisted living facilities to expand the reach of this coordination of services to rural populations in the hope of lowering costs, improving health care quality, and improving or maintaining the health of elderly participants living in the community. Currently, NCCS sites are located in Bismarck/Mandan, Bowman, Ellendale, Dickinson, Hazen/Beulah/Center, and Garrison. Northland also intends to expand the program to Linton and Edgeley to target a larger population.

Care coordination is a key component of this intervention, with a variety of services provided through the NCCS program. Rural NCCS locations use the Bismarck site and partner with existing long-term care and assisted living facilities to mimic the PACE model and introduce new services to these areas, including primary and preventive care, in-home care, adult day center, referral services, dietary services, and transportation. At the core of the program model is the interdisciplinary team (IDT), a group of physicians, nurse practitioners, nurses, social workers, therapists, van drivers, aides, and other staff. The IDT provides ongoing support to participants, rather than the limited, episodic care that is typically available in rural regions. This team develops and continually assesses a care plan that coordinates necessary services for each participant. To ensure the coordination of services for each participant, a trained community health worker serves as a Community Care Coordinator (CCC) in each location. The CCC serves on the IDT, conducts monthly home visits, provides patient education, and coordinates local services. While the CCCs were originally responsible for program marketing and participant recruitment, this task has since been transferred to a new Marketing Coordinator to alleviate some of the time constraints on CCCs.

IT systems are another essential aspect of the NCCS program as vast landscapes and dispersed populations inhibit regularly scheduled in-person IDT meetings. To help with team and patient communication, rural sites will use TeleCare Network, which provides multi-site teleconferencing capabilities to IDT members, allowing them to discuss and deliver services to the participants remotely. This process is still in the beginning stages across all sites. In addition, PACECare Online (PCO) is implemented at each site to provide a real-time repository for the locations using electronic health records (EHRs). PCO is another IT system implemented in the NCCS program that enables sharing of all medical information between every provider and staff member to enhance delivery of care to participants. The CCCs receive training manuals and user guides in addition to face-to-face training to become acclimated to the PCO system and to increase workflow efficiency and consistency.

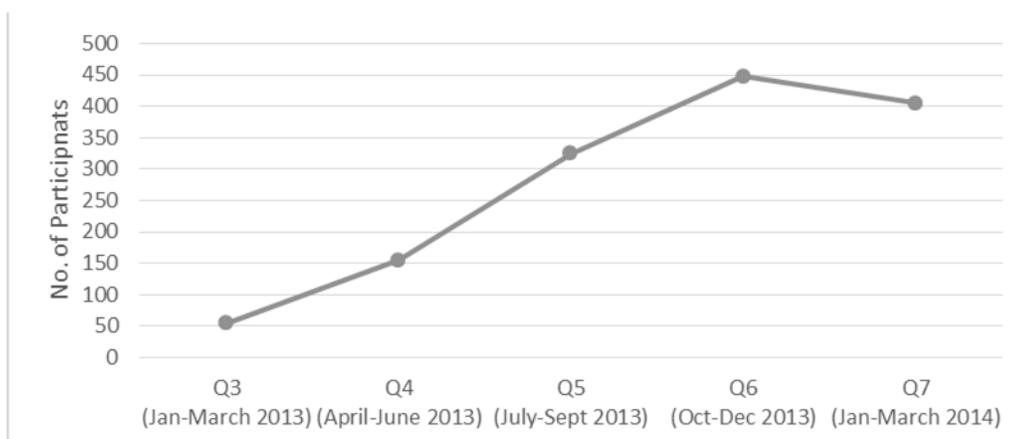
The coordination of care and introduction of an extensive list of services to seniors living in rural communities is a new concept that piqued interest when presented at the National PACE Association PACE Growth & Innovations Summit in March 2013. Northland Healthcare Alliance has been involved in the expansion and development of networks and health care collaboratives for years. The awardee began work with the PACE model in 2004 and maintains that program. The NCCS intervention is central to the work of the awardee.

Northland targets adults aged 55 years and older who are enrolled in Medicare or Medicaid, or who are dually eligible. In addition, participants must meet at least one of the following criteria: have at least one

chronic condition (e.g., diabetes, chronic obstructive pulmonary disease, congestive heart failure, coronary artery disease, hypertension, depression), at least one non-elective hospitalization in the past year, more than one fall within the past three months, or a need for assistance with one or more activities of daily living.

Self-reported data provided by Northland indicates enrollment numbers by quarter (Exhibit NHA.1), for both direct participants (those whose services are funded by the HCIA grant) and those considered to be indirect participants (receiving services delivered by staff trained under the HCIA grant, while the services are not funded by the grant). These data indicate a steady increase over time through December 2013, followed by a slight decline. As of March 31, 2014, the NCCS program has served a cumulative count of 342 direct participants.

Exhibit NHA.1: Total Number of NCCS Participants, By HCIA Quarter



Context

North Dakota has a rapidly aging population. With a widely dispersed elderly population and limited options for care delivery in small frontier communities, it is difficult for many seniors to continue living at home. As a result, care coordination provided through the NCCS program is essential. The Northland Healthcare Alliance community has deep experience in care coordination through its involvement in the development of the existing PACE model in Bismarck, ND, which is a great resource for the development and implementation of the NCCS program. NCCS’s use of telemedicine and established partnerships with existing long-term care and assisted living sites has decreased their overhead costs, including those associated with occupying a physical space and purchasing equipment. Additionally, two of the NCCS communities, Bismarck and Dickinson, have PACE sites available for use by the NCCS program. The PACE sites and long-term care and assisted living partner sites in the rural areas of North Dakota provide

necessary resources to the program. Using these existing sites and resources makes the NCCS program more feasible and, as of Quarter 7, Northland Healthcare Alliance reported spending below the projected expenditure amount approved by CMS.

Despite the sufficient financial and training resources, hiring additional staff, particularly in rural communities, remains one of the biggest challenges of the program.

While the oil boom in North Dakota may suggest that the State is flourishing economically, it has actually produced significant stress on the rural infrastructure, including health care institutions. This has directly impacted the NCCS program and contributes to hiring challenges in these rural regions.

Workforce: Staffing and Training

The workforce of the NCCS program includes a project director, project manager, data manager, an administrative assistant, a marketing coordinator, and 6 IDTs (one at each site). The composition of the IDT may vary from site to site with the exception of the CCC role present in each. Other members of the team include clinical professionals, such as physicians, nurse practitioners, nurses, and social workers, and nonclinical professionals, such as a Home & Community Based Services employee and other staff. This diversity enhances care delivery.

Several trainings orient new CCCs to the NCCS program, all of which differ in formality, duration and modality. First, they receive a two-day, hands-on Community Care Coordinator Training that incorporates classroom, discussion, and on-site setting to cover all of the policies and procedures of the intervention. Second, CCCs must do a two-hour on-site PACECare Online training to orient them to the EHR repository system used across the intervention. Third, new CCCs observe PACE IDT meetings. Since the workflow of NCCS is similar to that of PACE, the opportunity to observe these IDT meetings helps the new CCCs understand the more technical processes of the program.

Finally, new CCCs also receive intensive training in how to help participants and their families take an active role in the decision-making process. The Kissito Collaborative Patient Care Pathway (CP2): Chronic Disease Self-Management Program teaches motivational interviewing as a way to educate patients about their condition and increase involvement in their own health planning and management. This training assists the CCC in asking pertinent questions in an appropriate manner to properly gauge the participants' comprehension of their chronic diseases. Information regarding the participant's understanding is then communicated to the primary care provider and to the IDT to ensure the availability of appropriate resources for the participant. Some CCCs also attend the Stepping On training, which provides senior citizens with information about how to prevent falls. The CCCs that attend this training

are then able to disseminate the information to the seniors in their community. The CP2 and Stepping On trainings involve 63 hours of on-site training and 24 hours of classroom training, respectively.

Human capital is an integral part of the NCCS program, and there seems to be a significant focus on staff satisfaction and retention. Not only does Northland regularly evaluate IDT satisfaction levels using a Team STEPPS Teamwork Perception Questionnaire (T-TPQ) and a Coalition Effectiveness Inventory (CEI) survey, they also report all retention rates for staff that are partially or fully funded by the HCIA award or funded by in-kind donations. For Quarter 7 Northland reported a 90 percent staff retention rate.

As the NCCS program grows, staffing adjusts to fill current needs. For example, in Garrison the enrollment numbers were higher than anticipated, making it necessary to add a second CCC to successfully manage and continue the high participant recruitment. The program as a whole also created two new positions to alleviate some of the site-specific CCCs' job responsibilities: a program-wide administrative assistant to help improve and organize processes for all NCCS staff, and a marketing coordinator to offer guidance to any site that does not meet their enrollment goals, including tracking efforts and brainstorming ideas for media campaigns. The creation of these two positions relieves the CCCs from these responsibilities and allows them to focus more on the participants in their areas.

Implementation Effectiveness

The NCCS program, an adapted PACE model, has been implemented in six sites, serving a total of 342 participants in 14 North Dakota counties. Even though the intervention was based on an existing model, there have still been issues with implementation. Delays in the approval of the operational metrics postponed the development of the data collection forms, and changes in computer software program meant additional work and time gathering manuals and documentation of data.

Each site hosts an IDT to ensure consistent activities are being implemented in each site. Full PACE sites are available at the Bismarck and Dickinson locations and offer a comprehensive list of services to the participants as well, with development in progress for an additional PACE site in Garrison. The use of telemedicine, EHRs, and partnerships with long-term care and assisted living sites increases the availability of different services for participants in the rural sites. Although services are offered consistently across the six NCCS sites, the program's flexibility allows participants to receive individualized care and services. The IDT evaluates a participant's needs during the intake period and develops a custom care plan, incorporating the wishes of the participant and his/her family. Telehealth is an essential component to the NCCS program. The rural locations served by this program make it nearly impossible for all IDT members to meet in person on a regular basis. TeleCare Network allows IDT

members to stay engaged and provide continued coordination of care. This network also affords patients the opportunity to have clinical consultations without having to travel to the appointment.

For example, a participant is able to receive a consult from a specialist who is based in an urban area without traveling a great distance from his or her rural community. Another feature of the NCCS program that helps contribute to the effectiveness of the implementation is the partnership with existing long-term care and assisted living sites. This partnership is another method by which this program makes the variety of services available to the seniors living in the rural counties of North Dakota, services that were not previously accessible to this population without traveling potentially great distances into an urban setting. NCCS also helps participants receive any necessary assistive equipment, such as a bed transfer rail or a reacher device.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness will be gathered during the site visit and through review of survey data. As of this report, NORC has not completed its site visit nor its survey-related activities, and secondary data analysis based on claims and electronic health records is not yet complete; see Appendix B for a status update on NORC's primary and secondary data collection and analyses. For these reasons, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

The awardee has shared survey findings that measure program participant satisfaction. A Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey is distributed to NCCS participants six months following enrollment. The most recently distributed CAHPS surveys from Quarter 7 yielded a 68 percent response rate. A Care Participant satisfaction survey is available to participants enrolled in the program for longer than 180 days; however, no results were reported.

As the NCCS program was developed to keep seniors in the community and to live in their home healthier, safer and more independently, it is no surprise that program components address and measure patient safety in the community. The Stepping On educational program offered by some CCCs (in Dickinson and Garrison) is specifically designed to prevent falls of seniors living in the community.

Sustainability, Replicability, and Scalability

The NCCS program combines some components of PACE with innovative approaches that help reach and improve care coordination of seniors living in rural areas. Relying on a main component of the original PACE model, NCCS uses an IDT to help provide a holistic care plan for each participant. The continuous communication between the IDT members, providers, and the participant assists in identifying the proper services to improve or maintain the health of program participants. However, they also use new approaches to reach the widely dispersed target population. Using technology to bridge the distance in rural areas and forging partnerships with existing long-term care and assisted living sites has enhanced Northland's ability to successfully adapt the PACE model for the rural setting.

Northland is currently considering issues of sustainability. Jim Przybilla, CEO of the Prime West Health in Minnesota, will be working with NCCS to facilitate a sustainability business planning meeting. One challenge to sustainability will be hiring additional staff. As previously discussed, recruiting IDT members is very difficult in rural North Dakota. This also poses a barrier to increasing the scale of the NCCS program. With sufficient funding and resources, this program has the potential to be scaled up to additional rural settings. As mentioned above, two locations have been selected for program expansion.

The NCCS program encountered a number of delays early on in the funding period that prevented implementation as quickly as anticipated. The program now appears to be running smoothly, according to a number of anecdotes of successful coordination and delivery of services to residents in rural areas, increasing enrollment numbers, and plans for expansion to new sites.

Data Sources and Analyses

Sources for this report include program documents, awardee data reported to CMMI, and telephone interviews with the awardee.

Site Visit

NORC conducted a site visit to Northland Healthcare Alliance on October 2 and 3, 2014. The site visit itinerary was developed in consultation with Northland. NORC will code and analyze the full set of observational notes and will link these thematic findings to quantitative data when available. Findings will be presented in subsequent NORC reports to CMMI.

Survey

Northland Healthcare Alliance does not field a *workforce trainee survey*, although the awardee does administer a TeamSTEPPS Teamwork Perception questionnaire to IDT members, a Meeting

Effectiveness Inventory Tool to CCCs and steering committee members, and a Coalition Effectiveness Inventory Tool to steering committee members. All surveys are administered every six months. Given the relatively small number of trainees for this intervention, NORC will plan to use site visit group discussions, interviews, and observations to collect primary data on the workforce, in lieu of a survey.

To measure *consumer and caregiver experience*, the Northland Healthcare Alliance administers a modified version of the Home Health CAHPS, surveying enrollees every six months (rolling basis). Care coordinators bring the survey to participants in person and ask that they mail in the completed survey. NORC is exploring the possibility of fielding a stand-alone survey that expands on the existing set of questions, with Northland to administer on a rolling basis as they do at present. NORC will conduct the data analysis independently.

Secondary Data

NORC executed a Business Associate's Agreement with Northland Healthcare Alliance on April 15, 2014. Data were not received in time for analyses to be included in this chapter.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by NHA, 4/30/14.

HCIA Quarterly Report for Northland Healthcare Alliance, for Reporting Quarter End Date 3/31/2014. Submitted by NHA, 4/30/14.

Interviews

NORC. Interview (Telephone), Awardee Data Sharing. NHA, February 7, 2014.

NORC. Interview (Telephone), Site Visit Planning. NHA, June 18, 2014.

NORC. Interview (Telephone), Site Visit Planning. NHA, August 5, 2014.

NORC. Interview (Telephone), Survey. NHA, April 15, 2014.

NORC. Site Visit. NHA, October 2-3, 2014.

Palliative Care Consultants of Santa Barbara

This chapter presents NORC’s evaluation of the Palliative Care Consultants of Santa Barbara’s Doctors Assisting Seniors at Home (DASH) program from project launch through August 2014. DASH offers an alternative to seeking urgent care at a hospital emergency department for patients ages 60 and older in the Santa Barbara, CA area. DASH uses home-based triage and care coordination by experienced registered nurses and follow-up by physicians with experience in primary care, urgent care, and palliative medicine. This rapid response approach to a patient’s call for assistance can sidestep the need to call 911. Patients enroll in DASH in advance of calling for a home visit and as part of enrollment, participate in advanced care planning, receive referrals for needed community benefits and social supports, and confirm a connection with a primary care provider.

We provide preliminary observations about DASH based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, a series of telephone interview with the awardee, and a site visit that NORC conducted in May 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Physician
Funding Amount:	\$4,254,615
Launch Date:	12/13/2012
States Where Located:	California

The Palliative Care Consultants of Santa Barbara’s Doctors Assisting Seniors at Home (DASH) program offers a two-part episodic coordination of care for Medicare and Medicaid patients who are at least 60 years of age and considered frail, want to remain in their home, and live within a 12 mile radius of Santa Barbara. The goals of DASH are to improve care and improve access to care for frail elders, by reducing hospital re-admissions and ED visits, especially those prompted by a call to 911 for a non-urgent condition.

This intervention was motivated by concern for the growing gap between home health and emergency services in Santa Barbara, particularly as related to State licensing requirements for senior housing and

independent living communities. Santa Barbara and its surrounding communities have one local hospital and two local hospice agencies. Creators of the DASH program observed that a substantial number of geriatric patients who needed minor medical services and preferred to receive care in their homes, often turned to calling 911 for transport to the hospital emergency department (ED) for treatment, a time-consuming, inconvenient, and costly experience. The DASH program instead brings care to enrolled consumers in their homes.

DASH addresses several access problems at once. DASH enrollees reside in individual family homes as well as in independent living facilities. Not only do consumers appreciate having the option of being treated in their home, many also have transportation issues that prevent them from reaching a doctor's office or hospital quickly. These beneficiaries can also avoid a 911 call or ambulance ride.

DASH begins with an enrollment encounter that engages patients in advanced care planning, strengthens connections with primary care, and makes referrals to social and related services. The enrollment process also serves as the first touch of the intervention and asks beneficiaries to create care goals and encourages enrollees to sign a Physicians Orders for Life Sustaining Treatment (POLST) statement. The enrollment encounter and the discussion about POLST are often the first time enrollees consider their future health needs and end of life care preferences. The integration of advanced care planning and referrals for social services with the enrollment process make DASH more than an emergency service: it is a resource for patients regarding their health needs and preferences later in life. Post-enrollment, patients may contact DASH for assistance, as an alternative to calling 911 or seeking care at the local hospital emergency department. A trained rapid response nurse visits the patient's home within one hour of the call, with a physician follow-up home visit within six hours to triage and treat the patient if needed, as well as communicate with the primary care provider.

Upon arrival at the home, DASH nurses and physicians are prepared to treat minor episodic health conditions. Rapid response teams are equipped with basic tools to treat conditions such as UTIs, and minor cuts and infections. DASH professionals can also help determine if an emergency room visit is necessary. It is communicated to and understood by patients that DASH treat episodic conditions only. Any necessary follow-up or continued medications beyond a couple of days must be done through the enrollee's primary care physician and not the visiting DASH nurse or doctor.

There are limits to the service; DASH operates between 7 AM and 7 PM, seven days a week. Although DASH physicians are often trained in primary care, they do not serve as the primary care physician to their enrollees. Instead, DASH records and communicates any patient contacts with the patient's primary

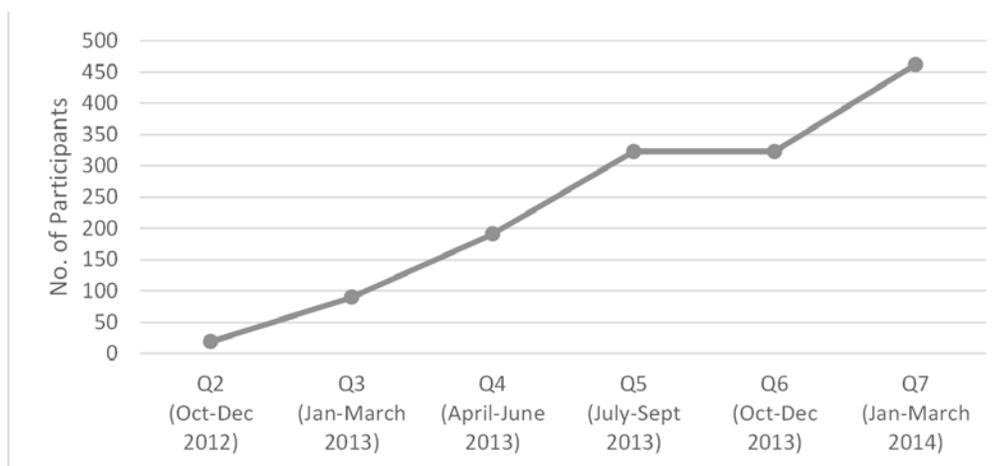
care physician. While on site, nurses record the encounter in the DASH electronic record system using a cell phone and a laptop computer with wireless internet connectivity. Upon returning to the DASH office, nurses summarize the event and forward any relevant information to the patient’s primary care provider, which is included in the patient record at DASH.

Residents of independent living facilities particularly benefit from DASH. California regulations prohibit independent living staff from assisting residents in any medical event, even for a minor mishap such as a short fall or skin tear. Instead, staff must call local emergency services, which residents often find disruptive and unnecessary. DASH offers residents of these facilities the care they need without disturbing other residents with sirens and emergency vehicles and personnel.

As part of a sustainability strategy, DASH has implemented a monthly membership fee of \$60 for individuals and \$90 per couple for financially able consumers.

Self-reported data provided by DASH reports enrollment (counted as direct program participants) by quarter (Exhibit PCCSB.1), indicating a relatively steady increase over time; as of March 31, 2014, DASH has served a cumulative count of 750 enrollees since program launch.

Exhibit PCCSB.1: Total Number of PCCSB Participants, By HCIA Quarter



Context

California’s independent living facility regulations, which create a natural market for the services DASH offers, prohibit independent living staff from assisting residents with minor health issues. Prior to DASH, 911 was the only resource staff could use to address residents’ urgent needs for medical attention. DASH offers an alternative resource for minor health care needs, and is often faster than going to the emergency department as enrollees are treated in their own home.

Although Santa Barbara has a reputation for being an economically privileged area, the DASH program highlights the economic diversity of this community as evidenced by the lack of transportation services for the elderly. Many DASH beneficiaries utilize the services because of their limited access to transportation, which often needs to be scheduled well ahead of time.

The awardee is a four-physician palliative care practice that has strong partnerships and a history of high-quality service in the community; the high degree of credibility and trust that it enjoys with its partners and with prospective participants puts the intervention on a sound footing in terms of leadership. The DASH program appears to be pressing the limits of Palliative Care Consultants' capacity to serve new patients; the awardee's success in outreach and enrollment may require the hiring of additional staff and diversification of staff in order to serve all who have now enrolled in the intervention.

Workforce: Staffing and Training

The success of the DASH program depends on having a highly qualified and experienced staff. The DASH rapid response teams currently include physicians and nurses. The initial project plan also included medical assistants, which at this time are being used in administrative roles rather than in rapid response. A nurse practitioner (NP) was also recently added to the workforce, with duties in the process of being defined.

DASH recruits nurses who have a great deal of experience (ranging from four to thirteen years) and clinical knowledge. DASH nurses also have diverse backgrounds and skill sets including, but not limited to, experience in jail settings, geriatrics, home health, and emergency departments. To accommodate the population DASH serves, several nurses are fluent Spanish speakers. The DASH physicians operate a practice in palliative care.

The intervention depends on the rapid response nurses to address a broad array of clinical problems and to make clinical decisions independently. This approach to staffing requires nurses to be confident in their clinical skills and draw on their formal education and work experience. The formal training for DASH clinical personnel has been limited; staff members rely on their professional background and experience. New DASH nurses participate in a shadowing/training process with seasoned DASH nurses and physicians before embarking on home visits alone.

To date, DASH has seen little turnover of its staff. DASH has secured experienced and well-qualified nurses and physicians that are up to the challenge of caring for patients in their homes with minimal resources. In focus group discussions, nursing staff noted they were highly satisfied with their work and expressed appreciation for the opportunity to “get back to the basics” of their clinical training.

Implementation Effectiveness

To date, the DASH model has been implemented basically as planned, aside from modification of staffing to use RNs as the lead for rapid response, rather than medical assistants as proposed initially. The involvement and prominence of the DASH staff, primarily the lead physician and community outreach liaison, has played a crucial role in implementation. During the NORC site visit, participants in consumer focus groups (convenience samples of senior housing residents and of caregivers) and interview respondents alike noted that strong, enthusiastic response to DASH among enrollees.

As previously stated, DASH is a rapid response primary care service. Upon arrival at the enrollees residence, a DASH nurse conducts a patient exam, records all patient medications and either provides treatment or calls an on-call DASH physician for assistance. When needed, DASH physicians arrive within six hours of the original call and are briefed by the responding nurse (who has stayed at the residence) before performing their own examination and deliver final treatment. The model is an “assess, treat and hand-off” model. It is not the intent for DASH physicians and nurses to become their primary care providers.

DASH offers triage, limited care (e.g., antibiotics, wound care), and care coordination with an enrollee’s primary care provider, in circumstances where lack of transportation or other barriers to timely care might otherwise result in a trip to the hospital ED. DASH managers have observed that, as residents learn the appropriate occasions to call DASH, they are less likely to call 911 and visit the ED. Although these are preliminary observations, the DASH team hopes to have data that support this theory through this evaluation and analysis of their own data.

Rapid response is a central feature of this intervention. Thus the service area has remained small (a 12-mile radius around Santa Barbara). However, this constraint has limited the number of patients reached by the intervention. When thinking of expanding to other sites, DASH leadership weighs the delicate balance between serving more enrollees and maintaining a rapid response time. However, the DASH team has shown their willingness to adapt and expand. For the first year of the intervention, DASH served residents within a 10-mile radius of Santa Barbara. Upon further consideration, DASH expanded to a 12-mile radius. This expansion increased the number of eligible enrollees but also put a greater strain on staff resources. DASH leadership acknowledges the potential for employee burnout due the great demand for the services and the time-limited HCIA award. DASH leadership is also considering the best use of staff time, for example, whether using dedicated drivers rather than having clinical staff drive themselves might allow staff to address clinical issues while in route.

DASH leadership anticipates challenges with enrollment as the program enters the second half of the award period because they expect that consumers will be reluctant to enroll for only a few months. However, this has not stopped DASH's outreach in the community. DASH continues to reach out to senior living facilities and community organizations, as well as starting a public awareness campaign.

Santa Barbara is a community where many of the DASH enrollees have chosen to retire because of its culturally rich and relaxed environment. However, retirement for many enrollees means leaving an area they once called home and settling in an unknown community where they have few connections. DASH employees, caregivers and consumers all expressed some concern about social isolation of DASH enrollees. Many participants of the intervention live at home by themselves, in a community where they do not have many social connections, have few living relatives and friends or live miles away from them and do not have the resources for regular visits. DASH leadership and staff were surprised to discover this social isolation when they encountered it during implementation of the intervention. This discovery led to a better understanding of the population they serve and made DASH aware that their role is not only to address medical issues but to forge social connections as well.

Program Effectiveness

NORC's evaluation uses quantitative assessment to answer most questions about program effectiveness related both to the core outcome measures used with all awardees and to supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness are gathered through the site visit, review of survey findings, telephone interviews with the awardee, and review of program documents. For example, as expressed in focus groups with enrollees and caregivers, autonomy is highly valued by this population. Consumers and their caregivers are aware of the physical and mental challenges of aging. Many DASH enrollees have experienced relatively good health throughout their lives but are now observing health and mobility changes due to aging, while others have struggled with chronic conditions for years. DASH offers both populations a sense of control over their health outcomes. Particularly in a group residential setting, patients find it embarrassing to call 911 and be perceived as losing control by their peers. DASH addresses health care needs in a low key manner that avoids the drama and publicity of an ambulance and emergency personnel. Focus groups with consumers and caregivers also revealed a key reason this service is different and valuable to consumers and their families: timeliness of response. Both groups noted that they enjoyed being treated in the privacy of their own home but it also took less time. There is no need to make an appointment, there is little wait time and the waiting that is required is at home. For these and other reasons, DASH consumers and caregivers describe themselves as highly satisfied with the services they receive through the program. As NORC

continues to gather and analyze qualitative and survey data from Palliative Care Consultants over the coming year, we will present a more comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

DASH has considered several options for sustainability planning: partnering with the local hospital, partnering with primary care practices, partnering with an insurance company, and charging enrollees for the service. DASH currently maximizes the provisions of covered services by Medicare and Medicaid, however this does not cover all expenses or services provided to DASH enrollees. DASH is currently in the process of collecting and analyzing data for the purpose of presenting their findings to potential partners.

Although DASH appears to be successful in Santa Barbara, the DASH team has done little to date on replicating their efforts in other communities. However, DASH leadership is considering expansion. Key considerations include: the maximum feasible service area for responding to calls within 60 minutes; the lack of home care quality standards to ensure quality of care if the intervention were replicated at another site; and the need for formal training materials. Particularly, the lack of formal training and procedural documentation would present challenges to readily implementing this intervention in another location.

DASH is attractive to other senior housing, assisted living, and continuing care communities subject to California regulations as a lower-cost and more socially acceptable alternative to calling 911. However, DASH expressed concern over losing the quality of the service upon expansion. Potential challenges to expansion may also include difficulty finding well-qualified nurses and longer wait times.

Data Sources and Analyses

Sources for this report include program documents, awardee self-reported data uploaded to the Lewin website¹⁶, telephone interviews with the awardee, and a site visit.

Site Visit

A 3-person team from NORC visited Palliative Care Consultants of Santa Barbara on May 14 and 15, 2014. Site visit activities included interviews with project leadership, the data lead, the champion physician for training, the outreach and recruitment liaison, senior housing leadership (low-income and

¹⁶ The implementation contractor, The Lewin Group, provides HCI awardees with a website to upload self-reported quarterly reports and data. This website and its contents are also accessible to CMMI and its evaluation contractors, including NORC.

assisted living); observations of rapid response visits and enrollment home visits; and focus groups with rapid response team trainees (nurses), enrollees, and family caregivers.

Survey

Palliative Care Consultants fields two 1-item survey instruments to measure employee satisfaction and burnout, distributed on paper once a year, with anonymous respondents. Given the relatively small number of *workforce* trainees (there are 10 trained RNs), NORC is using the site visit for primary data collection related to the training experience.

To measure *consumer and caregiver experience*, PCCSB fields a “Patient and Caregiver Satisfaction with Care” survey by mail, to all participants within four weeks of a rapid response visit. Surveys are linked back to the provider or providers who participated in the visit. PCCSB questions the feasibility of conducting a conventional survey at baseline and set follow-up periods, given that the DASH intervention is not a continuous experience but rather, intermittent. NORC is exploring the prospects for developing an expanded, coordinated survey with PCCSB, to be administered by phone and with data management and analysis by NORC.

Secondary Data

NORC has executed a Business Associate’s Agreement with Palliative Care Consultants of Santa Barbara on April 1, 2014; data shared under this Agreement were used to prepare this report.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by PCCSB, 5/7/2014.

HCIA Quarterly Report for PCCSB, for Reporting Quarter End Date 3/31/2014. Submitted by PCCSB, 5/7/2014.

Site Visit and Telephone Interviews

NORC. Interview (telephone), Awardee Data Sharing. PCCSB, January 13, 2014.

NORC. Interview (telephone), Survey. PCCSB, April 9, 2014.

NORC. Site Visit. PCCSB, May 14-15, 2014.

Pittsburgh Regional Health Initiative

This report presents NORC’s evaluation of the Primary Care Resource Center (PCRC) program, sponsored by Pittsburgh Regional Health Initiative as part of the HCIA initiative. The PCRC program provides intensive coordination and disease management for patients by way of a hospital-based, virtual patient-centered medical home, which expands upon the resources of the partner primary care practices similar to that of an accountable care organization (ACO). The initiative is targeted at patients with chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), and acute myocardial infarction (AMI).

We provide initial observations about the program based on a review of program documents current through PRHI’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014), telephone interviews with the awardee, and a site visit that was conducted in June 2014. While this report presents themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection or fully coded and formally analyzed the data collected from the site visit. We expect to have more definitive findings and results for the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Other-Regional Health Improvement
Funding Amount:	\$10,419,511
Launch Date:	7/1/2013
States Where Located:	Pennsylvania, West Virginia

The Pittsburgh Regional Health Initiative (PRHI)’s Primary Care Resource Center (PCRC) program provides pre- and post-discharge care coordination for patients at high risk for re-hospitalization due to chronic obstructive pulmonary disease, congestive heart failure, and acute myocardial infarction. The HCIA award builds on previous work PRHI completed using other funding opportunities, which resulted in a prototype PCRC at Monongahela Valley Hospital in Monongahela, PA.

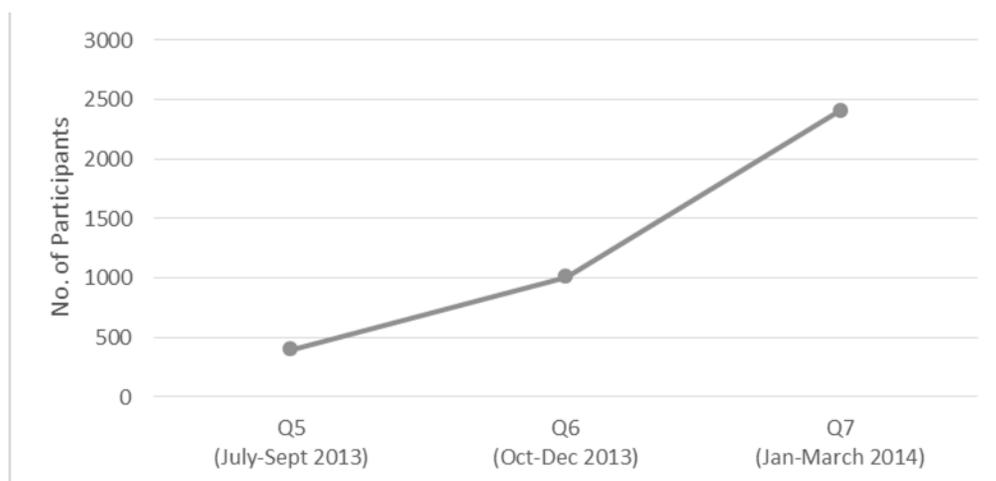
Based on the prototype hospital, PRHI has established six PCRCs in regional community hospitals in Western Pennsylvania and the West Virginia Panhandle. Each hospital-based PCRC is implemented by a team of nurse care managers and pharmacists and delivers inpatient services and home visits, as well as establishes telephone contact with patients and their primary care providers, organized around the rubric of six key tasks (“Perfect Discharge Bundle”); these tasks include a root cause analysis of hospital

admission, patient education, pharmacist medication review, creation of a discharge action plan, and both a pharmacist call and a note to the patient’s physician within 72 hours of discharge.

The PCRC initiative is targeted at patients with chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), and acute myocardial infarction (AMI). Self-reported data provided by PRHI reports enrollment by quarter, shown in the table below. As of early March, 2,036 patients were enrolled at one of the six PCRCs. In the last quarter of 2013, an average of 60 percent of inpatients with the target conditions across the six participating hospitals were identified and enrolled into the PCRC program.

Self-reported data provided by PRHI includes participation data by HCIA reporting quarter (Exhibit PRHI.1); implementation was delayed, with the first quarter of data available being for Quarter 5. During the most recent reporting quarterly (QR 7) for which data is available, the PRHI program served 2,405 patients.

Exhibit PRHI.1: Total Number of PRHI Participants, By HCIA Quarter



Context

PRHI is an operating arm of the Jewish Healthcare Foundation and is a regional health improvement collaborative (RHIC). As a nonprofit, PRHI is a neutral convener working to encourage collaboration among health care providers and other stakeholders, including health plans, employers, and other payers. PRHI works on multiple initiatives related to quality improvement and dissemination of evidence-based clinical practices. It receives funding from a variety of sources, including federal grants, foundations, State government, and health plans.

The HCIA award allowed PRHI to expand on previous work, including a project to develop a prototype PCRC. At the outset of the HCIA award in 2012, PRHI had difficulty recruiting hospitals in the area to participate in the initiative, which led to a delay in launching the PCRCs. Initially PRHI primarily targeted large urban hospital systems, all of which ultimately declined to participate because of concerns about the initiative's impact on their revenues. The program's launch was further delayed when the first six regional hospitals recruited were disqualified from participating because they were already receiving CMS funding for other service delivery or payment initiatives.

PRHI then identified 16 additional hospital sites in the greater Pittsburgh area with potential interest in implementing a PCRC, and reached agreements with six of them.¹⁷ All participating hospitals had readmission rates that resulted in Medicare payment penalties under the Hospital Readmissions Reduction Program, and the opportunity to improve their performance on this metric motivated interest in the PCRC initiative, particularly given the impact those penalties had on their low operating margins (1-3%). At the time of their recruitment, all participating hospitals were independent community hospitals. In early 2014, however, two of the six hospitals (Sharon Regional and Conemaugh Memorial) announced that they were being acquired by proprietary hospital systems. While these hospitals plan to continue with the PCRC until the end of the HCIA award, staff attention has been focused on the acquisitions.

PRHI has developed strong relationships with both hospital leadership and clinical staff at the six community hospitals that have implemented a PCRC. While PRHI offers technical assistance and some financial support to hospitals implementing a PCRC, the hospital itself also invests in the development of the PCRC physical space. PCRCs operate on hospital property and, while PRHI provides some funding for the establishment of the PCRC, the hospital pays for much of the cost of construction or renovation. In addition, PRHI provides funding under the HCIA award for salaries of the staff at the PCRC, but the PCRC staff are hospital employees—typically recruited from within the hospital—with hospital-provided benefits. This arrangement ensures that the hospital has some “skin in the game” and that adequate resources are available for all six PCRC sites.

Workforce: Staffing and Training

Four lead PRHI staff members oversee the establishment of PCRCs, including the Project Director, Program Manager, and two Quality Improvement Specialists. Other PRHI staff, including accounting and communications staff, provide support where needed. The Program Manager and Quality

¹⁷ Indiana Regional Medical Center (Indiana, PA); Butler Memorial Hospital (Butler, PA); Conemaugh Memorial Medical Center (Johnstown, PA); Uniontown Hospital (Uniontown, PA); Sharon Regional Health System Main Hospital (Sharon, PA); and Wheeling Hospital (Wheeling, WV)

Improvement Specialists work directly with recruited hospitals, and each Quality Improvement Specialist is assigned three hospitals. Two additional PRHI staff members provide training both centrally at PRHI and on site to PCRC staff on patient care, motivational interviewing, quality improvement, and clinical guidelines for the three targeted conditions. PRHI offers training to the care managers and pharmacists, linking staff to ongoing training in disease-specific, evidence-based care pathways and in quality improvement best practices. Care managers are also trained in motivational interviewing. To date, over 4,500 hours of training has been offered by PRHI staff.

Generally, PCRC staffing follows the same structure at all six sites. PCRCs are staffed by a team of nurse care managers, a pharmacist, and administrative staff person that assists with data management. One of the nurse care managers leads the PCRC and is responsible for coordinating staff efforts.

PCRC staff members are hospital employees and are hired by hospital leadership. Many of the staff members hired for the PCRCs were long time employees who transitioned to the PCRC from other positions at the hospital. Because of this arrangement, PCRC staff members understand the hospital culture, are accepted by their peers, and have established constructive working relationships with physicians and nurses that facilitate communication about PCRC patients.

Although most of the care managers were familiar with the hospital itself, the roles and responsibilities of the nurses at the PCRCs are different from typical nursing duties at a hospital. Therefore, PCRCs have seen some staff turnover among care managers who ultimately determined the new and demanding position was not a good fit for them. In the first six months of the project, seven positions, including both nurse care managers and administrative staff, were vacated and promptly filled by qualified individuals. Although positions were filled quickly, PRHI had to conduct additional training for new staff early in the life of the project.

The pharmacists on the PCRC teams also have a unique role. PCRCs sought pharmacists with a combination of retail experience and hospital pharmacy experience as the pharmacists need to both coordinate the hospital discharge process and work directly with patients to do medication reconciliation.

PRHI offers training to PCRC staff in three areas: the Perfecting Patient Care (PPC) model, motivational interviewing, and advanced clinical support. PPC is a trademarked educational program developed by PRHI that is based on “lean” principles and uses a team-based problem-solving approach to assist health care organizations design work processes that reveal and correct problems. The PPC curriculum was modified for PCRC staff and was delivered to staff via several non-consecutive full day sessions.

PCRC staff is also provided training in motivational interviewing, a technique to encourage and motivate chronically ill patients to adopt better daily practices and to self-manage their conditions more effectively. This approach encourages patients to acknowledge their progress (i.e. “you must be so proud of yourself for quitting smoking” versus “I am so proud of you”) and to focus on their personal goals (i.e. reducing the number of cigarettes they smoke per day versus quitting smoking completely).

In addition, PRHI partnered with the American Heart Association and the COPD Foundation to develop advanced clinical training modules focused on their treatment guidelines. Full day trainings have been offered periodically throughout the year.

PRHI administered post-training surveys to evaluate whether trainees found the training useful and met certain objectives, but this information has not yet been made available to NORC for its analysis.

Implementation Effectiveness

While each PCRC follows the same model, PRHI has been careful to adapt the implementation of the PCRC model to the unique circumstances at each one of the six hospitals. PCRCs did not want to duplicate services that were already offered by the hospital. For example, if a hospital already had smoking cessation services, the PCRC would refer patients to that program instead of developing their own smoking cessation resources. In addition, the PCRCs are physically located in different spaces within each hospital, ranging from former emergency department space to a separate medical office building on the hospital’s campus.

As noted above, the competitive health care marketplace in Western Pennsylvania affected hospitals’ willingness to join the HCIA project. After the initial rounds of recruitment did not yield any partners, PRHI identified 16 additional candidates and conducted an assessment of each hospital to determine which might be the best fit. The assessment included an evaluation of the volume of patients with the three targeted conditions; conversations with hospital leadership to ensure they understood the financial implications of their participation (i.e., both with respect to supporting the PCRC and in terms of impact on admissions); and whether the hospital was willing to share data with PRHI. As a result of the assessment, some hospitals declined to participate and ultimately PRHI selected six from the remaining group of hospitals.

PRHI has developed a comprehensive manual detailing the steps required to implement a PCRC. The following is a brief description of these steps, as laid out in the implementation manual:

- **Leadership planning.** Engage with hospital leadership to discuss the implementation of the PCRC, the resources needed, and the timeline for implementation.
- **Conduct and report on hospital assessment.** Conduct an assessment of what care management services are already provided by the hospital, information technology capabilities, and potential space for the PCRC.
- **Recruit PCRC staff.** Create job descriptions and recruit care managers and pharmacists. Conduct orientation and training for new staff.
- **Implement IT/data collection plan.** Evaluate existing documentation and monitoring capabilities and develop new capabilities as needed. Develop a reporting schedule to monitor progress.
- **Build out of PCRC facility.** Identify, design, and build out the space for the PCRC. Important to consider ease of patient access and ensuring sufficient signage to direct patients to the PCRC.
- **Establish a PCRC team and operational plan.** Develop care management framework and care pathways for chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), and acute myocardial infarction (AMI); prepare patient education materials; determine what services the PCRC will offer; and develop PCRC operations manual.
- **Implement lean training plan.** Train new employees on Perfecting Patient Care curriculum, motivational interviewing, and advanced clinical training (more detail below in Workforce section).
- **Develop communications plan.** Develop communication plan for both internal and external audiences and develop materials to distribute to physicians and patients.
- **Engage physicians.** Engage with physicians to educate them about the services the PCRC offers.

All six PCRCs were launched between July 2013 and September 2013, with each implementation taking approximately eight weeks. PRHI staff was critical in providing support to the sites to keep the process moving and in supplying technical support.

From the initial collaborative planning with the partnering hospitals and throughout implementation, PRHI and PCRC staff communicated with primary care providers (PCPs) in the community to educate them about the PCRC and the services they offer. Since PCRC staff provides updates to PCPs based on their contacts, notes and visits with patients, PCRC staff has found that with time, physicians have begun to call the PCRC for updates on their patients as well as refer some patients who have not had a hospitalization to the PCRC for education and self-management skills.

PRHI developed a documentation guide for PCRCs so they know what data should be reported. PRHI collects 79 measures from five domains, including outcome measures, patient satisfaction, and process

utilization. In terms of quality improvement, the PCRCs focus on the capture rate of PCRC patients on admission; home visit rates; compliance with the perfect discharge bundle; and patient enrollment refusal rate. PRHI develops periodic reports that look at all of the PCRCs. The reports are distributed to all sites for quality improvement purposes.

PRHI also conducts monitoring visits to each PCRC site. In early 2014, each hospital had a monitoring visit attended by PRHI staff and the hospital champions. During the visits, the teams reviewed operational data and discussed a variety of issues, including the acceptance of the project by hospital staff, financial health of the organization, personnel issues, training opportunities, and sustainability.

Program Effectiveness

NORC's evaluation uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of hospital emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness are gathered through the site visit, review of survey findings, telephone interviews with the awardee, and review of program documents. As NORC continues to gather and analyze primary (qualitative and survey) data from PRHI over the coming year, we will present a more comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

The well-established and refined PPC trainings conducted by PRHI strengthen prospects for replication of the PCRC initiative, particularly in the Western Pennsylvania region, where the experience of the six participating hospitals is being followed by other hospitals. The PRHI program includes a judicious mix of generic continuous quality improvement (CQI) processes and skills along with focused attention to inculcating best practices in the treatment of specific chronic diseases.

PRHI has had ongoing discussions with their hospital partners about sustainability and how to continue this program after the grant funding ends. PRHI has received positive feedback from the sites about the program, but questions remain about how hospitals could get paid for their care management efforts. While PRHI covers the majority of the costs for the PCRCs, the hospitals also made significant investments in the program, particularly in terms of construction of the PCRC space. Some hospitals view this as an investment in their future. Two sites have indicated they see the PCRCs as being part of their normal operations in the future.

PRHI will continue to support the PCRC sites and plans to expand the number of FTE nurse care managers at the four largest PCRC sites. Financial incentives or penalties around readmissions are also driving hospitals' interest in continuing the PCRC program. PRHI would like to transform the program into an economic model that is financially viable and plans to hold a summit in the fall of 2014 to review and seek input on their economic model.

Data Sources and Analysis

Site Visit

NORC conducted a site visit on June 10 and 11, 2014. The itinerary for the site visit included one day at the PRHI's offices in Pittsburgh and a second day divided between two sites –Butler Health System and Indiana Regional Hospital. The first day include briefings, interviews and group discussions with project leadership and PRHI leadership, focusing on PRHI's mission and history, PCRC project implementation steps and timeline; PRHI's Perfecting Patient Care University offerings, including quality improvement strategies; program management and ongoing consultation with PCRCs; and sustainability. On the second day the NORC site visit team interviewed leadership at each of the two participating hospitals, were briefed on the PCRC intervention at each site, observed a staff huddle at one site to assign newly admitted patients to specific nurses, and received a briefing on, and demonstration of, motivational interviewing by the PRHI trainer.

Additionally, NORC conducted a series of interviews with the awardee and the CMMI project officer prior to the site visit and has also been reviewing the quarterly report documentation submitted to CMMI through the Lewin website as well as additional documentation provided by PRHI staff, including the PCRC Implementation Guide.

Survey

The Pittsburgh Regional Health Initiative has not fielded a *workforce trainee survey* to date, although they did field a pilot provider survey at a prototype site that was not part of the HCIA grant. NORC is exploring with PRHI the prospects for fielding a NORC stand-alone survey of nurse and pharmacist care coordinators who have participated in the PRHI trainings. This survey would be administered online, and a draft survey instrument is being developed for PRHI's review.

To measure *consumer experience*, PRHI has access to aggregate hospital CAHPS data from its six partner sites and is specifically interested in questions related to the discharge experience. PRHI and NORC are exploring the feasibility of asking the hospitals or hospital survey vendors to drill down to isolate results

for PCRC participants among the individual hospital respondent cohorts. The care transition questions included in HCAHPS appear to be the best available consumer experience metric for the PCRC intervention.

Secondary Data

No data sharing agreement is being established with the Pittsburgh Regional Health Initiative. A data sharing agreement is not needed with PRHI because patient identifiers are not being provided. Instead, patients eligible for the intervention have been identified by discharge diagnosis in the Medicare data files made available to NORC by CMMI. NORC and PRHI worked together to ensure consistency with the program's eligibility criteria to identify patients through claims data.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by PRHI, 4/30/2014.

HCIA Quarterly Report for Pittsburgh Regional Health Initiative, for Reporting Quarter End Date 3/31/2014. Submitted by PRHI, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. PRHI, March 23, 2014.

NORC. Interview (Telephone), Awardee Data Sharing. PRHI, March 19, 2014.

NORC. Interview (Telephone), Site Visit Planning. PRHI, May 6, 2014.

NORC. Interview (Telephone), Survey. PRHI, April 7, 2014.

NORC. Site Visit. PRHI, June 10-11, 2014

Providence Portland Medical Center

This report presents NORC’s evaluation of the Tri-County Health Commons program, sponsored by Providence Portland Medical Center and Health Share of Oregon. The program aims to coordinate care for adult high-risk and high-acuity Medicaid and dually eligible Medicare/Medicaid beneficiaries in the tri-county Portland metropolitan region through both hospital- and community-based interventions.

We provide initial observations about the program based on a review of program documents current through Providence Portland’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014); telephone interviews with the awardee, and a site visit that was conducted in March 2014. While this report presents themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection or fully coded and formally analyzed the data collected from the site visit. We expect to have more definitive findings and results for the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Integrated Health System
Funding Amount:	\$17,337,093
Launch Date:	9/1/2012
States Where Located:	Oregon

The Tri-County Health Commons project (“Health Commons”) is administered by Health Share of Oregon, one of Oregon’s 16 Coordinated Care Organizations (CCOs). Health Share is a collaboration of integrated health delivery systems, county-based mental health organizations, and the CareOregon Medicaid managed care organization (MCO) within the Tri-County Portland metropolitan region (Multnomah, Clackamas, and Washington Counties) of Oregon. At the time of the HCIA application, CCOs were still in their early stages and infrastructure was not fully in place; as a result, the newly formed Health Share partnered with Providence Portland Medical Center to establish the HCIA application. Providence Portland, as a result, is the administrator of the award, but decisions about the project direction and implementation are made by the Health Share leadership. The Center for Outcomes Research and Education (CORE) at Providence Portland is responsible for conducting the internal evaluation and warehousing the claims data for Health Commons.

The Health Commons project is one of the more comprehensive in the HCIA Complex/High-Risk Patient Targeting portfolio, containing five separate interventions (and nine in total if including sub-

interventions) in both hospital and community settings. Under the umbrella of Health Share, which collects and disperses the HCIA funding, the Health Commons program deploys interventions at two levels of intensity for Medicaid enrollees with greater or lesser levels of risk and acuity.

“Level 1” interventions are intended to work with any individual who experiences an inpatient or outpatient hospital visit. These interventions include:

- **ED Guides:** This program aims to capture individuals with high emergency department (ED) utilization, but with non-acute needs, within the Tri-County region in order to help them find a more appropriate place to receive care.
- **Standard Transitions:** This program aims to build a standard, enhanced discharge summary into hospital EMRs, as well as incorporate standard protocols for hospital transitions into primary care clinical workflows. This intervention is in place with two of the health system partners (Legacy and Providence Portland) and most of the Multnomah County hospitals as of QR7, with the plan to roll out to another health system, the Oregon Health and Science University (OHSU), in the near future.

“Level 2” interventions are designed for high-utilizing patients, including those with multiple inpatient admissions, high-frequency ED use, and psychiatric inpatient admissions. These interventions include:

- **Care Transitions Intervention (C-TRAIN):** This program works to provide high-intensity transitions support to high-utilizing patients of all payer groups that are discharged from hospitals. The patients are paired with a transitional care nurse and clinical pharmacist to help with the process and link patients to resources that they need. It is currently in place at OHSU and the Legacy hospitals.
- **Intensive Transition Teams (ITT):** This program provides transition support for patients with a psychiatric hospital admission, utilizing mobile crisis support specialists to meet patients at the hospital and follow them through their transition to outpatient care. The program works across all three counties, and is based on a long-running (6-7 years) program in Washington County.
- **Integrated Community Care Teams (ICCT):** This is an umbrella program, consisting of four sub-programs, that aims to provide relationship-building and outreach services to patients to address a variety of health and psychosocial needs. These programs generally use outreach workers, either community health workers or licensed clinical social workers. Within ICCT, the interventions include:
 - ▶ **Health Resilience Program (HRP):** This is the largest portion of the Health Commons grant and has the most staff (sixteen) of any of the interventions. The program is operated by CareOregon

and embeds Health Resilience Specialists (HRS) in primary care clinics (and one with a Physician Assistant in a community setting) to assist high-utilizing patients with chronic conditions with disease management (including improved self-efficacy) and health literacy on an ongoing basis, generally over a 3-9 month duration. It is based on a pilot project launched by CareOregon in 2011, which built upon eight years of work by CareOregon in telephonic care management, as well as similar work done in Boston (Commonwealth Care Alliance)¹⁸ and Camden, NJ (Camden Coalition for Health Care).¹⁹

- ▶ **Central City Concern Health Improvement Project (CHIPs):** This program uses outreach workers (including a peer wellness specialist), a registered nurse, and mental health professionals to provide health care services and housing to the homeless population.
- ▶ **New Directions:** This program works with patients with mental health challenges and high levels of ED utilization at OHSU, having embedded LCSWs in the ED attend mental health and primary care appointments with the patients.
- ▶ **Tri-County 911 Service Coordination Program:** This program provides behind-the-scenes care coordination for patients that frequently call 911. It is used in all three counties, but is based on a program started in Multnomah County.

The Health Resilience Program in particular relies heavily on the trauma-informed care (TIC) model to engage with its patients, although Health Share staff reported that most of the outreach models incorporate this approach in working with patients. Developed by the federal Substance Abuse and Mental Health Services Administration (SAMHSA),²⁰ the TIC model uses six key principles to address the concept of trauma for patients: safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice and choice; and cultural, historical, and gender issues. The HRP team discovered through its work that many of the patients had faced severe trauma and difficulties in their lives; as a result, the team emphasized the importance of “meeting patients where they are” and building relationships with patients over a longer period of time. Many of the HRS had prior experience in community health and patient counseling, and the program leadership focused heavily on recruiting staff that could build trust and rapport with the population and had extensive knowledge of community

¹⁸ Commonwealth Care Alliance. *How our program works*. Retrieved August 21, 2014, from <http://www.commonwealthcare.org/the-program/how-our-program-works/>.

¹⁹ Camden Coalition of Healthcare Providers. *An Initiative to Reduce Unnecessary Hospital Utilization in Camden*. Retrieved August 21, 2014 from <http://www.camdenhealth.org/programs/care-management-program/>.

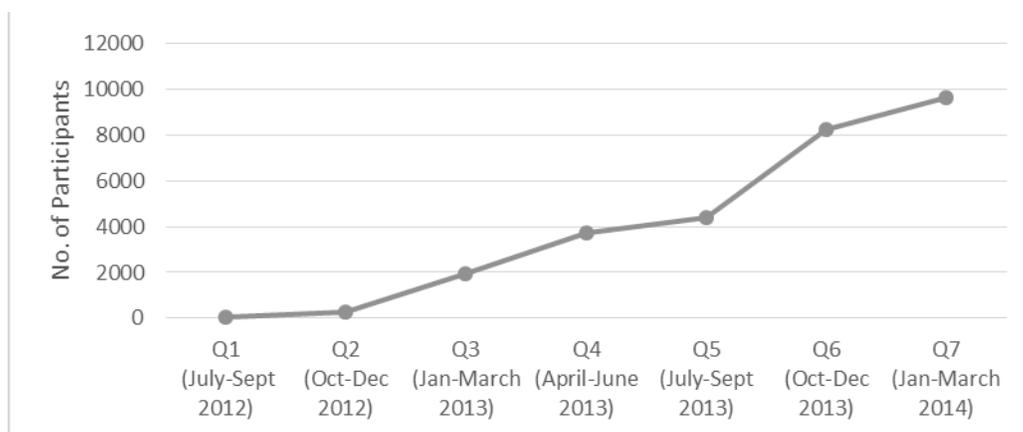
²⁰ Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services. *Trauma-Informed Approach and Trauma-Specific Interventions*. Retrieved August 21, 2014 from <http://beta.samhsa.gov/nctic/trauma-interventions>.

resources. The HRSs are trained to not rush patients through the program, and they have been more involved with patients in the community rather than solely embedded within the clinics.

Given the different goals of the various interventions within Health Commons, the patient selection criteria can vary, but many of the interventions utilize the CareOregon case management software PopIntel to identify patients. The system is set up to match ED and hospital claims with the PopIntel registry, and the teams meet with providers and clinical operations managers on a regular basis to talk about patients that could be referred into the program. The HRP leadership also reported that providers can refer patients to the program if they believe that they would benefit from its services.

Self-reported data provided by Health Commons reports enrollment by quarter, shown in the graph below (Exhibit PPMC.1). In the most recent reporting quarter (QR 7), the team reported 9640 patients served.

Exhibit PPMC.1: Total Number of Health Commons Participants, By HCIA Quarter



Seventy percent of the patients served by the Health Commons program during the most recent reporting quarter (Q7) are adults ages 26 through 64 years; seven percent are young adults 18–25; and 12 percent are ages 65 and older. Notably for a Medicaid population, only six percent are children and adolescents; this is due to the fact that the program specifically focuses on adults. Fifty-six percent of the Health Share’s enrollees are white, 14 percent are Black or African American, and seven percent are Hispanic. Race or ethnicity is not available for the remaining quarter of enrollees. All of Health Share’s enrollees are Medicaid beneficiaries, and around 20 percent are also dually eligible for Medicaid and Medicare.

As of the most recent quarterly report (QR 7), the Health Commons program has 67 FTE staff, although a breakdown was not made available by intervention type.

Context

Health Share of Oregon CCO was formed through a partnership between four health systems (Providence Portland, Legacy, Kaiser Permanente, and Oregon Health and Science University (OHSU)), three county-based community health centers (in Multnomah, Clackamas, and Washington Counties), the CareOregon Medicaid system, and the Coalition of Community Health Centers. Health Share submits the global budget for the CCO and distributes payments to the partners on a capitated basis, using risk-adjusting factors to ensure that partners are paid appropriately based on their business models. While the various Health Share partners are involved with the Health Commons project in different capacities, leadership indicated that the CCO model framework is essential to developing and sustaining the program going forward, as it offers greater flexibility in deploying resources and non-traditional services to Medicaid beneficiaries than does fee-for-service Medicaid.

Because the CCO model requires detailed and prescriptive letters of agreement among health plans, as well as collaborative arrangements with county mental health authorities, Health Share staff noted that discussions and collaboration with the community and its former competitors are more substantive than ever before. Many of the interventions were adopted and adapted from interventions already established by one or more partner organizations. The Standard Transitions model was based on work that Kaiser Permanente had done around discharge summaries. The Tri-County 911 program was started in Multnomah County, and the ITT program grew from a program in Washington County that was adapted to fit the needs of Clackamas and Multnomah counties. CareOregon had pioneered the work with community health workers and outreach that developed into the HRP and ICCT programs. As a result of partnering, the CCO has been able to adopt the best practices and services from the Health Share community to replicate and spread across the Health Commons project.

In addition to spreading innovative approaches throughout the Health Share partner organizations, the experience of Health Commons is also shared with CCOs across Oregon, through the Oregon Health Authority's (OHA) Transformation Center. OHA establishes performance metrics for CCOs and hosts Learning Collaboratives for CCOs to share ideas and best practices. The CCO model in Oregon provides crucial support and incentives for stakeholders to achieve the goals that Health Commons is working toward. However, because Oregon's political environment is especially favorable for the adoption of a statewide framework such as the CCOs, replication of the Health Commons approach in other States is an uncertain proposition. Further, even in the favorable political context of Oregon, not all relevant services have been fully integrated into the CCO model. Most notably, Medicaid long-term care (LTC) services and funding are not integrated with Medicaid physical and mental health services in Oregon, which excludes an important sector of health care from the innovations undertaken by Health Commons.

Health Share staff related that much of the impetus for CCO participation and for pursuing the HCIA funding was Oregon’s legislation establishing the CCO model across the State, with a sunset provision for Medicaid managed care organizations (MCOs) in place for 2017. One member of Health Share leadership reported that “We had the infrastructure to be able to do the [HCIA] grant, but the boldness and support necessary to sustain [it] came from the CCO.”

The Tri-County region served by the Health Share CCO is the only region in Oregon with more than one CCO in operation. FamilyCare, Inc. is the second CCO in the Portland metropolitan area. FamilyCare’s provider network includes smaller physician practices rather than large health systems, and its enrollment is also much smaller than that of Health Share—80,000 members as compared with 200,000—and, as noted previously, serves a larger proportion of pediatric patients than does Health Share. Health Share staff noted that only about one-third of its provider network overlaps with that of FamilyCare. Still, with most other parts of the State having only one CCO in a given service area, implementing policies or changes in practice across providers in the Portland metropolitan region is made more complex as a result of having two CCOs.

Workforce: Staffing and Training

The Health Resilience Specialist (HRS) role is one of the more prominent workforce roles created through the award, and it has been substantially revised since the inception of the program. While the pilot program suggested that peer health workers with general experience in building trust and rapport could perform the job, experience in the field revealed that many of the problems afflicting the patient population (homelessness, addiction, mental health, and trauma) required higher levels of expertise. In particular, HRP leadership reported that at least 90 percent of patients are affected by some degree of mental illness and addiction, and many patients face behavioral health comorbidities and self-medication issues to deal with trauma. As a result, the HRS team revised the HRS job description to require master’s degrees for the top HRS tier, offering a second tier for those workers without degrees but with extensive community experience. In addition, the HRP introduced a licensed clinical social worker Clinical Supervision group for licensed providers to improve their skills. The HRS program has added peer health workers in order to supplement the work done by the trained HRS.

HRP leadership reported that searching for the right person for the HRS role can be like “looking for a needle in a haystack,” noting the importance of behavioral interviewing in determining whether a worker would be a good fit. They noted that a good HRS should be “Switzerland-like;” that is, he/she should be able to understand people’s various languages quickly and work to be an advocate for their patients, but also be able to back off to a less-involved position if the HRS begins to get overwhelmed by patients’

issues. An appropriate distance, the team argued, needs to be kept between the HRS and the patient to ensure a balance between helping and becoming too involved.

NORC conducted a focus group with eight HRSs during its site visit to Health Share. The participating specialists came from a variety of backgrounds, including housing counseling, community health, drug assistance, homeless youth, and women's counseling. They expressed that while they did go through some formal training (mostly around TIC and motivational interviewing), the most valuable training to them happened on the job through mentoring and from the patient discussions the team has during its regular team meetings. The team-wide discussions help to resolve issues the HRS are having with specific patients and broader, more systematic questions about best practices for the patient population in general.

The ITT program uses master's level mental health clinicians as the case managers for patients in the program, but because each county has its own contract for mental health services, the staffing does vary between them. Clackamas County, the only county that did not contract services out, also employs peer specialists to accompany patients to their appointments, in addition to the ITT clinicians. It appears that peer support will likely become a larger factor in interventions going forward, given the success of a few peer support programs in Clackamas County.²¹

Implementation Effectiveness

Health Share utilizes a robust case management data collection system, called PopIntel, to track Health Commons patients and provide data for CORE's internal evaluation of the Health Commons program. The system, operated by CareOregon, existed prior to the HCIA award, but has been upgraded with new security measures and a community-facing redesign as part of the award. CareOregon manages the eligibility files for Health Share patients, so it already had a well-developed data warehouse, although the claims are aggregated by the CORE at Providence Portland. The system automatically notifies providers when a Health Commons patient comes into the ED by matching up ED records with registry lists in the PopIntel system.

The system is able to track both individual patient case histories (on a one-to-one basis) and encounter data (often on a one-to-many basis). The information can be used to generate a customized report called a Health Service Profile for each patient, which includes encounter history (phone calls and face-to-face

²¹ Health Share reported that Clackamas County was funding five interventions of this kind: [Iron Tribe](#) (for ex-convicts to be integrated back into the community), [Youth M.O.V.E.](#) (to help teens transition to adulthood), [Oregon Family Support Network](#) (helping families with mental and behavioral health disorders), and [Folktime](#) (peer support for mental health).

discussions), enrollment in Health Commons programs, utilization history from claims (inpatient stays, ED visits, primary care provider visits), and pharmacy records. The Health Service Profile is used during all HRS team discussions to ensure that all staff is aware of how a patient's history might influence progress on goals.

Mid-course corrections and adaptations have been made for each of the intervention components, but many challenges remain. The ED Guide program has focused efforts on improving documentation within EMRs and strengthening motivational interviewing skills for staff, but Health Share reports that the program has a tenuous relationship with ED providers, with a dip in provider participation in the most recent HCIA reporting quarter (Q7). Standard Transitions has seen the fewest changes of any of the interventions, but Health Share staff did propose to add follow-up phone calls to the standard transition protocol, even though the awardee reports that hospitalists already face challenges with integrating the standard template into their current workflows.

C-TRAIN expanded its scope to include otherwise eligible patients with any source of coverage. The awardee team increased its effort to integrate C-TRAIN into existing hospital case management processes in a more effective way rather than have C-TRAIN nurses operate as a separate team. However, the program has fallen short of enrollment targets, which is part of the rationale for expanding the population served to all payers. Health Share reports that the ITT project has faced challenges in trying to implement a successful model for psychiatric and behavioral health services from Washington County in the other two counties. In particular, behavioral health specialists in Multnomah County have high caseloads because patients cannot obtain new outpatient behavioral health appointments in a timely manner, preventing the ITT team from closing cases and turning over to new clients.

The largest changes since the beginning of the program have revolved around the ICCT interventions, particularly with the Health Resilience Program. The program was intended to have the HRSs embedded within the primary care clinics as a way to conduct community outreach; however, the team learned as they implemented the service that the patients' more pressing need was to have someone who would spend time with them in the community. One member of the leadership team remarked, "These are not really high-utilizers; rather, they are being forced into high utilization since the medical system does not know what people are really going through." Another said, "They needed more encouragement, support, and community navigation to help them with the burdens of living in poverty. They didn't need more medical care." As a result of this information, the HRS program shifted its approach to use higher-skilled social workers in the program in order to address these more holistic concerns. The institution of the

trauma-informed care (TIC) approach allowed the HRSs to better establish a rapport with patients who had faced severe difficulties in their lives.

The Health Resilience Specialists have a great deal of flexibility and autonomy in terms of how best to manage their patients. Regular meetings of the HRS team and with HRP clinical leadership allow the specialists to talk about client issues and therapeutic strategies with their colleagues and receive suggestions and guidance on best practices. HRSs often text with their clients, particularly those who are reluctant to take phone calls or meet face to face. Meetings between the HRS and the client can take place outside of the clinics, including over lunch and coffee. The specialists have a flexible spending account to use for their clients however they see fit, including lunches, purchasing household goods for clients, or helping them with other smaller needs. The HRP leadership team has developed a way to expedite reimbursement of the HRS expenses by allowing the specialists to upload a picture of their receipts to the PopIntel system for expense reporting purposes. The level of flexibility that the HRS team has enables them to take interactions with patients more slowly, a feature that the team universally agreed was best for patients with trauma.

Program Effectiveness

Several of the Health Commons interventions have overlapping patient populations, particularly the higher intensity interventions such as New Directions, the Tri-County 911 Program, the Health Resilience Program, and CHIPs, as patients' needs for multiple types of services. For the most part, however, the interventions operate separately from one another and are focused on achieving different outcomes.

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. We expect to have claims and other program administrative data for Providence Portland in house for analysis shortly, and will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Measures of program effectiveness related to patient and informal caregiver satisfaction and experience with the intervention are being gathered through surveys conducted by the awardee. Survey findings are not yet available to the NORC team for analysis and will be included in a subsequent report.

Sustainability, Replicability, and Scalability

Health Share is already discussing sustainability of intervention components with the partner organizations. Each intervention has a Sustainability Portfolio, which includes qualitative and quantitative outcomes (from the CORE evaluation), optimal impacts analysis, and return on investment/sustainability assessments. These portfolios will be reviewed by the Health Share Board of Directors in the coming months in order to determine which and how Health Commons intervention components will continue after the award period ends in 2015. Discussions during the site visit indicated that Standard Transitions would likely continue, as the sponsors of Health Commons agree it is, and should remain, the community standard. Other interventions, such as C-TRAIN, that rely on embedded workers, would need to be picked up by the partner hospitals as part of their overall staffing or business models, perhaps with government incentives.

Health Share expressed the most concern and focus in the coming months on its outreach interventions. The Health Resilience Program reported during the site visit that three HRS staff members, as well as part of the time for the leadership, are supported with in-kind funding from CareOregon, leaving an additional 13 staff that would need to be supported with new resources in the future. Further, because HRSs are not always licensed personnel (e.g., MSWs, clinical psychologists), their services cannot be billed directly, which means that the health plan partners in Health Share would need to absorb these personnel costs. Health Share is working with CORE to design an evaluation program for outreach worker models to try to assess performance metrics and determine if certain sub-components of the interventions are more successful than others.

A potential source of supplemental funding would be the OHA Transformation Center, which offers incentive payments related to 17 CCO performance metrics.²² The metrics include follow-ups after hospitalization, screening for clinical depression, PCMH enrollment, EMR adoption, and OP/ED utilization measures, some of which are addressed by Health Commons components.

The combination of the CCO regulatory structure and the dedication of the Health Share team have fed into the Health Commons program and will be two of the key factors underlying its future. The staff reported that they were able to learn from the experiences of the partner organizations within Health Share, and they felt that the structure of Health Share facilitated better communication and transparency than existed before.

²² Oregon Health Authority. *Oregon Health Authority Measure Sets: July 2014*. Retrieved August 21, 2014 from <http://www.oregon.gov/oha/CCOData/2014%20Measures.pdf>.

Interviews with Health Share staff suggest that the program is operating successfully across the intervention components, and the Health Resilience Program has seen high praise from both leadership and the staff. Initial indications from the CareOregon Board of Directors are that CareOregon will continue to fund the program after the grant program ends.

Data Sources and Analysis

Site Visit

A three-member team from NORC visited the Health Commons on March 17 and 18, 2014. Site visit activities included interviews with Health Share leadership, Health Commons leadership, project directors for the Health Resilience Specialist and Intensive Transition Team intervention arms, an Innovator Agent with the Oregon Health Authority Transformation Center, the PopIntel care management EHR architects, and a focus group with Health Resilience Specialists. Additionally, NORC conducted a series of interviews with the awardee and the CMMI project officer prior to the site visit and has also been reviewing the quarterly report documentation submitted to CMMI through the Lewin website.

Survey

Health Commons is fielding a comprehensive *consumer experience survey* through the Center for Outcomes Research and Education (CORE). All consumers receive a survey, typically by mail, either at baseline and a series of points after their engagement or at the point of engagement (i.e., during a transition of care), depending on the arm of the intervention in which they participate. The survey instrument combines common questions for all respondents with modules tailored for each of the five intervention arms. Data collection and analysis are carried out by CORE. NORC is exploring the possibility of adding questions to the consumer experience survey, as well as receiving raw data for analysis.

NORC is planning, in consultation with Health Commons, to field a stand-alone *workforce trainee survey*. This survey will not only meet NORC's and CMMI's requirements but will also support Health Commons in better understanding the impact, strengths and weaknesses of their training modules and strategies and facilitate a learning practice community. Survey respondents would include clinicians and non-licensed community health workers trained to implement all five arms of the intervention.

Secondary Data

NORC executed a Business Associate's Agreement with Providence Portland Medical Center, CORE's parent organization on August 22, 2014. We have reviewed CORE's data dictionary and have requested

specific variables in an evaluation data set for both the program and comparison groups. Health Share has approved our request and has framed a BAA to facilitate sharing of the evaluation data set with NORC. At the time we began work on this report we did not have the necessary agreements in place to receive data from CORE. Since that time, we have finalized these agreements and look forward to presenting results on the program's impact on measures of health, quality of care, utilization and costs for the Health Share population served by the Health Common program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by PPMC, 4/30/14.

HCIA Quarterly Report for Providence Portland Medical Center, for Reporting Quarter End Date 3/31/2014. Submitted by PPMC, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone). PPMC, December 12, 2013.

NORC. Interview (Telephone), Awardee Data Sharing. PPMC, December 15, 2013.

NORC. Interview (Telephone), Site Selection. PPMC, January 23, 2014.

NORC. Interview (Telephone), Survey. PPMC, April 4, 2014.

NORC. Site Visit. PPMC, April 9-10, 2014.

South Carolina Research Foundation

This chapter presents NORC’s evaluation of the South Carolina Research Foundation’s HOME CARE+ innovation from program launch through August 2014. HOME CARE+ augments the current services of regional home care agencies in South Carolina by training home care agency licensed nurses, including registered nurses and licensed practical nurses, to provide person-centered care coordination. These home care nurses, referred to as Home Care Consultants (HCCs), work with clients, their family caregivers and personal care aides to coordinate the day-to-day care of clients.

We provide observations about HOME CARE+ based on a review of program documents current through the awardee’s seventh quarterly report to CMMI, a series of telephone interviews with the awardee, and a site visit that NORC conducted in March 2014. This report presents information and themes that NORC has identified during the first year of the evaluation. It is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative data to be used as part of our evaluation. NORC will present more definitive findings and results in subsequent reports to CMMI.

Overview of Awardee

CMMI Category for Awardee:	Other-University Affiliated Nonprofit
Funding Amount:	\$2,884,719
Launch Date:	1/10/2013
States Where Located:	South Carolina

Based at the University of South Carolina’s (USC) Arnold School of Public Health, the South Carolina Research Foundation is implementing HOME CARE+, a community-based approach to improving in-home care coordination to dually eligible Medicare and Medicaid beneficiaries.

The HOME CARE+ program serves as an overlay to the existing services provided by regional home care agencies. Program staff at USC trains licensed nurses (known as Home Care Consultants or HCCs) employed by select regional home care agencies in person-centered care coordination techniques that they then use to better serve home care clients. HCCs work with clients, their family caregivers and personal care aides (known as Home Care Specialists –HCS) as a team to coordinate the day-to-day care of clients. While the HCSs are in the client’s home on a regular weekly schedule, the HCC visits as needed and is available on-call at all times, day and night, throughout the week. The motto of the innovation is “low tech high touch,” due to the high volume of care team visits. By addressing the lack of community-based systems to support long term services and supports (LTSS) and the need for person-centered coordination

across care settings, HOME CARE+ aims to lower preventable emergency room visits and hospitalizations, enable continued independent living in the community, and improve training and oversight of personal care aides in the homes of dually eligible clients.

Recognizing that the most vulnerable population in their State—medically frail elderly who want to remain in their homes—were being cared for by staff with the least training, USC developed HOME CARE+ to better serve this population. The design and implementation of the HOME CARE + intervention built on work that staff had previously done on the CMS grant “Connections for Community Living: A Person-Centered Hospital Discharge Planning Model,” which aimed to maximize opportunities for people to live in the community post-hospitalization by developing a person-centered discharge planning process with hospitals, patients, caregivers and community-based providers.

The HOME CARE+ staff is based primarily in the Office for the Study of Aging at the USC Arnold School of Public Health. The other staff funded by HCIA includes the Home Care Consultants (HCCs) who are based in regional home care agencies. Although not supported by HCIA funding, the program also relies heavily on the participation and collaboration of Home Care Specialists (personal care aides) and home care agency administrators. The HOME CARE+ staff share a deep sense of mission, with a personal commitment to the care of elderly clients that drives not only the paid award staff but also the HCSs and agency administrators. A high level of respect among staff facilitates open lines of communication and feedback.

Clients eligible for this intervention must already be receiving hands-on personal care services through Medicaid, other government programs, or private pay and meet any three of the following criteria. Specifically, they must:

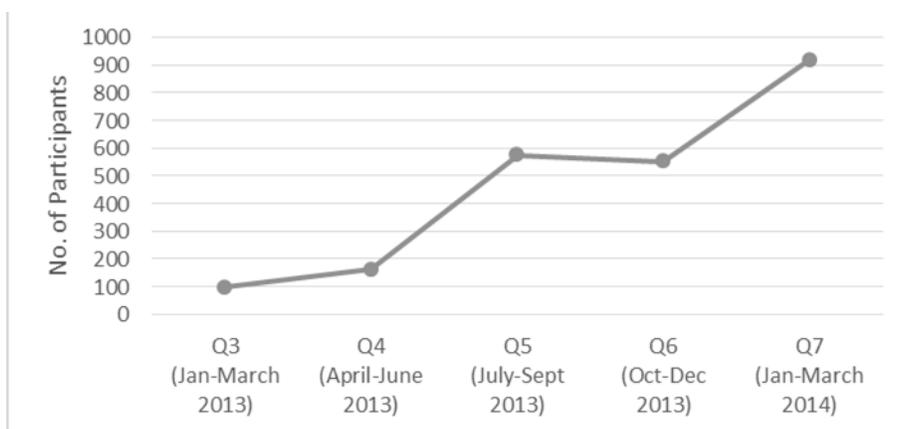
- 1) Be age 65 or older;
- 2) Be dually eligible Medicare/Medicaid beneficiaries;
- 3) Have two or more chronic medical conditions;
- 4) Be taking six or more medications;
- 5) Have had two or more emergency department (ED) visits in the last year; and
- 6) Have had two or more hospitalizations in the last year.

Potential clients are excluded if they are currently enrolled in hospice care or nursing home transition programs, such as the Home Again Program. Existing clients that enter a skilled nursing facility (SNF) or hospice facility during the program are taken out of the intervention group.

A little over half of all HOME CARE+ clients are over the age of 75. The other half are between 64 and 74 years old (29%) and 26 to 64 (20%). Two-thirds of the participants are black or African American and the remaining third are white. Almost four out of every five clients are women. Seventy percent of participants are dually eligible for Medicare and Medicaid, with an additional 12 percent eligible for Medicaid, and the remaining participants have other sources of coverage.

Self-reported data provided by SCRF reports enrollment data by quarter (Exhibit SCRF.1), for both direct participants (those whose services are funded by the HCIA grant) and those considered to be indirect participants (receiving services made available under the HCIA grant but not directly funded by the grant). These data indicate an increase in program participants over time, with a plateau and slight decline evident between Quarters 5 and 6. As of March 31, 2014, the SCRF program has served a cumulative count of 322 direct patients.

Exhibit SCRF.1: Total Number of HOMECARE+ Participants, By HCIA Quarter



Context

Clients mainly live in rural areas of South Carolina, making travel and access to clinics and other services often difficult. The dispersed nature of the client populations means that the HCCs are almost always mobile, working from their cars and rarely in the office environment.

HOME CARE+ benefits from the many community connections across its partners and stakeholders. The history that USC and its partners share with the population the program serves brings a deep understanding of their clients and a commitment to their well-being. For the home care agencies, internal team relationships at all levels create a cohesive team in the field. The client relationships developed by an agency administrator who recruits the client into the program, by the HCC who coordinates their care,

and by the HCS who provides services all affect the quality of services provided. HOME CARE+ has been able to recruit workforce members who are embedded within the community, which gives the program a personal face and credibility.

The participating home care agency owners are some of the strongest advocates for the program and have spent resources recruiting other participating agencies to expand the initiative. During one interview, an agency owner explained that he highlighted the competitive advantage that participating in HOME CARE+ would give an agency, compared to neighboring providers of services. He clarified that HOME CARE+ made his agency more marketable to new financing and delivery models, such as managed care organizations.

Medicaid in particular and government-supported health care programs in general have limited support in South Carolina. Prior to the HCIA award to USC, there was a State income tax security breach in the State. While the matter was resolved, it left many Medicaid recipients wary and distrustful of the security of the system. This has impeded the awardee as they have attempted to gather information from Medicaid beneficiaries eligible for Home Care+. The NORC site visit team conducted interviews and focus groups with this background of lack of popular support in mind.

Workforce: Staffing and Training

HCIA funding is being used to pay the salaries of HCCs. It is up to each home care agency assigned a HCC to provide any benefit like health care, retirement, and office space while the HCC is employed. At the time of the site visit, benefits were inconsistent across agencies. Even mileage reimbursement for the HCC's on-the-job travel among clients' home was not guaranteed. In addition, the HCIA funding for the HCC cannot be used to cover any other staff member's time, even if other staff directly contributes to the HOME CARE+ program by recruiting eligible clients (administrators) or attending mandatory trainings on chronic conditions (HCS).

The USC program staff provides a two week training course for HCCs that includes individual coaching, role playing and competency completions. A person- or client-centered approach is emphasized in the training, such as using open-ended interview questions and setting goals for care with the client, so that clients feel heard and understood in interactions with their caregivers, and with health care and long term care providers. Much of the training is done one-on-one to provide a comfortable and positive environment for the HCC. Only two USC program staff members conduct HCC trainings. The training period is completed when a USC program staff member shadows an HCC on two separate home visits.

The year-long training for HCSs consists of 12 sessions, one per month, on chronic disease management and acute conditions that may increase risk of hospitalization. The time HCSs spend in this required training, and any transportation costs they incur to travel to classes, are not compensated through the HCIA award, and may not be reimbursed by their home care agencies either. The first module is an orientation to the HOME CARE + program and emphasizes the HCS's role in observing and reporting as a member of the HOME CARE + team. The curriculum teaches about chronic conditions such as Chronic Obstructive Pulmonary Disease (COPD), diabetes, congestive heart failure (CHF) and heart disease, as well as acute issues such as dehydration, urinary tract infections (UTI) and other common ailments that affect elderly clients. The materials are based on prior USC training activities and focus on signs and symptoms that may signal a change in the disease or client status. Home Care Specialists are instructed to call the Home Care Consultant if they observe any of the symptoms. The modules are delivered by a trainer appointed by the home care agency, and trained by USC Program Staff. The training is presented through the home care agency without compensation through the HCIA award to the agency staff who conducts the training.

In NORC's meetings with—and observations of—the HCCs during the site visit, the HCCs appeared to share many personal qualities. First, they conveyed a sense of dedication and commitment to serving clients with awareness of and attention to meeting clients' own goals. Each HCC also demonstrated resourcefulness and savviness in their interactions with clients. In the HCC focus group, this was evident in discussions of finding alternative care or medical materials for clients; working within or around the health care system; or simply using their first impressions of a clients' environment to judge safety and health hazards.

HCCs' training and experience, in addition to their sense of commitment, and knowledge of clients and home care, are important factors in selecting candidates for this position. Successfully working with clients in the home requires a high degree of autonomy and confidence in one's nursing skills and past experience. In the HCC focus group, most current staff noted that they had worked in nursing, and specifically home care, from between 5 to 25 years, which they felt was essential in their role. One HCC who had recently graduated from nursing school said that she did feel to be at a disadvantage in not having the home care background of the other HCCs because she was not as familiar with the resources, style and speed of care, and care processes.

The HOME CARE+ training does not, and likely cannot, prepare the HCC for the emotional aspect of home care. As HCCs reported during a focus group, there is no preparation for seeing deteriorating and unsafe home conditions or experiencing a client's death. Although the USC program and agency staff

cover end-of-life care discussions with HCCs and HCS, training modules or discussions do not address what the impact of losing a client may have on the HCC or HCS.

Implementation Effectiveness

The HOME CARE+ intervention has partnered with multiple home care agencies, giving each agency a great deal of autonomy in the implementation process. While the training process is the same for all the HCCs, training and hiring of HCSs, the geography, demographics and benefits differ from site to site. After each home care agency hires an HCC, the HOME CARE+ program team vets and trains them for the role. The HCSs are already employed by the Home Care Agency and are selected for the HOME CARE+ program if they are currently working with a client who has enrolled; however, the HCS training is available to all personal care aides working for the home care agency. The training received by the HCS is not uniformly delivered across the home care agencies; for example, some receive multiple sessions, attending around their work schedule while others must miss work to attend, and some are trained by an administrator while others are trained by the HCC. The high level of autonomy requires the home care agency owners to buy into the HOME CARE+ process and intervention and also creates a distinct level of variability in the work conditions of the award-funded staff.

The relationship between the USC program staff and the home care agencies seems positive, supportive and open to feedback. The NORC site visit team was told by agency partners that they often give feedback to the awardee about what is and is not working well. Likewise, in a group interview with USC program staff, there was both openness and consensus about the intervention's strengths and challenges, which mirrored discussions with partners and their staff.

One of the most innovative components of the HOME CARE+ program is the person-centered care approach to keeping fragile seniors in the community.²³ The program staff trains HCCs in appropriate person-centered interviewing techniques and language. The HCCs hold a series of three introductory meetings with participating clients to conduct a non-clinical bio psychosocial interview, a client assessment and medications review for physician reconciliation, and to develop a negotiated care plan that reflects client goals to remain in the home. Client education, referrals to social services, client advocacy, patient navigation, and on-call support are also part of the HOME CARE+ program. The first assessment visit is a "Getting to Know the Participant" visit rather than a clinical encounter. The HCC engages the client in informal conversation to collect background and health information and asks questions about the client's day-to-day living activities, flagging issues that may need further discussion.

²³ Original HCIA Application. Submitted by South Carolina Research Foundation.

The focus of this visit is on the client sharing his/her life and health experiences based on an interviewing technique that the HCC masters as part of her training. The second visit includes reconciliation review of all medications and a clinical assessment as a “listening only” visit in which potential issues are flagged. The HCC shares the documented medications with the client’s primary care physician for medication reconciliation. The third visit focuses on collaborative problem-solving and creating a plan of care in conjunction with the client’s goals and preferences. The HCC also creates a personal health record for the client to use to manage his or her conditions in the home or to share with providers. The first and third of these initial meetings in particular are considered the innovations of HOME CARE +. The HCCs visit their clients at the frequency and for the duration specified by their Medicaid or other payer coverage. This level of service is not affected by the intervention. All clients receive the three-visit enrollment process from the HCC over a three-week period. After this initial process, HCCs visit clients’ homes on a monthly basis, unless there is a health concern or emergency. The HCC has telephonic appointments with clients as needed or requested. In Quarter 7, there were 595 in-person visits and 1,058 contacts.

Although program and frontline staff agree that improved care coordination for their clients is the most important goal, they have divergent views about enrollment objectives, with program staff prioritizing high numbers of enrolled clients and frontline staff focusing on finding the best fit between HCC and clients. Currently, the HCCs are not paid on a per visit basis, which would motivate maximizing the number of clients they visit. The absence of any quota for visits or time limit per client allows the HCCs to meet the particular needs of each patient, as well as communicate via telephone with patients whom they are not able to see in person. Each HCC is expected to carry a caseload of 40 clients at a time. During the NORC site visit, HCCs asserted that this caseload was unsustainably high. As a result of attrition from the program, HCCs are constantly recruiting additional participants, which may interfere with attending to their current clients.

The person centeredness of the intervention aims to activate clients and engage them in their own care. The emphasis on relationship building provides a foundation of mutual respect between the HCC and the client. The client and caregiver’s preferences with respect to the plan of care are seen as primary, even taking precedence over clinical care recommendations. For example, many clients engage in end-of-life planning discussions with the HCC. During a focus group, HCCs expressed that the client’s preferences and plans are always the right ones, even if their plan is to avoid planning, to continue unhealthy habits, or not to involve family members. As a sign of respect for their clients, the HCCs do not press them to make decisions preferring instead to let them lead the conversation.

A family caregiver focus group conducted during the site visit revealed that caregivers are frequently uncertain about the program parameters and objectives and confused about the program’s identity and name. This seems to stem from a variety of factors, including not understanding the distinction between home care (non-skilled care) and home health care (skilled nursing care). A focus group participant noted that the nurse who came to the family member’s home “was nice enough” but that she “doesn’t do what I think a nurse should do.” Most participants did not have a frame of reference for the program and did not know what services their family members were entitled to through the program. They could describe the services their family members were receiving but often did not know if those services were part of HOME CARE +. It is important to note that most of the clients in this program receive community-based care and home health care, and often obtain services from more than one organization (e.g., VA and a local health care provider). Given the complexity of the care provided in the homes, coupled with limited resources (as a dually eligible beneficiary), and family members who may not be able to dedicate extensive time to support care activities, this confusion is not surprising.

Since the HCIA initiative does not provide compensation for the training of Home Care Specialists (personal care aides) or for other aspects of HOMECARE+ that are executed by home care agencies (except for the salaries of Home Care Consultants), the initiative relies heavily on the agencies and their employees’ innate commitment and good will.

The awardee program’s two greatest assets are the dedication of HOME CARE+ personnel to their clients and the strong and flexible relationships among the partners in implementing the program.

Program Effectiveness

NORC’s evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Secondary data analysis based on claims and electronic health records is not yet complete for HOMECARE+. For this reason, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, Scalability

The HOME CARE+ model builds upon the awardee’s prior work of care coordination and aging services to implement an enrichment of traditional personal care services by specially trained nurses working together with clients, their family caregivers and individual personal care aides in the client’s home.

HOME CARE+ benefits from cohesive and dedicated staff and partners, who have demonstrated their ability to adapt to changing circumstances and client needs.

Those at both USC and with the home care agencies are concerned about whether or not funding will be available to keep HCCs on staff at the agencies after the HCIA award has ended. At this point, it will be up to individual home care agencies to decide if and how to retain the HCCs and their functions.

Sustainability depends on regional public or private funding opportunities, and whether local providers or capitated organizations can support care coordination for the population served by HOME CARE+.

Because this program depends so heavily on strong connections between service providers (the home care agencies), their clients, and a trusted partner such as USC in the training and organizational role, it will not be simple to replicate in other regions. All of these stakeholders will need to be involved in structuring the intervention.

Data Sources and Analysis

Site Visit

A three-person team from NORC visited the South Carolina Research Foundation on March 3 and 4, 2014. Site visit activities included interviews with project leadership, administrators at four partner home care provider agencies; a trainer and two HCSs at a partnering home care agency; and focus groups with HCCs and with family caregivers (via telephone).

Survey

The South Carolina Research Foundation measures *workforce trainee* experience in multiple ways, including surveys of HCSs (six months after training), home care specialist trainers (six months after engagement), competency assessments of HCCs, and interviews with Home Care Provider Agency Trainers (six months after engagement). During NORC's site visit, a focus group with HCCs proved to be an important source of information on the training experience. NORC is exploring the possibility of fielding a stand-alone phone survey of HCSs, building on data gathered from site visit interviews.

At present, HCCs field an in-person survey with their clients at baseline and after six months of participation in HOME CARE+. USC is interested in developing a *consumer and caregiver experience survey*. NORC is exploring the prospect of either a coordinated survey (adding a small number of questions to USC's post survey) or fielding a stand-alone survey with clients, with in-person administration by HCCs and data sharing with USC.

Secondary Data

NORC executed a Business Associate's Agreement with South Carolina Research Foundation on March 24, 2014. At the time we began work on this report, we did not have the necessary agreements in place to receive data from South Carolina. We look forward to presenting results on the program's impact on measures of health, quality of care, utilization and costs for the Medicaid and dually eligible beneficiaries served by the program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by SCRF, 4/30/2014.

HCIA Quarterly Report for South Carolina Research Foundation, for Reporting Quarter End Date 3/31/2014. Submitted by SCRF, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. SCRF, December 17, 2013.

NORC. Interview (Telephone), Survey. SCRF, March 25, 2014.

NORC. Site Visit. SCRF, March 3-4, 2014.

St. Francis Healthcare Foundation of Hawaii

This report presents NORC’s evaluation of the Home Outreach Program and E-Health (H.O.P.E), sponsored by St. Francis Healthcare Foundation of Hawaii, from program launch through August 2014. The program provides home telehealth monitoring for high-risk Medicare beneficiaries living independently in both urban and rural areas. H.O.P.E. has two complementary interventions: one for patients whose condition may be unstable at time of hospital discharge for whom the program provides telemonitoring for 30 days post hospitalization, and the other for high-risk patients living at home who receive telemonitoring over the course of one year, with an emphasis on patient self-management and improved clinical adherence.

We provide observations about the program based on a review of awardee documents current through the awardee’s seventh quarterly report to CMMI (for the period January 1 through March 31, 2014); telephone interviews with the awardee, and a site visit that NORC conducted in March 2014. While this report presents themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection or fully coded and formally analyzed the data collected from the site visit. We expect to have more definitive findings and results for the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Foundation
Funding Amount:	\$5,299,706
Launch Date:	11/27/12
States Where Located:	Hawaii

The Home Outreach Program & E-health (H.O.P.E.) program, supported by St. Francis Healthcare Foundation of Hawaii, was launched in November 2012. The program is based on a successful three-year randomized control telehealth pilot program designed by Steven Berman, MD, the H.O.P.E. project director, in a group of 101 patients with end stage renal disease (ESRD) undergoing chronic dialysis.²⁴ This HCIA initiative builds upon this work, expanding the target population beyond ESRD patients to other high-risk patients.

As previously noted, H.O.P.E. has two intervention arms. Briefly, the first arm recruits patients prior to hospital discharge for whom the program provides telemonitoring with daily clinical measurements and a

²⁴ Berman, SJ, Wada C, Minatodani, D et al. 2011. Home-based preventive care in high-risk dialysis patients: A pilot study. *Telemedicine and e-Health* 17, no. 4, 283-287.

stable transition to home. The second arm enrolls patients referred from the community (typically by their primary care provider (PCP)) for telemonitoring over the course of a year. This longer intervention emphasizes changing patient behavior to improve the self-management of chronic conditions. The goal of the first intervention is to reduce 30-day readmission rates and the latter to reduce hospitalization rates over the course of the year. Nurse clinicians (referred to as telehealth nurses) make home visits to install and instruct patients in the use of standard, commercially available home monitoring equipment that can operate either via telephone or wireless connections. The telehealth nurses set up the peripheral monitoring devices and provide patient and caregiver training at home. Patients are asked to take daily health measurements, including blood pressure, pulse rate, oxygen saturation, weight, and blood sugar (if indicated) using the monitoring equipment as part of their care plan. Patients are also asked to answer a brief health self-assessment questionnaire specific to their health condition.

The 30-day HCIA intervention immediately following hospitalization initially targeted patients diagnosed with congestive heart failure (CHF), pneumonia, or acute myocardial infarction (AMI) and has since been expanded to include patients with chronic obstructive pulmonary disease (COPD) and ESRD due to lower than expected recruitment rates among patients with the original targeted conditions. In addition to having at least one of these diagnoses, patients eligible for recruitment must meet one of the following criteria: one or more hospitalizations within the past year and require assistance with activities of daily living (ADLs).

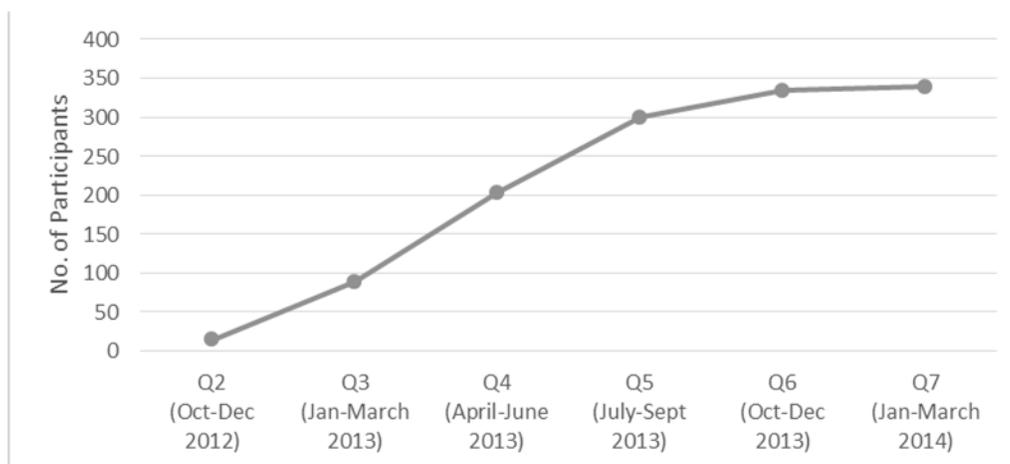
For the 1-year intervention, high-risk patients in the community are recruited in one of two ways. First, they can be drawn from the membership of the Hawaii Medical Service Association (HMSA), an affiliate of the Blue Cross and Blue Shield Association with more than 600,000 covered lives across the State. Using an algorithm that classifies patients by their illness burden, HMSA identifies members with the highest risk of future hospitalization, creating a pool from which patients are randomly selected for participation. Patient names are sent to their primary care physician (PCPs) who then selects those patients they believe could benefit from the telemonitoring services and who also meet the criteria of having been hospitalized at least once in the past 12 months and requiring assistance with ADLs. All PCPs are asked to provide a Plan of Care (POC) for each of their patients. The POC is used to determine the acceptable range of daily monitoring measurements. If a patient's measurements fall outside of the POC-specified parameters, or if the patient's health self-assessment questionnaire suggests a change for the worse, the Telehealth Nurse will initiate patient contact and, if necessary, facilitate a meeting with the appropriate health care provider.

H.O.P.E. staff noted that the HMSA algorithm was adapted by the H.O.P.E. team to focus on high-risk health issues rather than high-risk cost issues, which streamlined the recruitment process. Initially, only about half of the PCPs that were sent the list of high-risk patients responded, resulting in slower than expected enrollment in the first 18 months of the program. Now, a community physician can refer any patient meeting the inclusion criteria, or patients meeting these criteria can refer themselves. The H.O.P.E. team continues to work with providers to improve the rate of enrollment into the program.

The H.O.P.E. interventions operate in three communities, Hilo, on Hawaii or Big Island, and Honolulu and West Oahu, on Oahu. All sites offer both the 30-day post-hospitalization intervention and the 1-year community-based intervention. The Honolulu site expanded its activities from the 1-year community-based intervention to include the 30-day post-hospitalization intervention upon the opening of a new hospital facility on West Oahu in May 2014. The demographic and health profiles of patients across islands differ. In Hilo, roughly a third of patients are Native Hawaiian or Pacific Islander, another third is white, 10 percent are of two or more races/ethnicities, and the remainder are Filipino (7.5%), Hispanic/Latino (6.5%), of other Asian origins, or Black. On Oahu by contrast, the population is 30 percent Japanese, 30 percent of two or more races/ethnicities, 15 percent Filipino, 10 percent white, and the remainder other races or ethnicities. The major notable difference in disease prevalence between the two sites is that the Hilo site has a much higher rate of COPD (57%) than the (until recently) exclusively community-based Honolulu site (20%), which is not surprising, as COPD is a targeted diagnosis for the post-hospital intervention.

Self-reported data from St. Francis reports enrollment (direct program participants) by quarter, shown in the table below (Exhibit HOPE.1). As of March 31, 2014, H.O.P.E. has served 609 patients, 309 in the Honolulu community-based intervention, 64 in the Hilo 1-year intervention, and 236 in the Hilo 30-day post hospital intervention (West Oahu numbers are not yet available). Please note that the graph depicts the number of patients enrolled in the three interventions at each point in time.

Exhibit HOPE.1: Total Number of HOPE Participants, By HCIA Quarter



Of the 339 patients directly served during the most recent reporting quarter, most were either Medicare FFS (36%) or Medicare Advantage (25%), although there were significant proportions of privately insured individuals (15%) and dually eligible Medicare and Medicaid beneficiaries (16%).

Context

H.O.P.E. is an outgrowth of an RCT pilot that the awardee leadership (Drs. Berman, Minatodani, and Jordan) conducted with high-risk ESRD patients over several years under the auspices of the St. Francis Healthcare Foundation and funded by the United States Medical and Material Command. The Foundation and the Foundation’s for-profit subsidiary, St. Francis Healthcare Enterprises, support the St. Francis Healthcare System (Healthcare System), which operated a hospital until several years ago when the hospital was sold and then eventually closed. The Healthcare System now operates several organizationally distinct health and human services agencies, including home health, hospice, residential care, and community development. The Healthcare system is also building a new skilled nursing facility on the campus of the former hospital. The close affiliation between the HCIA awardee team and the St. Francis Home Health Care Program is of mutual benefit to both parties: the home health nurses make referrals to the one-year H.O.P.E. intervention arm, allowing for the monitoring of patients at the end of their Medicare home health benefit period who still need close following, and the H.O.P.E. Telehealth Nurses provide some of the patients of the home health nurses with additional oversight and support that relieves the home health agency’s burden.

Beyond the context of the St. Francis Foundation and Healthcare System, H.O.P.E. operates in a State with unique geography and a distinctive health care marketplace. The distances between and remoteness of some communities in Hawaii make telehealth interventions particularly attractive as a way to bring

services and clinical oversight to isolated and underserved patients and their family caregivers. The health insurance and health plan market in Hawaii is dominated, across all islands, by the Hawaii Medical Service Association (HMSA), which has roughly 500,000 subscribers in employment-based plans, 50,000 in a Medicare Advantage program, and 110,000 Hawaii residents in a State Medicaid managed care plan. HMSA supports H.O.P.E. by producing and sharing lists of high-risk, high-utilizing members and their primary care physicians with the HCIA awardee. HMSA is also following the performance of H.O.P.E. closely, with a view to potentially offering support in some form for this kind of home monitoring service.

There are several physician organizations across the State, including the not-for-profit Pacific Medical Administration Group (PMAG), an independent practice association (IPA) with 850 physicians on Oahu. Most of their members are in practices of one or two doctors, as are most physicians throughout the State. The autonomous and dispersed nature of Hawaii's clinicians has led to a clinical community that is slow to change practices and adopt new technologies or forge new partnerships. This can be attributed not only to competitive pressures but also to the disproportionate burden of administrative and record keeping tasks on very small clinical practices and the challenges of communicating with a diffuse professional community. At the same time, in order to receive certification as a Patient-Centered Medical Home (PCMH), providers are required to increase care coordination, and engaging with the H.O.P.E. program allows PCPs to meet this voluntary certification standard. While H.O.P.E. and its leadership command professional respect, and there are PCMH-related incentives for providers to work with H.O.P.E., the Hawaii health care community is reluctant to take on the demands of novel partnerships and services.

Workforce: Staffing and Training

H.O.P.E. has a relatively small staff, consisting of administrative, analytic, IT, and clinical (telehealth nursing) staff. While the administrative and support staff positions were filled within the first two quarters of the award and have been stable, the recruitment and retention of Telehealth Nurses has presented more of a challenge, with positions being filled more slowly than projected. The current goal is to have two nurses in Hilo and seven in Honolulu; current staffing is at seven fulltime staff and two half-time Telehealth Nurses (8 FTEs in total). Relatively low salaries for the telehealth nursing positions, as compared with salaries for at least some home health agency positions on the island of Oahu, was given by nursing staff as one reason that hiring and retaining nurses has lagged. Another is the slower than anticipated patient enrollment in the community-based intervention at the outset of the program, which is now accelerating.

The Telehealth Nurses with H.O.P.E. have varied backgrounds in inpatient nursing, case management, and home care. A chief requirement for their work is excellent communication and motivational skills to keep patients engaged and actively participating in their home monitoring and to work effectively with their patients' primary care providers (PCPs). They must also become familiar with the telehealth equipment including its installation in patients' homes, receiving and acting on remote monitoring data, and troubleshooting minor technical issues. The Associate Project Director, Dayna Minatodani, RN, PhD, has a background both in nursing and social science research. She is primarily responsible for recruiting and training the Telehealth Nurses. Training of new staff occurs over a two-month period and involves shadowing experienced nurses as they conduct their work both in the office and in the field.

In an effort to standardize the communication strategies between the H.O.P.E Telehealth Nurses and the patients, all staff are trained in Motivational Interviewing (MI) techniques every six months. The spirit of MI is based on three key elements: collaboration between the clinician (in this case, the Telehealth Nurse) and the client (patient); evoking or drawing out the client's ideas about change (in this case, ways of managing their health); and emphasizing the autonomy of the client (in this case, supporting each patient's adherence to the intervention).

In a group discussion with the Honolulu nursing staff during the NORC site visit, the Telehealth Nurses expressed satisfaction with their work, enjoying the professional autonomy that visiting patients in their homes and following patients' progress through the telemonitor reports that they received from their patients and regular phone calls. The nurses each believed that their prior experience—whether as a floor nurse, case manager, or in home care—was the right preparation for their current work. While each Telehealth Nurse managed and monitored her own set of patients, the nurses also easily stepped in to cover for each other when patient calls came in and the primary nurse wasn't available. The nursing staff was less enthusiastic about having to recruit new patients identified through the HMSA risk algorithm for the community-based intervention by contacting physicians' offices and following up on the notifications sent to the PCPs. As the program leadership and staff acknowledged in discussions, winning the trust of community physicians to accept H.O.P.E.'s offer of additional services for the patient and information for the PCP has been a slow process.

Implementation Effectiveness

As already noted, recruitment of patients from the community (by PCP referral) has been slower than the awardee initially expected. Patient referrals from their PCPs has been the preferred avenue for recruitment (in addition to referrals from a number of home health agencies) in order to ensure that the physician's practice was willing to receive information about their patients from the Telehealth Nurses.

Occasionally, physicians will refer a patient to H.O.P.E. without telling the patients about the program, or patients forget that they were told that a Telehealth Nurse will be contacting them. Under these circumstances, the H.O.P.E. Telehealth nurse is essentially making a cold call to interest and enroll the patient. Without the necessary coordination and communication between the PCPs and H.O.P.E. staff, enrolling potential intervention participants is a challenge. It is also worth noting that, in Hawaii, asking to be invited into someone's home is a culturally sensitive request for a service provider to make and a certain level of trust may need to be established before this request will be granted.

For the post-hospitalization 30-day intervention, recruitment has been easier than calls to patients already at home, because the Telehealth Nurses in Hilo have their office in the hospital, and visit patients prior to their discharge. In Honolulu, one Telehealth Nurse is assigned to recruit patients for the 30-day program. She visits the hospital three afternoons per week and works with hospital case managers who provide the names of potential patients with an admission diagnosis of AMI, CHF, pneumonia, COPD or ESRD.

About 40 percent of the patients identified as at high risk for hospitalization and who have been referred to H.O.P.E. for telemonitoring decline to enroll. The project director noted that it will be important to determine any selection bias among patients accepting the service as compared with those who decline it. Another possible aspect of any selection bias might be that physicians refer their least adherent chronically ill patients for telemonitoring services. Project leadership is also looking for better ways than their current risk identification algorithms to identify prospectively those patients who are most likely to benefit from the one-year intervention. Patients set the pace of contact with the Telehealth Nurses in terms of how often they take measurements and answer a series of subjective health questions based on their diagnoses. While the assigned nurse checks in at least weekly with patients who have not transmitted monitoring results, this intervention is notable because it puts patients in control of the rate of contact with the service. Some patients who enroll are later dropped from the program because they do not measure and report the telemonitor readings. On the other hand, other patients, at the end of the year-long intervention, do not want to lose the telemonitoring equipment and contact with the Telehealth Nurse. As patients who avail themselves of this service have severe and multiple chronic illnesses, it isn't obvious that this intervention should be limited to just one year among adherent patients, once the intervention is able to demonstrate an effect on hospital admissions. H.O.P.E. would like to target the services to those who need the support, will use the technology, and have a good chance of avoiding hospitalization as a result of better self-management.

Although the telemonitoring readings can be directly accessed by participating PCPs, few practices avail themselves of this service. The Telehealth Nurses most frequently communicate with PCP offices in

ways that are not fully automated (such as faxing results shortly before a patient's visit) because practices often do not use electronic health records (EHRs) or because the remote monitoring software and existing EHRs are not compatible. Physicians report that they appreciate getting these vital sign reports from telehealth nurses prior to appointments with patients because it enriches their picture of patient's health status and progress.

Based on direct observation of a home visit to install telemonitoring equipment during the NORC site visit, the equipment is relatively simple for patients to use. The reports transmitted to and displayed for the H.O.P.E. Telehealth nurses are well-structured and prioritized by acuity of any outlier values in any of the readings, which can be customized for a particular patient by their PCP. At the same time, H.O.P.E. nurses have encountered several technical issues with the telemonitoring equipment and software, such as discrepancies with date and time of follow-up, reminder entries, the need to manually enter blood glucose measurements, and equipment measurement malfunctions. Training is provided quarterly to address such issues; however, many concerns with the service and product are ongoing. Project H.O.P.E. leadership reports that the vendor has been responsive and many issues have been addressed and resolved.

Through the awardee's patient satisfaction survey and direct testimony, patients and caregivers express appreciation for the telemonitoring service and nurse support. The awardee reports that hospitalizations appear to have decreased among both intervention arms.

Program Effectiveness

NORC's evaluation uses quantitative assessment to answer most questions about program effectiveness related to core outcome measures used with all awardees and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness are gathered through the site visit, review of survey findings, telephone interviews with the awardee, and review of program documents. As NORC continues to gather and analyze primary (qualitative and survey) data from St. Francis over the coming year, we will present a more comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI. To enable program effectiveness analyses in future reports, NORC and St. Francis are working with the Hawaii Medical Services Association to obtain encounter data for Medicare Advantage members enrolled in the program, as well as encounter data for a suitable comparison group. We propose to combine data for the Medicare Advantage population, and for the fee-for-service Medicare population, so that our quantitative analysis of effectiveness St. Francis' program is adequately powered.

Sustainability, Replicability, Scalability

There is the potential for continued support of H.O.P.E.'s telemonitoring services and collaboration with primary care providers through the Hawaii Medical Service Association's (HMSA) private insurance, Medicare Advantage, and Medicaid offerings; and through emerging models such as accountable care organizations (ACOs) in the State. Physician groups that are seeking formal designation as a patient-centered medical home (PCMH) also benefit from collaboration with H.O.P.E. and may be called on to provide some funding for St. Francis' work following the HCIA award period.

Data Collection and Analysis

Site Visit

A two-member team from NORC visited H.O.P.E. on March 20 and 21, 2014. Site visit activities included interviews with the project leadership team, the president of the St. Francis Healthcare Foundation, the Hawaii Medical Services Association, the Pacific Medical Administration Group, and St. Francis Home Care; and group discussions with the nurse clinicians at Oahu and Hilo. NORC is in the process of coding and analyzing the full set of notes from our site visit and will be linking these thematic findings to quantitative data when available. Findings will be presented in the first and subsequent NORC annual reports to CMMI.

Survey

St. Francis H.O.P.E. is not fielding a *workforce trainee* survey. Given the small number of trainees (project staff), NORC is using the site visit group discussions and interviews to gather primary data on workforce in lieu of a survey.

St. Francis H.O.P.E. has developed and fielded a *consumer experience survey*--a 19-item "Remote Technology Model of Care Survey"--for both arms of their intervention. The survey is fielded every three months during the first year, then annually, using telephone with mail follow up. The project leaders recently modified this survey to better measure the impacts specific to each of the intervention arms and patient characteristics that could fine-tune targeting of the interventions. Following a series of dimension reduction analyses in the eighth HCIA quarter, H.O.P.E. has reduced the original number of items in the PCMTS to five items and adapted four behavioral measures (eight items) focusing on depression (PHQ-2), stress (Perceived Stress Scale), self-efficacy, and quality of life (QoLS). This new instrument will provide baseline and follow-up data on self-change behaviors that may be associated with success of the intervention.

The Provider Feedback Survey was launched in HCIA Quarter 8. It is designed to measure provider utilization of patient data provided by the H.O.P.E. and whether data was helpful in care management. It also solicits feedback on ways the program can be improved.

Secondary Data

NORC executed a Business Associate's Agreement with the St. Francis Healthcare Foundation on April 15, 2014, and incorporated their data into this report.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by St. Francis, 4/30/14.

HCIA Quarterly Report for St. Francis Healthcare Foundation of Hawaii, for Reporting Quarter End Date 3/31/2014. Submitted by St. Francis, 4/30/14.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. St Francis, February 6, 2014.

NORC. Interview (Telephone), Awardee Data Sharing. St Francis, December 17, 2013.

NORC. Interview (Telephone), Survey. St. Francis, March 21, 2014.

NORC. Site Visit. St. Francis, March 20-21, 2014.

Sutter Health Corporation

This report presents NORC’s evaluation of the Sutter Health Corporation’s Advanced Illness Management (AIM) intervention, from program launch through August 2014. AIM offers care coordination among hospital, home health, physician’s office, and hospice for seriously ill patients within its health care system, delivered by inter-disciplinary teams of nurses and social workers. AIM targets patients with a high burden of disease, who are hospice appropriate but are not enrolled in hospice, have experienced rapid or significant functional or nutritional decline, have recurrent and unplanned hospitalizations, or who are considered by providers likely to die in the next 12 months.

We provide initial observations about AIM based on a review of program documents current through Sutter Health’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014); telephone interviews with the awardee; and a NORC site visit to Sutter Health on May 12 and 13, 2014. While this chapter presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Integrated Health System
Funding Amount:	\$13,000,000
Launch Date:	7/1/2012
States Where Located:	California

Sutter Health’s Advanced Illness Management (AIM) program is scaling up an evidence-based care coordination program to 14 sites in 19 counties throughout the Sutter Health Corporation’s service area in Northern and Central California. AIM is built around case management and a medical home for patients receiving specialized or advanced care, and believed to be in the last 12 to 18 months of life but not enrolled in hospice. Central program leadership oversees scaling up, with leadership teams at each site following a shared set of operational, clinical, and care coordination protocols and practices for collaboration with partner hospitals, home health agencies, and hospice programs and for delivering consistent workforce training for home-based care teams.

AIM has its origins in a home health based palliative care program (AIM 1.0) begun in 1995 by Sutter Care At Home. In 2008-2009, Sutter Care At Home, together with Sutter Health’s Sutter Medical

Network (responsible for clinician integration at Sutter Health) developed an expanded care management model (AIM 2.0) to support patients' preferences in advanced care and to reduce otherwise avoidable utilization. Sutter Health piloted AIM 2.0 in Sacramento and Roseville and is using the HCIA funds to scale up AIM.0

Sutter Health leadership identify two gaps in care to be addressed by AIM 2.0, including

- Discontinuity between home-based services (such as home health care) and hospice. Once a patient has completed their care plan and is discharged from service, there is no further home-based or telephone support, putting medically frail patients who live in community settings at greater risk for rehospitalization.
- Intermittent patterns of physician office visits and of care and disease management programs. Sutter identified patients who were entering hospice care prematurely, not because they were ready but in lieu of access to home health.

The AIM model is designed to fill these gaps by offering a means to deliver home-based care management, as well as care coordination across settings and providers.

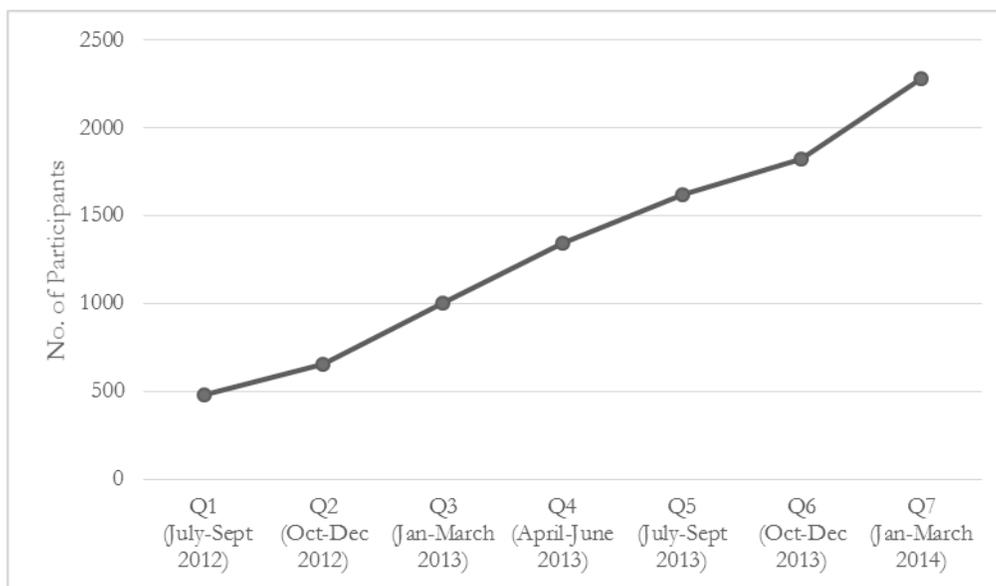
AIM includes multiple types of transitions, beginning with referrals and patient recruitment from hospitals or physician offices. Typical enrollees are patients with a high symptom burden and increased hospital and emergency department utilization over the past 6 to 12 months. Upon discharge from the hospital, if hospitalized at the time of enrollment, patients move through four possible parts of AIM depending on their health and stage in the program. The first stage is a home based intervention, involving a series of visits by teams of nurses and social workers (either Medicare skilled home health or, if the patient does not meet criteria for admission to Medicare Certified home health care, home health services through AIM's Transitions arm). Once a patient is stabilized, care coordination is transferred from a home-based team to phone-based support care coordination (a series of phone-based visits) with a nurse. Some telesupport team members are embedded in physician group practices, while others provide remote telesupport. A patient continues to receive telesupport until a higher level of care is needed (e.g., hospital, hospice) or until discharge from AIM, often due to the death of the patient; a relatively small percentage of patients are discharged on account of improved health or upon leaving the area. Ongoing communication and coordination with a patient's providers is a key part of the intervention.

One distinctive aspect of AIM lies in the number and character of warm transfers from one provider to the next. In each arm of the intervention (telesupport, hospital and home health), the AIM team leader will change, yet the other members of the AIM care team remain responsible for their patient and can become

the lead if and when the patient returns to their arm of the intervention. For example, if an AIM patient transitions from home back to the hospital, they are connected with the AIM team at the hospital; following discharge, the patient will be able to return to home-based coordination through AIM and, as appropriate, telesupport. With implementation have come modifications related to the transfer process. One notable example involves skilled nursing care. The initial design of AIM 2.0 did not include a skilled nursing component. Post-launch, the awardee has developed a protocol to transfer and monitor AIM patients who require skilled nursing care, implemented either when the patient is first referred to AIM or upon a patient’s discharge from skilled nursing.

Self-reported data provided by Sutter Health reports enrollment by Quarter (Exhibit AIM.1), indicating a relatively steady increase over time. As of March 31, 2014, the AIM program has served a cumulative total of 4,233 patients since program launch.

Exhibit AIM.1: Total Number of AIM Participants, By HCIA Quarter



Context

Federal and State home health, hospice and palliative care regulations underpin Sutter Health’s approach to care coordination through AIM, especially given the limited involvement of Sutter Health with managed care and capitated payment systems. Each site must be implemented differently depending on the licensing regulations of the facility and the positioning of the program within its regulatory and health care market environment. For example, some assisted living facilities have been reported by caregivers to restrict or prohibit access to an enrolled patient by AIM home visiting teams, citing State regulations that

limit the delivery of health care in such a setting. In addition, many AIM activities are not eligible for Medicare or Medicaid reimbursement. Home health reimbursement is tied to episodes of care that meet criteria for skilled need and for rehabilitation for a patient who has limited mobility. However, many patients continue to need services at home.

Sutter Health includes a sizable network of physicians, hospitals and home health and hospice professionals in Northern California. It serves a diverse range of communities including urban, suburban, and rural areas, and patient populations of different ethnic groups and economic backgrounds. AIM enrolls patients both from the Sutter network as well as from community physician practices outside of Sutter. Historically, Sutter Health has been a loose confederation of provider groups. AIM leadership has described their intervention as a signal initiative for bringing greater uniformity in care for the population served by AIM, across Sutter Health. Achieving consistency in services delivery for AIM in turn has required that the leadership develop in-depth knowledge about each site and tap Sutter Health's centralized set of resources, in order to tailor the interventions based on each site's available resources and needs while maintaining the same patient experience and set of interventions across all of AIM's sites.

Within the corporate organization, there are multiple disease management and care transitions programs. NORC observations during the site visit noted staff perceptions of competition among Sutter Health units that offer care coordination, and there may be competition within Sutter itself to find and enroll patients. The AIM program enrolls the top 25 percent of members in terms of severity of illness (as noted in an interview with project leadership, e.g., those not actively dying but believed by their provider likely to die within the next 12 months). This group is also pursued by hospice, palliative care, and home health within Sutter. To address and leverage this shared interest within Sutter, AIM collaborates with each of these services as part of site launch, to determine how best to serve prospective patients and to devise means to coordinate hand-offs of patients between programs. Since AIM patients typically have more than one chronic illness, they are most often referred to AIM for total care management. To give an example of such collaboration, as part of AIM, patients identify their personal goals and how to communicate their goals and questions with their physician. As those conversations unfold, a transfer to hospice care is made whenever possible and appropriate.

In addition, AIM has had to address internal structural changes within Sutter Health. In recent years, several hospital systems in Northern California have merged to form Sutter Health. During the mergers and transitions, each system tended to maintain their own programs and practices. Sutter Health decided that AIM would be implemented uniformly across the system, becoming the first system-wide clinical

integration initiative of its type at Sutter. This has not only brought each Sutter facility into alignment but also given AIM the opportunity to gain support from the Corporation as well as from component systems. AIM is being presented as an example across Sutter Health of how the large hospital system can deliver care at a consistent standard of quality across Northern California.

Workforce: Staffing and Training

The AIM intervention brings together a team that includes: nurses based at hospitals (where they make referrals and conduct assessments); nurses that provide telephone intake and support; teams of nurses and, less frequently, social workers that visit patients at home; and primary care physicians who make referrals. The program is almost entirely nurse-staffed and nurse-managed. A physician certified in palliative medicine serves as the AIM Medical Director, participating in case conferences and in consultations with the nurses, as well as phone consultations with community physicians. Each AIM team is supported by a team care coordinator, clinical nurse specialist, and program leader, with centralized referrals and intake, after hours nurse triage service (in an early stage of implementation at the time of the NORC site visit), and program administration.

Training plays a large role in forging a cohesive group of staff that collaborates within and across sites. AIM team members are trained at the same time, at the same location, with the same materials, with some position specific modules. AIM has developed a formal training program that includes classroom discussions and training, along with preceptors and shadowing opportunities. The curriculum is competency-based, with testing to measure acquisition of content. The program emphasizes the main goals and values of the intervention, or as they are called at Sutter, pillars, at every step in the training.

Staff is required to participate in a four-day training course on the AIM intervention, in addition to their standard Sutter Health training. All staff members, regardless of job title, are trained together. This appeared to foster a team mentality and breaks down cultural divides between staff (physicians, RNs, social workers) related to discipline and settings of care. Training is based mostly on shadowing others, rather than on classroom lectures. Even the four-day training includes a great deal of interactive elements, role playing, and creating responses. Beyond the initial round of formal training, staff is given periodic refresher courses and ongoing opportunities to shadow more experienced colleagues.

While on site, the evaluation team had the opportunity to interview Sutter staff on their positions, job satisfaction, and the impact that they believe this intervention is making on patients' lives. Overall, staff report great satisfaction in their positions at AIM. Staff recognized the challenge and appeared ready to meet it with enthusiasm and hard work. Many staff members noted that they work harder than at previous

positions but also feel more fulfilled by their work, primarily because they feel they are making a difference in the lives of their patients and patients' families.

Implementation Effectiveness

AIM's leadership and staff convey a sense of a program with a clearly structured, clearly communicated vision that supports the goal of consistent implementation across diverse sites. The program reflects both a high level of staff commitment to the people they serve and to continuous quality improvement. The awardee has piloted and refined a set of protocols to launch each site, as well as procedures for monitoring and evaluation that rely on site reporting back to the central leadership.

AIM embeds dedicated staff at multiple points throughout the Sutter Health system (hospital, provider offices, home health and hospice) and "borrows" staff from multiple locations within the system. This allows them to build relationships with non-AIM providers facilitating the care coordination that is a hallmark of AIM, as well as recruitment of eligible individuals into the program. Within the overall framework of the AIM program model, each site presents a distinctive mix of services, staffing, and relationships with providers that reflect the site's history, for example, differences connected with anchoring the program under a home health license (Modesto) rather than a site where core team members are affiliated with hospice as well as home health (San Leandro). In the case of the Modesto site, which has been launched under the HCIA funding, AIM appears to benefit from existing close relationships that the host home health agency has with local physicians and other home health agencies. Modesto leadership describes priorities related to making patient-centered goals central to care and providing support to caregivers.

Providers outside of the Sutter Health system may hesitate to join AIM, either to refer patients for participation or to become part of an AIM team, due to lack of knowledge about the AIM program and the fact that they are not reimbursed for their participation in care coordination.

Both AIM staff and caregivers have identified a need for pharmacy and mental health consultations.

Pharmacy. Nurses conduct medication management, together with the patient's primary care provider, and the full AIM team participates in review of medications during regular case conferences. Two AIM sites are piloting the addition of a clinical pharmacist, with promising early results.

Mental and behavioral health. AIM eligibility criteria appear not to include much of the population of patients with Alzheimer's, dementias, neuromuscular disease, and other slowly progressive disabling conditions, given the relatively short time frame and exclusion of care

coordination with skilled nursing facilities. However, caregivers report significant challenges related to anxiety, depression, and adverse changes in behavior, where access to specialty care and coordination with a patient’s participation in AIM would be desirable.

AIM staff has also identified affordable, suitable housing as an unmet need, with the risk of homelessness presenting a potential barrier to participation; at least one site is piloting a version of AIM with a medical shelter. In addition, other non-medical needs identified by caregivers include durable medical equipment (e.g., eyeglasses, hearing aids), personal care services, and State Medicaid (IHSS) funding to support a family caregiver.

Program Effectiveness

NORC’s evaluation uses quantitative assessment to answer most questions about program effectiveness, related both to the core outcome measures used with all awardees and supplemental measures specific to Sutter Health’s Advanced Illness Management (AIM) program.

Additional data that inform our understanding of program effectiveness are gathered through the site visit, review of survey findings, telephone interviews with the awardee, and review of program documents. At a site visit focus group, caregivers provided a positive review and experience of the intervention. With this population there is a balance between providing treatment and preparing patients for the next step in their care, which is often hospice. AIM is credited with offering clinical and emotional support to patients and their families. Caregivers expressed that they felt more confident in their abilities as a caregiver and liked being able to phone “experts” when assistance is needed. The connections AIM made on behalf of their enrollees and their families made typically difficult transitions to hospice more “peaceful.” Caregivers reported being surprised by the personal attention they received from AIM staff. Many credit the AIM program with starting the conversation around end of life care including advanced directives, care goals and hospice.

Interestingly enough, although Sutter Health promotes a clear message among its staff about the AIM pillars of care and what is involved in the intervention, caregivers appeared not to distinguish AIM as a care coordination program only and considered AIM to be a piece of home health and health services delivery, talking about AIM as an all-inclusive benefits package similar to hospice, where all care would be managed and delivered by AIM. AIM was credited with all the services, both positive and negative. However, the intervention facilitates care management and is limited in its care delivery capabilities.

Sustainability, Replicability, and Scalability

Sustainability will depend on revenue sources either internal to Sutter Health or external (Medicare) beyond the end of HCIA funding. The limits of Medicare's home health and hospice benefits, and of the mismatch between personal care needs and what is funded under Medicare's home health and hospice benefits, have spurred the creation of AIM, to coordinate care that bridges these gaps in benefits for a population with advanced care needs but not yet ready for hospice.

Through its experience with the HCIA-funded demonstration, Sutter Health is in the process of testing the feasibility of scaling up the AIM program to a total of 14 sites within the Sutter system. Although all sites are anchored by providers that are part of Sutter, implementation differs by site, reflecting the needs and resources of the location. Standard protocols have been developed and piloted for launching AIM at a new site, with oversight from Sutter Health's central program office. This could make the model replicable in other locations beyond the Sutter Health Corporation, either within the State of California or elsewhere.

Data Sources and Analyses

Site Visit

A team of three NORC staff visited the AIM program on May 12 and 13, 2014. Site visit activities included interviews with project leadership at each of two locations visited (San Leandro and Modesto), the launch team for the new Yuba City site, the training program, data staff, the intake nurse, the tele-support nurse, and a non-Sutter physician who refers patients to AIM; focus groups with Home Health and Transitions team members and with family caregivers; and observations of case management conferences, the work of hospital liaison nurses, and home visits.

Survey

Sutter Health is not currently fielding a formal *workforce trainee* survey, although the awardee plans to field a Team STEPPS questionnaire on a quarterly and annual basis, using an online mode. NORC is exploring the possibility of fielding a stand-alone survey in partnership with Sutter Health.

Before HCIA funding, Sutter Health began fielding a survey of *patient satisfaction* with AIM 2.0. This survey was administered by phone at 30 days post-enrollment and again at 90 days post-enrollment, to a sample of 10-20 patients (or their caregivers) each week at the Sacramento and Roseville sites. During 2014, the awardee revised the protocol for the patient satisfaction survey, keeping the phone mode and administering the survey to all participants across all sites, at 60, 90, and 180 days post-enrollment. In

addition, the awardee now fields a survey of Patient-Centered Care for home health AIM patients, administered in-person at baseline (within seven days of enrollment) to all patients or caregivers, then again by telephone 90 days post-enrollment. NORC is exploring the option of receiving this survey data from Sutter Health in order to conduct an independent analysis.

Findings from surveys conducted in support of NORC's evaluation will be presented in subsequent reports to CMMI. See Appendix B for an update on survey development.

Secondary Data

NORC executed a Business Associate's Agreement with Sutter Health Corporation on April 3, 2014, and has been able to incorporate their data into this report.

References

Program Documents

"Chronic Care and Disease Management Improves Health, Reduces Costs for Patients with Multiple Chronic Conditions in an Integrated Health System." Verified by innovator on October 30, 2013; most recent update on August 13, 2014. Service Delivery Innovation Profile, AHRQ Health Care Innovations Exchange. Available at: <http://www.innovations.ahrq.gov/content.aspx?id=1696> .

Ciemins E, Stuart B, Gerber R, Newman J, Bauman M. 2006. An Evaluation of the Advanced Illness Management (AIM) Program: Increasing Hospice Utilization in the San Francisco Bay Area. *Journal of Palliative Care Medicine* 9#6: 1401-1411.

Gornet B. 2014. AMI Roll Out Planning and Overview of Service Area. Unpublished presentation for NORC. March 14, 2014.

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by Sutter Health, 4/30/2014.

HCIA Quarterly Report for Sutter Health Corporation Advanced Illness Management (AIM), for Reporting Quarter End Date 3/31/2014. Submitted by Sutter Health, 4/30/2014.

Sutter Health. AIM Program Manual. Version 6. Unpublished presentation for NORC. March 2014.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing, 2nd call. Sutter Health, February 18, 2014.

NORC. Interview (Telephone), Awardee Data Sharing. Sutter Health, January 30, 2014.

NORC. Interview (Telephone) and Webinar, Site Selection. Sutter Health, March 14, 2014.

NORC. Interview (Telephone), Survey. Sutter Health, April 1, 2014.

NORC. Site Visit. Sutter Health, May 12-13, 2014.

University Emergency Medical Services

This chapter presents NORC’s evaluation of the University Emergency Medical Services (UEMS) Better Health through Social and Health Care Linkages beyond the Emergency Department (HealthiER) initiative from program launch in December 2012 through August 2014. The program aims to reduce non-urgent hospital emergency department use by adults age 18 and older who are enrolled in or eligible for Medicaid or Medicare and who live in Buffalo, NY.

We provide initial observations about HealthiER based on a review of program documents current through the awardee’s seventh quarterly report CMMI, a series of telephone interviews with the awardee, and a site visit that NORC conducted in May 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in summer 2015.

Overview

CMMI Category for Awardee:	Emergency Medical Services (EMS) Provider
Funding Amount:	\$2,570,749
Launch Date:	12/27/2012
States Where Located:	New York

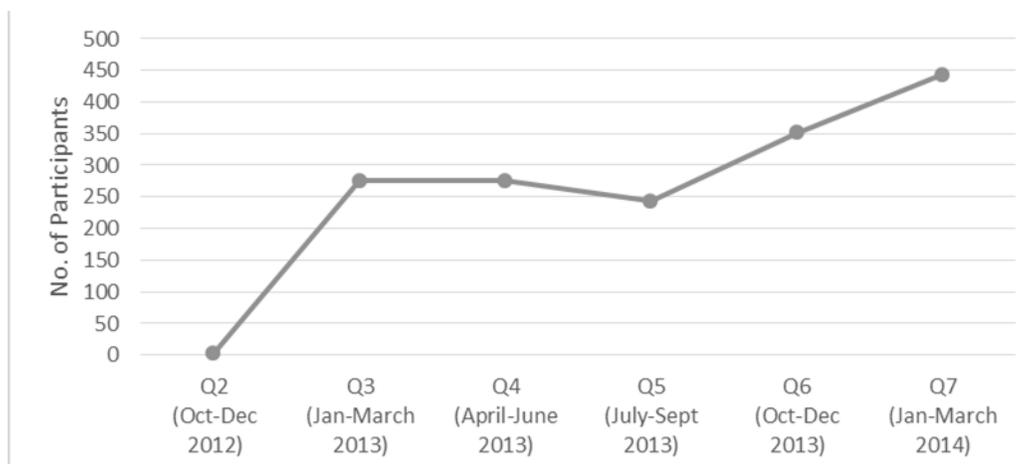
UEMS’s program uses a team of Community Health Workers to engage frequent patients at the Erie County Medical Center (ECMC) emergency department (ED) in developing their own health goals and care plans, navigating the health care system for primary and specialty care, and facilitating referrals to social and related services. The goals of HealthiER are to lower health care costs and improve quality of care by reducing non-urgent use of the emergency department and to improve health and well-being for low-income adult community residents by facilitating access to care (typically primary but also including specialty services) and engaging patients in actively managing their own health. Referrals to HealthiER are made by primary care practices as well as at the ED. Participants are adults eligible for Medicare or Medicaid who live in Buffalo, are not in a residential facility, and who had at least two visits to an ED in the past year. The Health Foundation of Western and Central New York has been a key partner of HealthiER and supports a comprehensive, multi-year evaluation of HealthiER by the University of Colorado.

The HealthiER project was inspired by the experience of the two project leaders –an emergency physician and a social worker –when both worked at the Erie County Health Department. Both shared the observation that Buffalo’s overcrowded hospital emergency departments served as de facto public health clinics for non-emergent care. In response, they designed the HealthiER model, with components including care coordination (primary and specialty), workflow redesign to enable referrals for prospective participants, and shared decision-making that is driven by a patient-centered care plan and ongoing patient involvement.

HealthiER focuses both on changing the behavior of individual patients and also changing how primary care providers, specialists, and hospital ED and in-patient units refer their patients for follow-up care. It relies heavily on community health workers (CHWs) whose functions include: recruitment and screening of prospective patients, through case-finding in the ECMC ED and referrals from primary care providers (physician offices, clinics); engagement with patients over a four-to-six month period, for intake and assessment; the development of a service plan based on patient-centered goals; facilitating access to care as well as to transportation and social services; phone access at all times to CHWs; and in-home coaching and education to help patients manage their own health and health care. HealthiER staff uses a dedicated electronic case management record system, Circe, to gather and track patient data, and are able to view but not modify the hospital EHR.

Self-reported data provided by UEMS reports cumulative participant enrollment by quarter (Exhibit UEMS.1). The graph displays an early increase in enrollment followed by two quarters showing a very slight decrease in enrollment, with a steady increase in the last two quarters. As of March 31, 2014, the cumulative enrollment in the UEMS program was 927 participants.

Exhibit UEMS.1: Total Number of HealthiER Participants, By HCIA Quarter



Context

UEMS is a non-profit practice plan, affiliated with the Department of Emergency Medicine at the University of Buffalo, which provides medical staff for three urban EDs in Buffalo, New York: Erie County Medical Center, Buffalo General Medical Center, and the Buffalo Veterans Administration hospital. ECMC is the academic medical center for the Erie County Medical Center Corporation, which also includes 30 outpatient specialty care services and a long-term care facility. HealthiER is being implemented within the context of major changes in the local health care marketplace (e.g., consolidation of hospitals and private practices), and in the New York State Medicaid program. With health care reform, New York's Medicaid program has created three Medicaid Health Homes that serve as a type of accountable care organization (ACO), with global budgeting, that include the patients targeted by HealthiER. These Medicaid Health Homes were launched around the same time as HealthiER (December 2012), although the two initiatives have not been coordinated. To the extent that HealthiER can forge a working relationship with at least one of the three Health Homes in the Buffalo area, the groundwork may be set for integrating HealthiER's case-finding and patient activation into the care management offered by the Health Home model.

HealthiER benefits from the strong and collaborative leadership of its executive director and project manager, who previously worked together at the Erie County Department of Health. The intervention also leverages the project manager's relationship with the Health Foundation of Western New York, which has sponsored her for a professional development fellowship, as well as organizational resources of the main project site, Erie County Medical Center.

Workforce: Staffing and Training

HealthiER employs both clinical staff and non-clinical staff; the project manager has an MSW, as do both staff supervisors, and the executive director has an MD, while outreach, patient engagement, and care coordination are carried out by experienced CHWs. Recruitment of the CHWs has benefitted from Buffalo's relatively depressed labor market, and many of HealthiER's current group of 10 CHWs have bachelor or master's degrees.

UEMS employs a formal, competency-based training program that includes 40 hours of classroom sessions that cover the topics of public health, health disparities, the role of the CHW, communications skills, and adult learning theory, as well as an additional 40 hours of training on cardiac health, diabetes, asthma, mental health, and substance abuse. CHWs also attend the host hospital's orientation to familiarize themselves with the hospital staff and programs with which they will be coordinating. After CHWs provided feedback that the classroom instruction did not adequately prepare them for the real

world scenarios they were likely to encounter, the training was modified to include a component that would allow new CHWs to shadow experienced staff and receive one-on-one training.

CHWs have reported experiencing stress from working in the ED environment, where they encounter patients in crisis and those who are actively dying. The CHW position is demanding on many levels; identifying the right individuals for the position is critical for the intervention's success. As a group, the CHWs have shared their perceptions of the challenges of integrating their efforts into the ED workflow and culture, where the focus of ED staff and physicians is on the current needs of patients rather than on follow up to consider participation in the HealthiER program.

Implementation Effectiveness

Project leaders have made several noteworthy changes since the December 2012 launch of HealthiER, to maintain fidelity to the intervention model. These changes include a narrowing of scope from two hospital sites to one hospital, after difficulties arose in establishing working relationships at Greater Buffalo, and a shift in CHW training from a formal, classroom-based didactic approach to a combination of shorter classroom lectures and shadowing of CHWs in the field. Project leadership described the prospective second site at Buffalo General Medical Center as in the midst of an organizational consolidation with layoffs taking place at the time when HealthiER was being launched.

Other aspects of implementation related to the core activities in the intervention concern referral relationships within ECMC and the loss of patients to follow up. Maintaining strong relationships with the Erie County Medical Center is fundamental to the success of HealthiER, and project staff is encouraged to refer patients to ECMC clinics for follow-up. However, there are potentially long wait times for scheduling an appointment, compared with availability at non-ECMC clinics. HealthiER staff is in the process of negotiating reserved appointment times at the four ECMC clinics for HealthiER referrals, in order to avoid delays. Timely access to care is of particular importance, given the loss to follow-up or participation of approximately half of enrolled participants over the four-to-six-month course of the intervention. For these reasons, it is difficult to assess the “dosage” of the intervention or to measure the quality of service delivery.

Finally, as described above, there have been multiple challenges involved in using CHWs in an ED environment. While HealthiER targets frequent visitors to the ED, the ED is a setting where one-time trauma and death can, and do, occur at any moment. The CHWs, with their community and patient empowerment orientation and training, are not professionally or emotionally prepared for engaging with patients amidst the active trauma experienced within the ED. While the ED appears to be an appropriate

location for identifying participants for the intervention, it can be a difficult environment for CHWs to navigate. In addition, there appears to be a relative lack of engagement between HealthiER staff and ED clinicians, with the CHWs reluctant to approach clinicians for the names of patients and a reliance upon the ED registrar and discharge staff (a social worker) for referrals. The appearance of CHWs involved in case-finding for Medicaid Health Homes (not affiliated with HealthiER) has added confusion about the roles and relationships of HealthiER CHWs in the ED environment.

Despite multiple challenges to implementation, HealthiER has the advantage of a robust self-monitoring and evaluation capacity and also benefits from being a relatively small, largely self-contained project with relative autonomy to make changes in its policies and procedures. HealthiER includes considerable self-monitoring through training/workforce satisfaction and patient experience surveys, the in-kind services of a medical anthropologist on the hospital staff, and an external rapid cycle evaluation. UEMS's surveys include a post-training survey for its CHWs, and a patient satisfaction survey (based on the Health Care Climate Questionnaire) that CHWs administer to each of their patients approximately six weeks after enrollment. The medical anthropologist offers ongoing consults on the development of outreach materials and strategies, both for patients and for health care staff at ECMC and partner organizations, as well as consultation on training materials. With funding from the Health Foundation of Western and Central New York, the University of Colorado is conducting a three-year, rapid-cycle external evaluation that combines elements of a process and impact evaluation and uses the same set of core measures as the HCIA evaluation, with active input into the intervention. For example, the project evaluator is producing a series of issue briefs that market HealthiER and inform implementation.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of ED visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. There is considerable overlap between NORC's design and that of the University of Colorado's ongoing evaluation, given similar data sources (Medicaid claims), the set of performance measures reported by UEMS, and similar analytic methods; Dr. Bethany Kwan and her team at the University of Colorado have generously shared their evaluation plan, program logic model, conceptual model, and related materials, and continue to make their findings available to NORC.

Claims and electronic health record data are not yet available for HealthiER. For this reason, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

HealthiER leadership is considering the feasibility of a change in the program's operational site, from within the hospital ED to location within primary care practices. With this change, HealthiER staff could continue to identify patients in the ECMC emergency department while strengthening their relationships with the primary care providers to whom they make referrals. Project leadership see HealthiER as a model that could be replicated in other urban hospital markets, given the consistent need for greater access to primary care and barriers such as a lack of transportation that lead many patients to delay care until a trip to the ED is made. The prospects for scaling HealthiER locally appear to be limited under the current organizational structure.

Sustainability also hinges upon reimbursement for the services provided by HealthiER. One approach may be for HealthiER to affiliate with a Medicaid Health Home organization as a short-term (3-6 months), patient engagement patient engagement intervention, with a warm handoff to the Medicaid Health Home. Another option for funding may be through the Erie County Medical Center, which is pursuing Medicaid funds that may be available under the State's Delivery System Reform Incentive Payment Program (DSRIP).

Data Sources and Analyses

Site Visit

A team of two NORC staff visited University Emergency Medical Services' HealthiER project on May 1 and 2, 2014. Site visit activities included interviews with project leadership, an Emergency Department physician, a health plan partner (Blue Cross Blue Shield), supervisors, and a HealthiER patient; a focus group with HealthiER's CHWs; and observations of outreach and patient engagement in the Erie County Medical Center Emergency Department. UEMS's external evaluator, the University of Colorado (UC), advised NORC as we planned the site visit, sharing background research on prospective interview respondents and summary findings from selected key information interviews conducted by UC. In addition, the UC team has offered to share data from its patient focus groups and has added questions to its focus group protocol at NORC's request. This coordination and collaboration between NORC and UC reduces the likelihood of contamination of findings from overlap of similar evaluation activities and increases the efficiency of the evaluation efforts.

Survey

University Emergency Medical Services fields a *workforce trainee survey* after the training, as part of quality improvement for the intervention and has offered to share data from this survey with NORC. Given the relatively small number of trainees (there are 10 trained community health workers and two supervisors) NORC is using the site visit interviews, the focus group, and observations as the source for primary data, in lieu of a trainee survey.

To measure *consumer experience*, UEMS and the University of Colorado have developed a patient satisfaction survey based on the Health Care Climate Questionnaire. The survey is administered in-person by a CHW approximately six weeks post-enrollment; all patients are given the survey. NORC is exploring coordination of survey efforts through proposing additional questions for UEMS's survey, with UEMS to field the coordinated survey and NORC to manage data cleaning and analysis.

Secondary Data

NORC executed a Business Associate's Agreement with University Emergency Medical Services on April 21, 2014. Data were not received in time for analyses included in this chapter. For subsequent reports, NORC will present results on the program's impact on measures of health, quality of care, utilization and costs for the Medicaid population served by UEMS's program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by UEMS, 4/30/2014.

HCIA Quarterly Report for University Emergency Medical Services, for Reporting Quarter End Date 3/31/2014. Submitted by UEMS, 4/30/2014.

University of Colorado, Anschutz Medical Campus. N.d.. HealthiER Assessment Codebook Sample. Unpublished document, 1 page. Provided to NORC by UEMS Buffalo, December 2013.

University of Colorado, Anschutz Medical Campus. N.d.. HealthiER Conceptual Model. Unpublished document, 1 page. Provided to NORC by UEMS Buffalo, December 2013.

University of Colorado, Anschutz Medical Campus. N.d.. HealthiER Evaluation Plan. Unpublished report, 21 pages. Provided to NORC by UEMS Buffalo, December 2013.

University of Colorado, Anschutz Medical Campus. N.d.. HealthiER Key Informant Interview Guide Fall 2013. Unpublished document, 3 pages. Provided to NORC by UEMS Buffalo, December 2013.

University of Colorado, Anschutz Medical Campus. N.d.. HealthiER Key Informant Interview Participants Update. Unpublished document (spreadsheet). Provided to NORC by UEMS Buffalo, March 2014.

University of Colorado, Anschutz Medical Campus. N.d.. HealthiER Patient Focus Group Guide 2013. Unpublished document, 3 pages. Provided to NORC by UEMS Buffalo, December 2013.

University of Colorado. Anschutz Medical Campus. N.d. HealthiER Program Logic Model, Unpublished document, 1 page. Provided to NORC by UEMS Buffalo, December 2013.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. UEMS, December 12, 2013.

NORC. Interview (Telephone), Survey. UEMS, April 2, 2014.

NORC. Site Visit. UEMS, May 1-2, 2014.

University of Arkansas for Medical Sciences

This chapter presents NORC’s evaluation of the initiative, “Cost Effective Delivery of Enhanced Home Caregiver Training,” sponsored by the Schmieding Center for Senior Health and Education at the University of Arkansas for Medical Science (UAMS) as part of the HCIA program. The program provides enhanced training for both family caregivers and other direct care workers to better manage the care of elderly adults in the home.

We provide initial observations about the UAMS program based on a review of program documents current through the awardee’s seventh quarterly report to CMMI (for the period January 1 through March 31, 2014), telephone interviews that NORC has conducted with the awardee, and a site visit to UAMS in March 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection nor formally analyzed the site visit and other qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Community College/Vocational Training
Funding Amount:	\$3,615,818
Launch Date:	3/25/2013
States Where Located:	Arkansas, California, Hawaii, Texas

The Schmieding Center for Senior Health and Education of Northwest Arkansas at the University of Arkansas for Medical Science (UAMS) received an HCIA award to provide enhanced training of both family caregivers and the direct care workforce to improve care for elderly patients requiring long-term care services, including Medicare beneficiaries qualifying for home health care services and Medicaid beneficiaries who receive homemaker and personal care assistant services. Inadequate training of the direct care worker has been shown to have a direct impact on the quality of care to the elderly, and by enhancing the training of the direct-care workforce, the awardee aims to better manage complex care needs in the home. This, in turn, would lead to fewer avoidable hospital admissions and readmissions, better preventive care, better compliance with care, and avoidance of unnecessary institutional care. Furthermore, the training enables direct care workers to meet new Arkansas requirements for home caregivers and to be employed, either independently or through home care agencies, by Medicare and Medicaid beneficiaries who receive long-term care and/or home care services.

The Schmieding Center was founded through a grant from the Schmieding Foundation, a foundation started by Lawrence Schmieding after he was inspired by his own search for a qualified caregiver for his brother. The Center has been offering caregiver training courses for the last 12 years, but for the HCIA award, the Center added a more advanced course to address chronic disease management, inter-professional teamwork, and advanced advocacy communication skills, as well as refining their traditional “Elder Pal” program into a more time-intensive course to meet new training requirements in the State of Arkansas for home caregivers. The award has also pushed the Center to increase access to these courses, which can be time-intensive, by placing them online and offering them across States. The Schmieding Center is collaborating with partner organizations in California, Hawaii, and Texas to scale up their home caregiver training as part of the intervention.

The program offers four courses in a “career step-ladder” format, with each course building on the previous ones, for a total of 116 hours of coursework. The four courses are:

- **In-Home Assistant (or PCA):** This course provides 40 hours of fundamental caregiver training, focusing on building skills in companionship, safety, and assisting patients 50 years or older in the home with activities of daily living. The course is broken up into ten modules, the first nine of which can be taken in any order, each consisting of lectures and labs, and culminating in a written and competency-based exam in module ten.
- **Home Care Assistant (HCA):** This course provides 60 hours of caregiver training in providing long-term care to patients in the home or in an LTC facility. The course takes place over a ten-day period, with each day focusing on labs and lectures, culminating in a written and competency-based examination on the sixth day and four days of orientation to a clinical site and an on-site assessment. The PCA course is a prerequisite to this course, and the HCA course is intended to build upon those concepts.
- **Alzheimer’s Disease and Dementia (AD):** This course provides 16 hours of caregiver training to provide care and disease management to patients with AD and dementia. The course takes place either over three full days or with five evening class days, consists of predominantly lectures, and culminates in a written final examination at the end of the course. This course can be taken independently of the other courses, and combined with the HCA and PCA courses, provides the training necessary to take the CNA exam.
- **Family Care Advocate (FCA):** This course provides 40 hours of advanced training on chronic disease management and patient advocacy, focusing on communication, health literacy, healthy living in the home, and disease-specific modules (CHF, stroke, diabetes, delirium/dementia/depression, and

falls). No course prerequisites are required, but the trainee must have experience with prior caregiver training.

Following the completion of In-Home Assistant, trainees have met new Arkansas State requirements for 40 hours of home caregiver training. In addition, trainees are qualified to take the State examination to become a CNA once they have completed the In-Home Assistant, Home Care Assistant, and Alzheimer's disease and Dementia courses.

Another important component of the Schmieding Center's HCIA award is the availability of microcredit loans to help students pay for the courses. Schmieding had developed an interest in microcredit loans, after reports from their partner organizations indicated that the population of caregivers they train is largely of lower socioeconomic status, and thus would not be able to afford the training courses if offered at full price (the courses are subsidized as part of the grant from the Schmieding Foundation). The awardee suggested that many of their students cannot obtain a loan (even a small loan), and may not be able to obtain a credit card, so microcredit was developed as a way to create a self-sustaining and revolving source of funding for students. The loans have a 5% interest rate, and participants are asked to pay it back throughout the next year. Leadership remarked that the attitude around the loans can be described as a "pay it forward by paying it back mentality," in which "there is a sense of community in letting others experience what you did by paying it back." As of the most recent quarterly report, microcredit loans have been adopted in Arkansas and Texas, with plans to distribute in the next quarter to the sites in California and Hawaii.

Over a three-year period, the UAMS program will train an estimated 2,100 workers and plans to create an estimated four jobs within UAMS. The new workforce will include a project manager, nurse educators and an administrative assistant. As of March 31, 2014, 1,844 caregivers have been trained. The majority resides in Arkansas (1,743), but there have also been caregivers trained in Texas (32) and Hawaii (21).

Context

The Schmieding Center is a partnership between the Donald W. Reynolds Institute on Aging (RIOA) at the University of Arkansas for Medical Sciences (UAMS) and Northwest Health System. UAMS is involved in administrative and oversight activities of the Schmieding Center, and the awardee suggested that actions made by the Schmieding Center are generally approved by UAMS.

The awardee reported that their intervention has been aided greatly due to the passage of a law in April 2014 requiring home caregivers in the State of Arkansas to have 40 hours of training. UAMS and Schmieding Center project leadership were very active in advocating for the new law on a training

requirement law within the State, as they argued that standardized certification and a better public understanding of the role of home caregivers are important. Many of the partners during the NORC site visit spoke highly of the training offered by the Center, and the Center staff suggested that because they offer a more extensive time commitment than required by the State of Arkansas for its curriculum (116 hours vs. 96 hours), the Center has been able to develop a strong reputation for a robust curriculum that has increased enrollment over time.

Although the project leadership feels there is a push to enroll caregivers in training, the team expressed concern over compliance with the law for some small agencies and independent contractors. Agencies may be risking consequences by employing untrained workers who have not fulfilled the requirements, but because of funding challenges within the State Department of Health, enforcement may not be strong, meaning that independent contractors may be able to “fly under the radar,” at least for a while. Project leadership thinks enforcement will come in future legislative periods, but for now the team reported that many agencies are “just taking their chances,” which limits the potential demand for professional training.

Workforce: Staffing and Training

Workforce training is at the heart of the UAMS intervention, as its goal is to train caregivers to better provide care for elderly patients, while also aiding in financing professional certification in the field. The courses themselves involve both lecture and hands-on laboratory components, and they often require both written and lab-based exams to pass the course.

Program leadership noted that good caregivers need to “know their boundaries, how to be creative, and how to use resources when in the home,” given that homes do not have the level of resources as nursing home or other living facilities. Leadership also reported that the caregiver job “seems deceptively easy,” as there is “a seductive notion that ‘Well, I’ve been dressing myself forever, I can dress somebody else.’”

Schmieding Center staff noted that one of the most important responsibilities of a caregiver is being able to communicate with a doctor effectively should the patient have a change of condition, especially given that many healthcare professionals are not fully aware of the scope of practice for home health. Workers are trained on the “stoplight” approach, which aids in increasing awareness of changes in condition, and the FCA course seeks to improve health literacy to help patients and caregivers better communicate with providers.

Implementation Effectiveness

This level of oversight by the UAMS administration has been one of the biggest challenges with regard to the HCIA award, as delays within the contracts department of the University have impeded the timeliness of some aspects of the award, particularly involving the distribution of microcredit loans. Additionally, there are challenges involved with attempting to implement the microcredit loans in different States and to ensure that curricula across States comply with State licensure requirements. In Hawaii, the education center has not been able to complete a grant agreement with UAMS, and they have proven reluctant to engage in the microcredit loan process because of the additional liability that the Community College would have to assume. In Texas, because the curriculum has not yet been approved for students to take the CNA exam upon its completion, the State is struggling to find caregivers interested in the program. In California, because there are minimal State training requirements for caregivers, demand for the curriculum for this population of workers is low.

Although UAMS/Schmieding had a well-developed training program prior to receiving the HCIA award, the need for a more advanced course on patient advocacy, communication with providers, and a focus on chronic disease management was realized. The FCA course was developed in response to this need, with the goal of the course to decrease health care costs through training on preventative knowledge. Take-up on this course has been slow, however, with project staff explaining that this course is not required by the State of Arkansas and does not necessarily increase a home care aide's pay scale.

In February of 2014, UAMS launched its distance learning component, allowing caregivers to take some of the training courses online. As of the most recent reporting quarter, IHA is available online and the EP, PCA, FCA, and AD courses will be launched by 2015. Course manuals have been distributed successfully to all the replication sites.

While the courses have a reputation for providing superior training for CNA-level staff or home caregivers, the additional career options for students who take the courses are limited, as none of the courses may be used towards a higher education degree. Further, caregivers are not guaranteed employment, nor are they placed, but the Schmieding Center does offer a caregiver registry for independent contractors.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. For UAMS, claims-based or EHR data is not available, as the awardee does not interact directly with or deliver services to patients; the intervention consists of training for direct care workers, who are hired either through home health agencies, home care agencies, or as independent contractors.

Data that inform our understanding of program effectiveness for UAMS will come from two sources: the site visit and a workforce survey being fielded by NORC with cooperation from UAMS. Once the survey has been fielded and data are available, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

Given some of the challenges involved with State legislature requirements, subsidies, and microcredit loan sustainability, the UAMS project will face challenges with scaling up. With regard to the legislative requirements for home caregivers, the awardee discussed potential confusion among a public who is unaware of the scope of practice for home caregivers; it is possible that with the new law in Arkansas these issues could come to the forefront. However, without an approved curriculum in other States, the demand for the courses will likely be lower, unless the courses can demonstrate a significant salary bonus from the certification.

Future NORC reports will aim to assess sustainability, once UAMS is able to complete implementation to other State sites and fully implement the distance-based learning program.

Data Sources and Analyses

Sources for this report include program documents, awardee reported to CMMI, telephone interviews with the awardee, and a site visit.

Site Visit

A three-person team from NORC visited the UAMS Schmieding Center on March 17 and 18, 2014. Site visit activities included interviews with project leadership, the Schmieding Center staff, the manager of a local Home Care Agency; phone interviews with intervention site directors in California, Texas, and Hawaii; and focus groups with family member caregivers and with trainees.

Survey

UAMS fields a survey of *workforce trainee experience*, both before and after training, but does not field a *consumer and caregiver experience survey* as part of its intervention.

NORC is collaborating with UAMS to design, field, and analyze an original workforce trainee survey to capture new information on trainee experience and workforce experience. Since it is not feasible to identify a representative sample of consumers served indirectly by this training intervention, the survey will seek to measure key aspects of consumer experience as reported by trainee respondents. The survey will include a sample of UAMS trainees and a comparison group of trained direct care workers in Arkansas who have not received the Schmieding Center training offered under the HCIA grant. The goal for completed interviews in each group is 500. Home care agencies identified by UAMS will be approached to request their assistance in identifying and recruiting prospective respondents. The survey will be administered by phone. The survey instrument was pre-tested with several direct care workers and revised based on their feedback. The survey will be fielded in waves beginning in early August 2014.

Secondary Data

No data sharing agreement is being established. A data sharing agreement is not needed with UAMS because NORC is not conducting a patient-level study. As the UAMS program focuses on developing and training a new workforce, the awardee is unable to identify the clients ultimately affected by their intervention. Thus we will not be evaluating the impact of UAMS's program on Medicare and Medicaid beneficiaries directly.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarterly End Date 3/31/2014. Submitted by UAMS, 4/30/2014.

HCIA Quarterly Report for University of Arkansas for Medical Sciences (UAMS), for Reporting Quarter End Date 3/31/2014. Submitted by UAMS, 4/30/2014.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Data Sharing. UAMS, January 7, 2014.

NORC. Interview (Telephone), Survey. UAMS, April 1, 2014.

NORC. Interview (Telephone), Survey, 2nd call. UAMS, May 14, 2014.

NORC. Site Visit. UAMS, March 17–18, 2014.

University of Iowa

This report presents NORC’s evaluation of the University of Iowa Hospitals and Clinics’ (UIHC) program as of August 2014. The UIHC involves a partnership with 10 rural critical access hospitals (CAHs) in nine counties to reduce post-discharge ED visits and hospital readmissions for adult patients.

We provide preliminary observations about the program based on a review of awardee documents current through the awardee’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014), telephone interviews with the awardee, and a site visit that NORC conducted in June 2014. While this report presents themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection or fully coded and formally analyzed the data collected from the site visit. We expect to have more definitive findings and results for the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Academic/University
Funding Amount:	\$7,662,278
Launch Date:	2/18/2013
States Where Located:	Iowa

The University of Iowa Hospitals and Clinics (UIHC) is working in partnership with 10 rural critical access hospitals (CAHs) in nine counties to reduce post-discharge ED visits and hospital readmissions for adult patients through the deployment of nurse-led transitional care teams (TCTs) that facilitate the transition of care from UIHC to patients’ homes, local CAHs, or skilled nursing facilities. The current project builds on UIHC’s prior work with the Iowa City Veterans Affairs Medical Center, which involved telehealth for the management of patients in intensive care units; telehealth home monitoring; nurse-led care coordination, using telehealth for rural patients with heart failure, COPD, and diabetes; and the development of web-based personal health records. UIHC, located in the east-central part of the State, is a 705-bed academic medical center and is one of the largest hospitals in Iowa. Due to the resources and medical capability at UIHC, patients with complex health conditions are referred to UIHC from rural communities with limited resources for handling challenging cases.

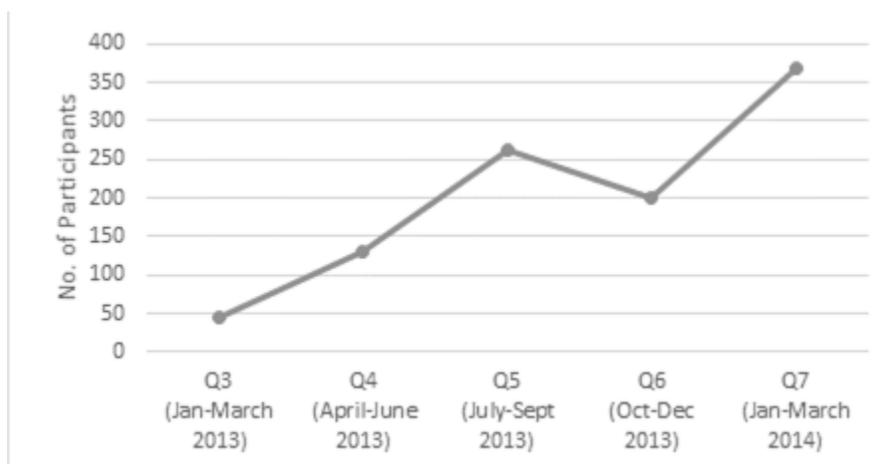
The four TCTs are comprised of a nurse, social worker, pharmacist, and physician located at UIHC, as well as a rural care coordinator located at each of the 10 rural CAHs which form the UI Critical Access Hospital Network. The TCTs include one team for patients with mental health conditions admitted for psychiatry services and three teams for patients with acute and chronic medical conditions. All patients

from the intervention counties admitted to UIHC are approached to participate in the intervention. The most common psychiatric diagnoses include: major depression, schizophrenia, schizo-affective disorder, bipolar disorder, personality disorder, and alcohol dependency and withdrawal.

The TCTs coordinate care with the patient's primary care provider and rural care coordinator, using telehealth and eHealth to share health information between facilities and team members. The intervention is designed to track and provide appropriate follow-up care to patients for 30 days, with some patients disenrolling from the intervention before or after this 30-day time period, depending on the patient's needs. Some patients are also re-enrolled in the intervention if they are re-hospitalized at UIHC. Before a patient is discharged back to the community, the TCT nurses at UIHC conduct "virtual" handoffs with the rural care coordinator, using handheld electronic tablets and videoconferencing software. These videoconferences facilitate a meeting between the patient, the inpatient care coordinator, and the rural care coordinator. The rural care coordinator is introduced to the patient directly so that the patient can put a face to a name before their first encounter. During this meeting, the participants plan for the rural care coordinator's follow-up home visit with the patient within 72-hours of discharge. The program also reconnects the patient with their rural primary care provider (PCP) or, for patients without one, identifies a local PCP for post-hospital follow-up. Reconnecting patients to their local PCP or establishing for the first time a connection to a PCP in the rural community is important for continuity of care and for preventing potentially unnecessary hospital readmissions or emergency room visits.

UIHC uses several web-based applications to increase care coordination and the exchange of information between the UIHC-based TCT members and the rural care coordinators. UIHC and the rural care coordinators are also able to share patient information using the web-based application Research Electronic Data Capture (REDCap). REDCap allows rural care coordinators to document and track patient progress and to share notes about patient care and needs with the TCT based at UIHC. UIHC has also deployed the "Carelink" and "Hyperspace" functions within its Epic electronic health record. These web-based portals allow rural care coordinators to access UIHC's Epic electronic medical record (EMR) for information about participating patients only. Carelink only allows users to view the last patient encounter – users cannot see patient encounter history, but it allows users to upload documents. In contrast, hyperspace allows users to view encounter notes from the previous 90 days, but it does not allow users to upload documents.

Self-reported data from the University of Iowa report enrollment by quarter, shown in the graph below (Exhibit UIHC.1). As of March 31, 2014, the Transitional Care Team program had served a cumulative total of 896 patients since program launch.

Exhibit UIHC.1: Total Number of UIHC Participants, By HCIA Quarter

Of the 369 patients directly served during the most recent reporting quarter (QR 7), the gender split was almost equal (51% female vs. 49% male), most of the patients were adults between the ages of 26-64 (55%), and most were covered by either Medicare FFS (49%) or private insurance (22%).

Context

The UIHC intervention is being led by staff knowledgeable and experienced in the area of telehealth, eHealth, care transitions, rural health, CAHs, and chronic disease management. In addition, the program leadership team has strong health services research experience. The program leadership team consists of the following members: Gary Rosenthal, MD, Principal Investigator ; Carolyn Turvey, PhD, who oversees the telemedicine and telehealth components; Kevin Glenn, MD, Internal Medicine lead; and, Linda Abbott, RN, MSN, AOCN, CWON, care coordination lead. All of the program leaders have extensive experience implementing the various components of the intervention.

Based on our discussions with the rural care coordinators, other CAH staff members, and the UIHC staff, it is evident that the relationships the rural care coordinators developed with the intervention participants, partner organizations in their communities, and members of the care team at UIHC have been instrumental to the progress the awardee has made with the intervention. The success of the intervention is predicated on the rural care coordinators' ability to accomplish the following tasks: develop a trusting relationship with patients; identify the underlying health care and social service needs of the patients; teach self-management practices to the patient; build strong ties to community organizations which can help supply necessary resources (e.g., Meals on Wheels); and, effectively communicate with intervention staff at UIHC.

An important consideration for the intervention moving forward is the increasingly challenging financial circumstances faced by CAHs. As described by the UIHC staff and CAH leadership, the average number of acute care admissions to the CAHs is declining while the proportion of total patient revenue from Medicare and Medicaid is increasing. The utilization decline and payer mix challenges noted by the Iowa CAHs are comparable to other CAHs across the country. Data from the Iowa Hospital Association show that acute patient days per year have been declining at the 10 CAHs participating in the intervention from 2007 to 2012, with the average acute patient days per year dropping from 2,601 inpatient days in 2007 to 1,817 in 2012.²⁵ Part of the decline in patient admissions per day is due to population declines in these rural areas and from increases in outpatient procedures. Some of the CAHs in UIHC's network may need to alter their delivery structure or explore other reimbursement models (e.g., join an ACO) to maintain profitability over the next several years.

Workforce: Staffing and Training

As of March 2014, the latest administrative report, staffing included one behavioral/mental health worker, four IT technicians/specialists, six management or administrative staff, seven RNs, two nurse practitioners, one pharmacist, four physicians, and two social workers. UIHC transitional care teams are led by a nurse coordinator and consist of a physician, social worker, rural care coordinator and clinical pharmacist. Training is interdisciplinary, as each transitional care team goes through extensive workforce training on how to coordinate post-discharge care and care coordination. Training is conducted through a series of distance learning courses including Transitions of Care Orientation (6 hours), Care Coordination Workforce Development Program (3 days), and shorter units on specific conditions (congestive heart failure, diabetes, mental health services, and health and wellness). The Transitions of Care Orientation includes a discussion of the intervention and training on telehealth components such as REDCap, Carelink, Hyperspace (the web-based patient reporting and tracking applications), and videoconferencing. Training also includes Chronic Disease Self-Management and population management strategies, as well as patient safety issue reporting.

The 3-day training on Care Coordination, which has been attended by 46 individuals, including members of the TCT and other staff at UIHC engaged in transitions of care, covers the following key concepts: evidence-based care; ACOs; medical homes; care transitions; the components of effective care coordination and communication; common medical and mental health conditions; motivational interviewing; medication management; and patient education, among other topics. Training is also

²⁵ Iowa Hospital Association. 2009. *Profiles: Documenting the Social and Economic Importance of Iowa Hospitals and Health Systems*; Iowa Hospital Association. 2010. *Iowa Hospital 2008-2010 Total Facility Utilization Data*; Iowa Hospital Association. 2012. *Iowa Hospital 2012-2012 Total Facility Utilization Data*.

reinforced through ongoing huddles that focus on a particular subject matter, as well as monthly videoconferences for reviewing best practices, training materials, and case studies. An annual session is used to serve as a refresher for all employees involved in the intervention and others involved in care coordination.

UIHC is planning on using carry-over funds to develop an online version of the 3-day training and make it available to other HCIA awardees, with plans to make the training also applicable for programs outside the scope of HCIA. The online training would use care coordination case studies as a learning tool, where trainees would develop case studies on care coordination based on their own experience that would then undergo peer review from other trainees. Survey data showed that the training was well received with the 46 individuals that completed the training providing an average score of 4.65 out of 5. In addition, attendees were surveyed before the training and six months after the training to assess how knowledgeable they felt about transitioning patients, coordinating care, and telehealth, among other components. Trainees reported feeling much more knowledgeable about all of these components.

UIHC staff reported that turnover is very low, including among the rural care coordinators.

Implementation Effectiveness

Although NORC staff visited just two of the 10 CAHs, UIHC reported that the project interventions have been fully implemented and are consistent across sites. Patient participation in UIHC's intervention is on track. Following lower than projected direct participants in the sixth program quarter (199 participants and 313 projected), UIHC exceeded projections in Q7 with 369 participants (313 projected). Through Q7, UIHC has provided services to 896 cumulative participants and are projected to serve 1,200 through Q8 and 1,085 additional participants over the next four quarters until June 2015. UIHC is enrolling, on average, a total of 120 participants per month from the nine rural counties in their intervention. During the site visit, UIHC noted that some patients are participating in the intervention multiple times (i.e., they were discharged from UIHC, participated in the intervention in their home rural community for the 30-day post-discharge monitoring period) but are admitted to UIHC at a later time, triggering re-engagement in the care coordination program. As of Quarter 8, more than one quarter of enrollees re-engaged in the program following a second UIHC readmission.

The three TCTs coordinating care for chronic conditions had originally intended to dedicate each of the three teams (the fourth team being the psychiatric team) to three specific CAHs, wherein each TCT would specialize in providing services to three specific groups of patients: 1) Cardiology and Kidney Disease; 2) Cancer; and 3) Geriatric, Endocrine, and Gastrointestinal Diseases. However, soon after implementation,

UIHC determined that it was inefficient to dedicate TCTs to specific CAHs and limit their care to the three specific patient groups. Instead, the TCTs now provide coordinated care for all discharged patients with chronic conditions, and will do so for patients from any participating CAH.

UIHC also reported that the number of contacts per mental health patient is increasing over time, possibly due to rural care coordinators' feeling more comfortable working with, and delivering care to, patients with mental health diagnoses. One of the primary barriers mental health patients face is affording medications. The UIHC psychiatry team takes the affordability of medications, given a patient's health plan coverage, into account and prescribes accordingly.

The rural care coordinators NORC spoke with (from the Henry County Health Center and Van Buren Hospital) related how the often difficult life circumstances of their patients led to frequent admissions to the emergency departments and hospitals. For example, one patient could not afford adequate food to properly manage Type 1 Diabetes, so the rural care coordinator connected the patient with the community food bank to secure immediate access to food and linked her to SNAP for a longer term solution. One patient, while hospitalized, revealed he was homeless and thereby unable to follow any systematic discharge plan. The inpatient TCT team worked with the rural care coordinator who then engaged the local HUD resource and worked with the churches in the community to help furnish an apartment for the patient.

In addition to the strong relationships the rural care coordinators develop with patients, the CAHs also focus on the broader population health needs of their communities. Henry County Health Center, for example, holds the contract for the county's public health services. As a result, the Henry County Health Center offers the following wellness activities to patients: immunizations; health maintenance visits; and mental health programs. Henry County Health Center also promotes activities that support the community members to remain healthy and independent in their community, such as transportation assistance and home care assistance (e.g. meal preparation and light housekeeping). One of the CAH CEOs we spoke with talked about his responsibility to improve the health of the local community and expressed a strong sense of obligation to provide quality care to his community. When the CAH staff members were asked about their motivation to join this project, they commented that they saw a real need to improve the transition of patients back to their communities from UIHC and to ensure that their patients receive excellent follow-up care.

One of the challenges identified by both UIHC staff and the rural care coordinators is that some patients will agree to participate in the intervention right before they are discharged (i.e., agree to follow-up with a

rural care coordinator), but then once they are home in their rural community, will not participate in a follow-up visit. Securing “buy-in” from patients who initially agree to participate and then decide not to participate once home remains a challenge for a number of reasons, including that patients may be overwhelmed when they get home or believe they do not need any “outside” assistance. Initial observations of the “virtual” handoffs during patients’ hospital stays, where patients are able to see the rural care coordinator, seem to have improved patients’ participation in the program.

The UIHC program relies extensively on health information technology tools. In addition to using several web-based applications to coordinate patient care and track patient progress through the intervention, UIHC staff use telehealth components to communicate effectively with patients and providers in rural areas. Before the patient is ready to be discharged from UIHC back to the rural community, a member of the UIHC transitional care team, the patient, and sometimes a patient’s family member will conduct a videoconference (e.g. Skype) using mobile or laptop devices with the rural care coordinator. These “virtual handoffs” have been important for introducing the rural care coordinator to the patient, building rapport between the patient and the rural care coordinator, and increasing the likelihood that the patient will be willing to complete a follow-up visit with the rural care coordinator.

The pharmacists on the UIHC TCT are also conducting virtual home visits using Skype to conduct medication reconciliation on the patients’ prescriptions. The visual call, as compared with a regular phone call, allows the pharmacist to see the patients’ prescriptions, including drug names, dosage, and dates, and has helped determine which prescriptions are out of date or conflict with new medications, and whether any medication should be removed. The pharmacist reported that one patient had placed all of her medications in a bowl and was then trying to identify which pills to take each day, based on what the pills looked like. In this case the pharmacist was able to walk the patient and rural care coordinator through the steps needed to dispose of the old medication and obtain new medication that could be appropriately identified. The pharmacist noted that if she had not been able to visually see how the patient actually managed her medication at home, no one on the treatment team would have learned about these issues.

UIHC is also in the process of establishing psychiatric video-conferencing for rural patients, which would allow UIHC psychiatrists to provide psychiatric care to rural participants unable to meet with a psychiatrist in their community. Iowa has a severe shortage of psychiatrists and mental health professionals (ranking 45th nationally for psychiatrists per capita) which leaves many mental health needs unmet. UIHC has also established video-conferencing in two CAH emergency departments (EDs), often referred to as e-Emergency, with plans to add video-conferencing to the other EDs over the next year, in

order to allow UIHC ED physicians to provide consultation to CAH ED physicians when they encounter patients with complex conditions. Rural CAH EDs are usually covered by a family physician or a mid-level provider who does not have extensive ED training. The e-Emergency system provides “backup” to the rural ED provider and the UIHC ED e-Emergency consultation may eliminate the need for a transfer to UIHC which results in lower costs and the patient being able to remain in their home community.

While technology greatly benefits the effectiveness of the intervention, there have been a few challenges to implementing the various eHealth and telehealth components. For example, it took time to implement the technology components. The UIHC team reported that they had not anticipated the time needed to ramp up and roll-out the web applications to track patients through the intervention, and this was not built into the implementation schedule at the very beginning of the program. Due to delays in implementing one of the web-based applications (REDCap), data on some of the participants enrolled in the intervention in the first few months was lost. The project also faced some difficulty using Carelink, one of the web-based applications used to access Epic EHR records, because Carelink is only able to pull up the last patient record in Epic. As a result, the UIHC project team implemented Hyperspace, another web-based application that allows users to access Epic EHR records from the last 90 days. In addition, patients in rural areas have faced difficulty using patient portals due to limited internet connections and ability to navigate online. Virtual handoffs may have increased the rate of patients participating in the intervention because patients are able to form a bond with the rural care coordinator when they can see them; however, transitional care nurses reported that they found it difficult to schedule and coordinate these handoffs. The nurses needed to make sure that the patient was available, the rural care coordinator was available, and that Skype was functioning well at both UIHC and the CAH. Disruption in transmission or quality of the Skype calls was not uncommon.

Program Effectiveness

NORC’s evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. We expect to have claims and other program administrative data for University of Iowa in house for analysis shortly, and will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

UIHC is not conducting patient satisfaction surveys, but is instead obtaining patient experience information via anecdote from the rural and UIHC care coordinators. UIHC is exploring the possibility of comparing intervention participants and a comparison population using H-CAHPS survey data.

Sustainability, Replicability, Scalability

UIHC's plans for sustaining the intervention after CMS funding for the intervention ends in June 2015 are uncertain at this time. Project leadership mentioned that UIHC will likely continue to fund some of the rural care coordinators at CAHs with higher volume and higher re-admission rates, but funding for all rural care coordinators might not be continued. Intervention leaders mentioned efforts underway to find ways to sustain core elements of the program based at UIHC after HCIA funding ends. One option is to reallocate funding for a few patient navigators at UIHC to a few rural communities. When asked about the development of an accountable care organization (ACO) model for UIHC and the CAHs, project leadership reported that the development of an ACO has been ongoing.

While the UIHC project team noted that an ACO model for sustaining the program may not be likely, it is important to note that UIHC is participating in two ACOs and the Governor and other State leaders are hoping to develop statewide multi-payer ACOs in the next few years. In July 2012, CMS approved MercyCare Community Physicians and UIHC's application to operate as an ACO, forming the Mercy-CR/UI Health Care ACO. This Medicare ACO, part of the Medicare Shared Savings Program (MSSP), covers approximately 17,000 beneficiaries from 10 counties around Iowa City and Cedar Rapids.²⁶ In May 2013, UIHC also joined Mercy Medical Center in Cedar Rapids in establishing a commercial ACO. This ACO covers approximately 12,700 beneficiaries in the surrounding area.

In April 2013, Iowa began a State Innovation Model (SIM) Cooperative Agreement with CMS to develop statewide multi-payer ACOs that will include the State's largest commercial payer, Wellmark, which covers 1.7 million individuals, in addition to Medicaid and Medicare.²⁷ Together, these three payers cover 86 percent of Iowans. Iowa will also seek, through the SIM award, to develop a rural ACO model. The work that is being undertaken as part of this SIM Cooperative Agreement may have considerable impact on the development of an ACO model to sustain UIHC's project over the long-term.

The UIHC has good prospects for scaling up or replication. Of particular importance for scaling or spreading the intervention, however, is ensuring that the individuals selected as rural care coordinators are

²⁶ Iowa House of Representatives. *ACOs and University of Iowa Health Care*.

²⁷ Iowa Department of Human Services. September, 2012. *State Innovation Model Cooperative Agreement: Iowa Model Design Application*.

personable and committed to the intervention. In addition, the TCT team members must be knowledgeable about both the tertiary and rural health care resources available if they are to be effective. Likewise, the success of this intervention is also predicated on the “buy-in” from the physicians at the tertiary care center and the primary care providers in the rural communities. Without such commitment this program will not succeed. While the technological components of the intervention can be readily scaled up or spread to other sites, hiring the right staff to coordinate care may be more difficult for other sites.

Data Sources and Analyses

Site Visit

NORC conducted a two-day site visit at the University of Iowa on June 16 and 17, 2014. The three-person NORC team conducted interviews with the project leadership staff, hospital leadership staff, project implementation staff including many members of the TCTs, the mental health team, data staff, the telehealth coordinator, and visited two CAHs. At the CAHs, interviews included the rural care coordinators and the CAH CEOs. NORC also conducted a series of calls with the awardee and the CMMI project officer prior to the site visit, and reviewed quarterly report documentation submitted to CMMI through the Lewin website. NORC is in the process of coding and analyzing the full set of site visit notes and will be linking coded thematic findings with quantitative data when available. Findings will be presented in NORC’s subsequent reports.

Survey

The University of Iowa Medical Center is not fielding a *workforce trainee survey*. Given the small number of providers in this intervention, NORC is using the site visit group discussions and interviews to gather primary data on workforce, in lieu of a survey.

As mentioned above, to measure *patient experience*, the Transitional Care Team Program has access to hospital CAHPS data from UIHC (Press Ganey) for a small, random sample of intervention participants. Aggregate data may be available to NORC. The TCT Program is specifically interested in questions related to the care transition process.

Secondary Data

NORC executed a Business Associate’s Agreement with the University of Iowa on May 13, 2014. At the time we began work on this report, we did not have the necessary agreements in place to receive data from Iowa. Since that time, we have finalized these agreements and look forward to presenting results on

the program's impact on measures of health, quality of care, utilization and costs for the Medicare and Medicaid populations served by Iowa's program.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by University of Iowa, 4/30/2014.

HCIA Quarterly Report for the University of Iowa, for Reporting Quarter End Date 3/31/2014. Submitted by the University of Iowa, 4/30/2014.

Interviews and Site Visit

NORC. Interview (Telephone), Awardee Progress Update. University of Iowa, January 2, 2014.

NORC. Interview (Telephone), Awardee Data Sharing Call. University of Iowa, January 17, 2014.

NORC Site Visit, University of Iowa, June 16 and 17, 2014.

University of New Mexico

This chapter presents NORC’s evaluation of the University of New Mexico’s Project Extension for Community Healthcare Outcomes (ECHO) ECHO Care intervention, from program launch through August 2014. ECHO Care uses an approach that the awardee describes as a telementoring care delivery model to increase access, improve quality, and reduce the costs of care for 1,250 high-risk adult Medicaid beneficiaries in New Mexico.

We provide initial observations about ECHO Care based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, the awardee’s website and related publications and social media coverage, and a series of telephone interviews with the awardee. While this chapter presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are preliminary at this point, as NORC has not completed all of its data collection, including the site visit, nor formally analyzed the qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to present more definitive findings and results in subsequent reports to CMMI.

Overview of Awardee

CMMI Category for Awardee:	Academic/University
Funding Amount:	\$8,473,809
Launch Date:	9/1/2013
States Where Located:	New Mexico

The University of New Mexico’s Project Extension for Community Healthcare Outcomes (ECHO) began as a pilot in 2003 to improve access to specialty care for underserved, mostly rural Hepatitis C patients in New Mexico, by means of video-facilitated consults for primary care physicians. Leveraging specialty care at UNM (the State’s only academic medical center), the ECHO model was expanded successfully to over 250 primary care sites in rural hospitals, prisons, health department offices, federally qualified health centers, and other underserved locations, with funding from the federal Agency for Healthcare Research and Quality (AHRQ) and matching funds from the State legislature that have become a permanent recurring allocation. A peer-reviewed study has documented comparable cure rates (viral response) for ECHO sites, compared with UNM’s Liver Clinic, and lower rates of serious adverse effects, and surveys of providers have reported positive findings related to professional satisfaction and lessened isolation (Arora, Thornton, et al., 2011). In 2009, ECHO received a multi-year \$5 million grant from The Robert Wood Johnson Foundation, supporting the addition of new clinical areas (asthma, diabetes, substance

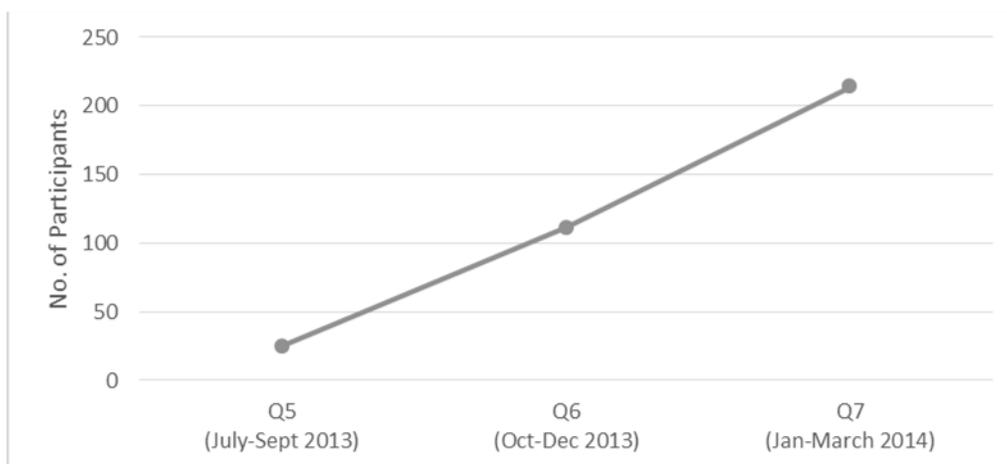
abuse, rheumatology, chronic pain, and high-risk pregnancy) to the existing model in New Mexico and replication of the ECHO model in the State of Washington.

With HCIA funding, Project ECHO has created ECHO CARE, turning its focus to serve adults enrolled in New Mexico's Medicaid program (managed care) with multiple chronic health conditions and higher-than-average utilization. Project goals are to improve access to specialty care and to reduce the costs of care for patients at greatest risk (top 7 percent to 10 percent) for future expenditures.

ECHO Care adapts the ECHO model, with plans to launch 10 community sites around the State, each staffed by an interdisciplinary group comprised of nurse practitioners or physician assistants, behavioral health counselors or social workers, nurses, community health workers, part-time administrative staff and a part-time physician, called an Outpatient Intensivist Team (OIT). These teams, recruited locally, are coached through the setup of an ECHO site and participate in both biweekly didactic teleconferences on specific topics and weekly videoconferences where each OIT presents cases to the ECHO Care specialty team, based at the UNM Medical Center in Albuquerque. Inter-professional teamwork is stressed, as is the use of clinical guidelines for managing chronic disease. Patients are referred by the community sites, and case-finding through Medicaid claims data is ongoing; subcontractor John Billings at New York University has worked closely with project leadership to develop clinical risk algorithms. Contracts with the State's Medicaid managed care vendors enables data collection for recruitment as well as web-based monitoring of outcomes. Self-monitoring and continuous quality improvement are part of the Project ECHO approach; there is an internal evaluation team that has designed and fielded training and provider surveys.

The first OIT launched in September 2013, followed by three additional OITs by the end of 2013 and two more OITs in January 2014. Self-reported data provided by Project ECHO displays the participants by quarter since the first OIT team began to work with patients (Exhibit ECHO.1), showing a relatively steady increase over time. As of March 31, 2014, the program has served 214 unique participants.

Exhibit ECHO.1: Total Number of Project ECHO Participants, By HCIA Quarter



Context

Regulatory and marketplace conditions in New Mexico have made implementation more challenging than anticipated. January 2014 marked a consolidation of the State’s Medicaid managed care organizations (MCOs)—from 6 to 4—necessitating the renegotiation of partnership agreements with Project ECHO. The inclusion of behavioral health within the MCO may offer new opportunities for care coordination and reimbursement.

The University of New Mexico’s academic health center in Albuquerque is the base of operations for Project ECHO, which appears to enjoy strong support and to have implemented successfully a series of ECHO model expansions in the years prior to the start of HCIA funding.

Workforce: Staffing and Training

ECHO Care provides multiple levels of training for the outpatient intensivist teams, to launch each site as well as to provide weekly and monthly learning and monitoring of care provided to patients; emphasis is placed on inter-professional teamwork. Hiring at a site is conducted locally, to bring together a multidisciplinary team that includes clinical and non-clinical staff. Training to prepare for launch involves a visit from the University of New Mexico-based project team to help set up the technology and in-person training for the outpatient intensivist team (OIT) at the University of New Mexico, where trainees shadow experienced staff and attend lectures designed around a social medicine curriculum.

Training is at the heart of ECHO Care, adapting from a program model in use prior to the HCIA funding. The University of New Mexico leadership hosts a weekly video-conference ECHO Clinic, where OITs present cases to the UNM specialty team and before the other OITs; in addition, there are biweekly video-

conference Complex Care Clinics, where members of OIT clinics participate in didactic presentations in their areas of focus (e.g., disease, social or behavioral issues, targeted group of high-risk patients). Continuing education credits are available.

ECHO Care is supported by a dedicated health IT system and software that enables communication between OITs and UNM and the sharing of case management notes and electronic health records. A web-based portal is used for entering data and for the UNM team to pull data for monitoring and evaluation purposes.

Implementation Effectiveness

NORC's site visit provided the opportunity to observe the process of launching and operating an OIT site, as well as the process of team-based and peer learning delivered through the weekly ECHO Clinic and biweekly Complex Care clinic. Project leaders report considerable differences in the organizational and cultural dynamics from site to site, depending on the host (e.g., hospital system or independent clinic), staffing mix, and local leadership, underscoring the value of Project ECHO's commitment to inter-professional training. To date, six of the 10 planned OIT sites have successfully launched.

In telephone interviews, project leaders have described a number of challenges that delayed the launch of the first OIT sites and that continue to inform the management of implementation overall. The State's revamping of Medicaid managed care contracting after the awarding of HCIA funding required a renegotiation of agreements previously in place with the Medicaid vendors; an accompanying change in behavioral health benefits has meant a reconsideration of how counselors are hired and reimbursed through the OITs and how data on behavioral health-related services are tracked. In addition, the development of dedicated project monitoring software has involved negotiations over data-sharing with Medicaid MCOs that are accustomed to competing with one another for enrollees, rather than collaborating to coordinate care. One of the biggest challenges identified by leadership has been the limited value of Medicaid claims data for patient case-finding, resulting in a slower-than-expected pace of recruitment into the program.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness have been gathered during the site visit and are

expected to be gathered from survey data. As of this report, NORC has not completed its site visit nor are survey data available, and we have not yet conducted an analysis with claims or electronic health record data. For these reasons, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI. See Appendices B and C for status updates on NORC's primary and secondary data collection and analyses.

Sustainability, Replicability, Scalability

The awardee has almost a decade of experience in successfully developing ECHO as a model within the State of New Mexico. The awardee has also served as an advisor on the replication and scaling up of ECHO by other academic medical centers, other States (Washington), nationally through the U.S. Department of Veterans Affairs and U.S. Department of Defense, and globally through projects in India. Sustaining ECHO Care, with its focus on serving high-risk Medicaid patients within New Mexico, presents ongoing challenges related to case-finding and to funding. Much of the infrastructure or platform on which ECHO Care rests has been supported through earlier, multi-year grants, as well as a permanent annual allocation from the State legislature. Both the State's Medicaid program and Project ECHO will have to contend with the financing implications of the recent introduction of an expensive new drug therapy for Hepatitis C. The NORC evaluation will explore the prospects for integrating the HCIA-funded focus on Medicaid enrollees, and the additional primary care community sites added under the HCIA grant, into the State-funded operation of ECHO. Alternatively, project leadership have noted the prospect for putting ECHO Care on a sustainable basis with an accountable care or global budgeting approach to Medicaid managed care contracting.

Data Sources and Analyses

Site Visit

NORC conducted a site visit to Project ECHO on October 6 and 7, 2014. NORC will code and analyze the full set of observational notes and will link these thematic findings to quantitative data when available. Findings will be presented in subsequent NORC reports to CMMI.

Survey

Project ECHO includes an internal evaluation team involved with the development and fielding of surveys, and related data analyses.

The University of New Mexico is developing a *workforce trainee survey* that incorporates self-monitoring measures that are already being collected. The awardee plans to field a web-based survey that will be

administered to all Outpatient Intensivist Team (OIT) members on an annual basis, with respondents to be anonymous.

At present, data from two separate surveys are used to measure *consumer and caregiver experience*:

- A questionnaire based on CAHPS and HEDIS measures is administered on an annual basis
- A survey about consumer engagement and motivation to change behavior is administered at enrollment (baseline), six months post enrollment, 12 months post enrollment, and annually. Patient identifiers permit comparison of data longitudinally.

Both surveys use a paper, mail-in mode, available in English and Spanish and in audio recorded form for patients with limited literacy. All enrolled patients are included in both surveys.

NORC is in discussions with the University of New Mexico regarding coordinating both the workforce trainee and consumer experience surveys by proposing additional survey questions and requesting data from the existing surveys for NORC's independent analyses as part of the evaluation.

Secondary Data

NORC executed a BAA with Project ECHO on April 25th, 2014. Data were not received in time for analyses included in this chapter. For subsequent reports, NORC will perform a pre-post analysis and will use comparison groups to analyze the data. NORC hopes to use the NYU Hospital Admission Predicting algorithm to identify individuals that would have been in the program if they resided in the demonstration region. NORC will then use a difference-in-differences approach to analyze the data.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by UNM, 4/30/2014.

HCIA Quarterly Report for the University of New Mexico (UNM), for Reporting Quarter End Date 3/31/2014. Submitted by UNM, 4/30/2014.

University of New Mexico. Website, at <http://echo.unm.edu/>. Accessed 8/18/2014.

Interviews

NORC. Interview (Telephone), Awardee Data Sharing. UNM, January 17, 2014.

NORC. Interview (Telephone), Awardee Data Sharing, 2nd call (John Billings, New York University). UNM, March 4, 2014.

NORC Interview (Telephone), Awardee Interview. UNM, January 17, 2014.

NORC. Interview (Telephone), Site Visit Planning. UNM, June 10, 2014.

NORC. Interview (Telephone), Survey. UNM, April 8, 2014.

Publications

Arora S, Kalishman S, Dion D, Som D, Thornton K., Bankhurst A, Boyle J, Harkins M, Mosely K, Murata G, Komaromy M, Katzman J, Collieran K, Deming P, Yutzy S. 2011. Partnering Urban Academic Medical Centers and Rural Primary Care Clinicians to Provide Complex Chronic Disease Care. *Health Affairs (Millwood)* 30#6:

Arora S, Kalishman S, Thornton K, Dion D, Murata G, Deming P, Parish B, Brown J, Komaromy M, Collieran K, Bankhurst A, Katzman J, Harkins M, Curet L, Cosgrove E, Pak W. 2010. Expanding Access to HCV Treatment – Extension for Community Healthcare Outcomes (ECHO) Project: Disruptive Innovation in Specialty Care. *Hepatology* 52#3: 1124-1133.

Arora S, Thornton K, Jenkusky S, Parisk B, Scaletti J. 2007. Project ECHO: Linking University Specialists with Rural and Prison-Based Clinicians to Improve Care for People with Chronic Hepatitis C in New Mexico. *Public Health Reports* 122 (Supplement 2): 74-77.

Arora S, Thornton K, Komaromy M, Kalishman S, Katzman J, Duhigg D. 2014. Commentary. Demonopolizing Medical Knowledge. *Academic Medicine* 89#1: 30-32.

Arora S, Thornton K, Murata G, Deming P, Kalishman S, Dion D, Parish B, Burke T, Pak W, Dunkelberg J, Kistin M, Brown J, Jenkusky S, Komaromy M, Qualls C. 2011 (Arora, Thornton, et al., 2011). Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers. *New England Journal of Medicine* 364: 2199-2207.

Hostetter M. 2009. Case Study: Project ECHO Expands Access to Specialty Care for Rural Patients. *Quality Matters*. New York: The Commonwealth Fund.

University of North Texas Health Science Center

This report presents NORC’s evaluation of the University of North Texas Health Science Center’s Brookdale Senior Living Transitions of Care initiative, from the time the program was launched until August 2014. The Transitions of Care program is adapting a set of quality improvement tools, the Interventions to Reduce Acute Care Transfers (INTERACT) suite, for use in skilled nursing (SNF), assisted living/memory care (AL), independent living (IL), and home health (HH) settings that are affiliated with Brookdale Senior Living facilities in multiple States.

We provide initial observations about the program based on a review of program documents that are current through the awardee’s seventh quarterly report to CMMI and a series of telephone interviews with the awardee. A site visit to the Austin, Texas headquarters was conducted on October 1st and 2nd, 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that all of the findings are preliminary at this point, as NORC has not completed all of its data collection, nor formally analyzed the qualitative, quantitative, and survey data to be used as part of our evaluation. NORC expects to present more definitive findings and results in the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Academic/University
Funding Amount:	\$7,329,714
Launch Date:	11/30/2012
States Where Located:	Florida, Texas, Kansas, Colorado

The University of North Texas Health Science Center (UNTHSC) partnered with Brookdale Senior Living, Inc. (BSL) to create the Brookdale Senior Living Transitions of Care Program (BSLTC). The program builds on a Care Transitions Program that BSL previously implemented in 11 skilled nursing communities across eight States. The BSLTC program broadens the scope of the earlier initiative by addressing care coordination between hospitals and residential settings beyond skilled nursing, including assisted living and memory care, independent living, and home health, and by scaling up to communities in four States (with a target of 67 communities). The program is implemented through a joint collaboration between UNTHSC and BSL. Currently, UNTHSC monitors and coordinates the overall project, ensures that staff is trained, and analyzes project data and outcomes, while BSL oversees the daily implementation of the program among residents in their multiple communities. BSL has over 1,000 living facilities in 45 States, which greatly expands the scope and potential growth of this project. The initial project locations are in Florida and Texas. In addition to Brookdale Senior Living, other project

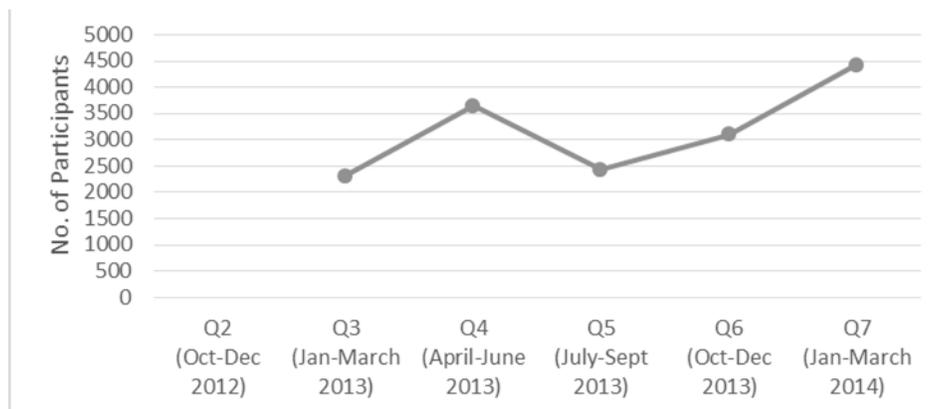
partners include Florida Atlantic University, FMQAI (a Florida Quality Improvement Organization), the University of South Florida, the New York Academy of Medicine, and Loopback Analytics.

Through integration of the INTERACT quality improvement tools into the clinical operating practices of Brookdale residential facilities, BSLTC aims to achieve the triple aim of improved health, higher-quality health services, and health care savings. INTERACT includes tools or modules to facilitate communications among clinicians and other facility staff, advanced care planning, decision support around care paths, and quality improvement. Implementation has involved oversight of development and launch at each site, including recruitment of partner referral hospitals, development of health IT to support the intervention, addressing the regulatory and marketplace characteristics at each proposed site, and broad-based INTERACT training for residential facility associates (staff) as well as residents and their caregivers in independent living settings. The BSLTC program uses nurses trained in quality improvement to facilitate training and implementation at each site. Timely access to data is an important part of BSLTC's implementation process, as the program relies upon in-house continuous quality improvement to inform rapid-cycle changes to implementation on an ongoing basis.

The target population consists of residents of Brookdale Senior Living communities: skilled nursing, assisted living and memory care, home health, and independent living in selected States, as well as residents who use BSL home health services. Most participants are Medicare enrollees, although some have other types of coverage. The original proposal to CMMI proposed to target 27 BSL communities and serve approximately 5,599 residents in Texas and Florida. Delays related to hiring resulted in the implementation of the BSLTC in 11 skilled nursing facilities and 2 assisted living communities during the first year and an expedited schedule planned for the second year of implementation. During year two, BSLTC was launched in a total of 10 home health agencies, 14 skilled nursing facilities, 46 assisted living/memory care facilities, and two independent living communities, with over 11,000 participants. For year three, expansion is planned for three additional independent living communities.

The most recent self-reported data from the awardee indicates that during the seventh quarter of the HCIA award period (January 1 through March 31, 2014), the Transitions of Care Program served 4,421 residents (Exhibit BSLTC.1). The graph indicates uneven growth as the program entered its second year, which may reflect shifts in the rate at which new communities were added to the program. NORC's evaluation will explore contextual and implementation-related factors that may explain this enrollment pattern.

Exhibit BSLTC.1: Total Number of BSLTC Participants, By HCIA Quarter



Context

Implementation of the BSLTC program involves navigating multiple sets of regulatory and marketplace considerations –including community leadership, licensing requirements, and availability of clinical staff –in each State where the awardee launches the program and in each type of residential facility for which implementation is planned. One set of regulatory issues, for example, may focus on using INTERACT to document the health status of a resident and communicate this information to a partnering hospital, invoking State-specific as well as federal data privacy requirements. Other potential variations across States affecting program implementation relate to the regulation of facilities and the scope of practice for BSL associates whose licensing or certification requirements are established by each State. While skilled nursing care requires a relatively high level of clinical staffing, patient data management, and serves patients with significant functional and cognitive limitations, new issues arise when the INTERACT model is extended to less intensive and clinical settings. Adapting INTERACT tasks and data sharing to settings with different staffing patterns and residents who function independently also raises new issues regarding participant recruitment and consent that may be regulated by the State.

One key implementation objective is making the intervention as unobtrusive and invisible as possible for the residents of the skilled nursing, assisted living, and memory care facilities, as well as a part of routine practice for independent living residents and their family caregivers. This objective will focus on having INTERACT wholly integrated into clinical systems, at the BSL community level. Although the self-effacing nature of the intervention creates some special evaluation challenges, the awardee anticipates that demonstrating the value of BSLTC, by collecting data on resident experiences and enhanced competencies of BSL’s workforce, will give BSL a marketplace advantage in recruiting new residents to its communities. Recruiting hospitals to participate in the BSLTC is another critical aspect of implementation, both for their participation in the use of INTERACT tools as well as their sharing of

resident utilization and cost data. Successful hospital recruitment will likely depend on demonstrating the value of the BSLTC program, especially for hospitals that have not historically had close working relationships with BSL partners.

In terms of organizational capacity and leadership, BSL has hundreds of residential communities across multiple States. This network brings considerable in-house experience in launching and monitoring programs across diverse settings as well as the capacity for continuous quality improvement. Currently, the awardee appears to be collaborating closely with BSL senior leadership on BSLTC program implementation.

Workforce: Staffing and Training

The original design for BSLTC called for a master's level Clinical Nurse Leader to lead the program at each community and home health agency. After reporting difficulty in hiring and maintaining a full complement of nurses with this credential and the requisite experience, project leadership modified the hiring criteria to recruit RNs with experience in health care quality. These Quality Improvement RNs are required to complete Certified Professional Healthcare Quality training. Each nurse leader oversees the use of INTERACT tools by the full range of BSL community associates (staff).

In its second year, BSLTC has launched sites in Colorado and Kansas and modified its training process. From an initial focus on onsite training, BSLTC has shifted to a two-part training program, with a shared session that convenes all regional partners followed by an on-site training that targets specific tools and protocols. Much emphasis is given to inter-professional teamwork and the inclusion of a broad range of BSL associates (clinical and non-clinical) in using the INTERACT tools. As of March 31, 2014, nearly 779 staff has been trained.²⁸ In addition, BSLTC has participated in national INTERACT training opportunities, such as the INTERACT Training Institute where staff have earned certification as INTERACT trainers.

²⁸ In response to a NORC query, the awardee reports that 5,229 associates have been trained, a number much higher than that reported to CMMI in March 2014.

Implementation Effectiveness

NORC telephone interviews with the awardee and BSL leadership, as well as review of awardee reports and other documents, have identified a number of issues related to implementation. Our upcoming site visit will enable our team to take a first-hand look at implementation in the field. The level of clinical services, staffing patterns, leadership turnover, and patient functioning vary significantly by setting, with implications for how INTERACT tools may be adapted and different ways data can be reported. In the first year of the program (2013), BSLTC implemented the intervention in skilled nursing, assisted living and memory care communities. The second year has been focused on ramping up implementation in assisted living as well as independent living communities.

A key part of implementation involves tailoring INTERACT tools for use outside of the skilled nursing context in which they were developed and creating a health IT infrastructure to integrate INTERACT into electronic health records and to anchor a new data collection portal that facilitates data sharing and rapid-cycle learning. The awardee's subcontractor, Loopback Analytics, is developing and managing the portal. The project launch was delayed by several months as the awardee negotiated with Florida Atlantic University (owner of INTERACT) for use of the tools in an electronic format, without additional licensure fees, after the end of the HCIA funding period. An agreement signed in 2013 authorizes Loopback Analytics to build an online portal for INTERACT version 3.0 that is available free of charge for BSLTC's use.

Another dimension of implementation is the recruitment of hospitals to participate. Originally, the awardee targeted 65 hospitals within 25 hospital systems that are considered high-referral to BSL communities. BSLTC reports encountering significant barriers to formal agreements with these hospitals to govern data exchange in an electronic format. In the second year, BSLTC has narrowed the target number of hospitals with which to affiliate to 12 additional hospitals. In addition, the awardee has asked CMS to obtain claims data for patients seen at these referral, partner hospitals, to offer enhanced reporting useful in benchmarking the total cost of care. This additional reporting is seen as important in facilitating integration of the hospitals into the intervention, given competing priorities for IT resources at these hospitals. As of the close of year two, agreements have been executed with 15 hospitals and the awardee has begun to obtain ADT data as a result of these agreements.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness will be gathered during the site visit and through review of survey data. As of this report, NORC has not completed its site visit nor are survey data available, and NORC has not yet begun secondary data analysis based on claims. Appendices B and C provide status updates on NORC's data collection and analytic approaches. For these reasons, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, Scalability

The awardee leadership team has described successful implementation in terms of integrating the Transitions of Care program into existing clinical systems at BSL residential facilities. The program has also been successfully incorporated into ongoing relationships with hospitals with which BSL communities have referral relationships. As both integration and working relationships continue to be management priorities, this intervention is likely to be sustained beyond the end of HCIA funding.

The procedures being developed to scale the growth of the BSLTC program are also being used to prepare for replicating and scaling up similar programs outside of the Brookdale Senior Living environment. In recent months, for example, the awardee has pilot-tested elements of the BSLTC INTERACT program, for use in other assisted living communities and home health agencies that are not affiliated with BSL, to assess the usefulness of the modified tools. In addition, BSLTC has worked with subcontractor Loopback Analytics to craft effective opt-in agreements for use with independent living residents and those with private insurance coverage.

Data Sources and Analyses

Site Visit

NORC conducted a site visit to the Brookdale Senior Living Transitions of Care program on October 1st and 2nd, 2014. NORC will code and analyze the full set of observational notes and link these thematic findings to quantitative data when available. These findings will be presented in subsequent NORC reports to CMMI.

Survey

UNTHSC is not fielding a *workforce trainee survey* in connection with this intervention, although BSL does survey its associates (staff) about their experiences. The BSL surveys query the full range of staff, both clinical and non-clinical, and are administered both online and by paper. During the recent site visit, NORC observed the apparent smoothness of the integration of BSLTC into residence operating procedures, to the point where associates may not identify their participation apart from their regular duties. For this reason, NORC plans to capture trainee perceptions through focus groups and interviews, rather than a survey.

To measure *resident (consumer) and caregiver experience*, BSL currently convenes focus groups on specific aspects of the intervention, including pilots to test new elements or modified aspects. Data from these focus groups are used to inform policy and programmatic decisions. Project leaders emphasize that there are at least three types of resident populations – skilled nursing, assisted living/memory care, and independent living/home health. The level of cognitive impairment and physical functioning varies dramatically among these populations, as well as likely awareness of being a participant in the intervention. If feasible, survey activity would ideally be tailored to each of the three population groups. NORC is exploring the prospect of developing a stand-alone resident and caregiver experience survey for the independent living arm of the intervention, with BSL collaborating in the administration of the survey.

Secondary Data

NORC executed a Data Use Agreement with BSL on August 22, 2014, and is in the process of finalizing a joint BAA with UNT and BSL. Once the BAA is finalized, we will use the data provided by UNTHSC and BSL to assess the program's impact on measures of health, quality of care, utilization and costs for the Medicare population served by the BSL Transitions of Care program.

References

Program Documents

Gerace, Alyssa. 2012. Health Care Reform Gives Senior Living Funding for Innovative Care. ALFA Update 7/21/2012. Available at: <http://www.alfa.org/News/2640/Health-Care-Reform-Gives-Senior-Living-Funding-for-Innovative-Care> .

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by UNT, 4/30/2014.

HCIA Quarterly Report for the University of North Texas (UNT), for Reporting Quarter End Date 3/31/2014. Submitted by UNT, 4/30/2014.

Interviews

NORC. Interview (Telephone), Awardee Data Sharing. UNT, January 9, 2014.

NORC. Interview (Telephone), Survey. UNT, April 3, 2014.

University of North Texas, supplemental documents shared with NORC before survey call, 2014.

University of Rhode Island

This chapter presents NORC’s evaluation of the University of Rhode Island’s Living RIte program from project launch through August 2014. Living RIte Centers are being implemented at two different sites to serve dually eligible Medicaid and Medicare beneficiaries with intellectual and developmental disabilities (I/DD) who receive fee-for-service (FFS) benefits and Medicare beneficiaries with Alzheimer’s disease who receive fee-for-service (FFS) benefits.

We provide preliminary observations about Living RIte based on a review of program documents, current through the awardee’s seventh quarterly report to CMMI, and a series of telephone interviews with the awardee; and a site visit conducted in October 2014. While this chapter presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection, nor formally analyzed the qualitative, quantitative, and survey data to be used as part of our evaluation. NORC will present more definitive findings and results in subsequent reports to CMMI.

Overview of Awardee

CMMI Category for Awardee:	Academic/University
Funding Amount:	\$13,955,411
Launch Date:	5/1/2013
States Where Located:	Rhode Island

The University of Rhode Island is implementing the intervention at two of the State’s Living RIte Centers, which serve dually eligible Medicaid and Medicare beneficiaries with intellectual and developmental disabilities (I/DD) and those with Alzheimer’s disease; beneficiaries eligible to participate in the HCIA-funded intervention include those living with I/DD who receive fee-for-service (FFS) benefits and Medicare beneficiaries with Alzheimer’s disease who receive fee-for-service (FFS) benefits. The Living RIte Centers describe their purpose as to “coordinate services among multiple community providers with the overall goals of improving health, well-being and employment for individual with disabilities while decreasing unnecessary emergency room care and along the participant to continue to live in the least restrictive environment.”²⁹ Living RIte Centers are an adaptation of the Wagner Chronic Care Model, featuring integrated teams of providers working with activated clients. The Centers bring together long-term services and supports with chronic and preventive outpatient care; aside from the HCIA support, until recently, the Centers have not received reimbursement from Medicare or Medicaid

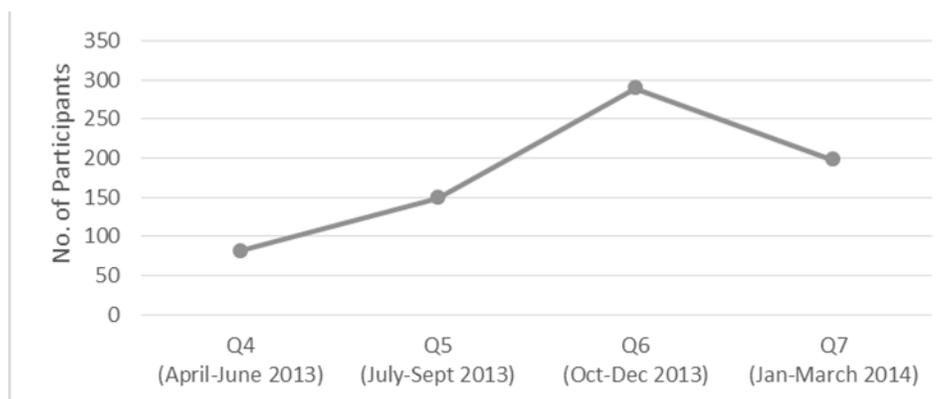
²⁹ Living RIte Centers Brochure. Undated.

for the services provided. The intervention is located at the Living RIté Centers, and includes a telemedicine component, to enable health care to be conveniently situated within the context of everyday life (e.g., providing health care services co-located with Developmental Disability Agencies or in group homes to residents of those homes) and disrupting patterns of health care typically provided in locations less accessible to the target population, e.g., physician offices.³⁰

Living RIté centers are located in Woonsocket and Cranston, RI. Each center is staffed by a dedicated nurse care coordinator, a nurse practitioner, life coaches, and peer specialists who offer care planning and preventive care. Each center has a clinic that fits durable medical equipment, provides nutrition and speech services, and offers coaching and classes related to employment, and referrals to social and related services. Living RIté centers are located within Developmental Disability Agencies, which are not-for-profit organizations that supply critical services to participants on a long-term basis. Living RIté Centers aim to complement the services offered by Developmental Disability Agencies by providing effective health care, well-being services, and coaching and classes related to employment. They also aim to reduce the number of emergency department visits and hospitalizations by Living RIté clients, to keep people in the community and out of skilled nursing facilities, and to move people from 24/7 group homes to shared living arrangements.

The program enrolls clients with I/DD who are dually eligible Medicare/Medicaid fee-for-service (FFS) beneficiaries and clients with a diagnosis of Alzheimer's disease who receive Medicare FFS benefits. URI self-reported data shows enrollment by quarter (Exhibit RIté.1) and indicates a steady increase through December 2013, with a subsequent decline through quarter 7. As of March 31, 2014, the University of Rhode Island's program had served 236 unique patients (HCIA Quarter 7 report by the awardee to CMMI). Most of those served (160 people or about 81 percent) are between the ages of 26 to 64 years of age. The remaining participants are between 65 and 74 years (30 people or about 15 percent), 19 and 25 years (5 people or about 3 percent), and over 75 years old (3 or about 2 percent). Project leadership estimates that approximately three-quarters of their patients have developmental disabilities and one-quarter have Alzheimer's disease. A few have both developmental disabilities and Alzheimer's disease (Survey Logistics Meeting, 4/1/14). The Centers expect to begin serving patients with Alzheimer's disease in November 2014 (the start of year 2 for the intervention).

³⁰ See Clayton M. Christensen, Jason Hwang, and Jerome Grossman, *The Innovator's Prescription: A Disruptive Solution for Health Care* (New York: McGraw-Hill, 2008).

Exhibit Rlte.1: Total Number of Living Rlte Participants, By HCIA Quarter**Context**

Awardee culture is characterized by strong mission-oriented leadership by Living Rlte Centers and a history of addressing the needs of the I/DD population. After programmatic delays largely related to a period dedicated to administrative start-up that took longer than expected, the project may benefit from two recent developments: First, Rhode Island now permit nurse practitioners to practice primary care independently, though currently no health insurers will reimburse for these services. Secondly, the State's Medicaid managed care organization, Neighborhood Health Plan, has begun to pay the Living Rlte Centers on a FFS basis for care coordination services.

Financial plan tracking in the 7th quarter report indicates that spending of HCIA funds are below projections by more than 40 percent. The awardee did not provide any narrative to explain how forecasted total expenditures from July 2013 through July 2014 will compare to the amount that CMS had approved in the project spending plan for Year 2.

During NORC's recent site visit, one focus has been on exploring the impact of exogenous factors on the project, such as salient secular trends or changes in external policy, regulatory, health care market, and the political environment.

Workforce: Staffing and Training

The awardee considers all health staff to be part of the interdisciplinary clinical team. The staff includes community health workers, exemplifying the innovation's human services orientation, with care coordinators and physicians, capturing the innovation's focus on integrated health care. Other members of the workforce include a nurse practitioner and an occupational therapist. Management or administrative roles makes up the remaining staff.

Staff retention is high. In Quarter 7, the most recent period for which data are available, the retention rate for staff was 100 percent (Awardee seventh quarterly report to CMMI). Leadership has also remained consistent as the program has had the same director, Elaina Goldstein, since its inception. In July 2013, project Co-Investigator and Executive Committee member Dr. James Prochaska became Co-Project Director and currently leads the Administrative Team.

Staff participates in a range of training, including training on effective interdisciplinary teams, electronic health records, and telemedicine. The awardee reported that, in the first quarter of 2014, life coaches and peer specialists received training in working with clients with Down's syndrome who had co-occurring Alzheimer's disease.

During our site visit, NORC gathered an array of data to assess workforce deployment, training, effectiveness, and satisfaction to better understand the workforce development within this project.

Implementation Effectiveness

NORC's site visit gathered observations on the critical area of implementation effectiveness, including:

- Macro (e.g., challenges in implementing the intervention following receipt of HCIA funding) and micro level (e.g., adaptation of elements of the PACE model for people with developmental disabilities and Alzheimer's Disease) processes;
- Consistency across the two Living RItE centers; and
- Modifications still needed in the model to better achieve innovation goals.

In subsequent reports to CMMI, we will also address major research questions relevant to this innovation, including the assessment of:

- Its progress towards the goals of providing health care, providing well-being services, and employment assistance services.
- The reduction in the number of emergency department visits and hospitalizations.

Program Effectiveness

NORC's evaluation design uses quantitative assessment to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness will be gathered during the site visit and through

review of survey data. As of this report, neither site visit nor survey data are available. In addition, secondary data analysis based on claims and electronic health records is not yet complete. For these reasons, NORC will present a comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI. For full details, see Appendices B and C for a status update on NORC's primary and secondary data collection and analyses.

Sustainability, Replicability, and Scalability

While NORC examined factors supporting sustainability and replicability more fully during its site visit, based on phone interviews and other sources of data, it appears that at least one factor supports sustainability of this intervention. As Living Rite centers are co-located within established and stable Developmental Disability Agencies, it makes the availability of specialized health care services convenient for participants and integrated with other services they may need or receive. The awardee notes the prospect of reimbursement through Medicare or Medicaid in the future, through a bundled payment financing mechanism.

Data Sources and Analyses

Sources for this report include program documents, awardee self-reported data uploaded to the Lewin website, and telephone interviews with the awardee.

Site Visit

A site visit to the University of Rhode Island and to the Living Rite Centers was conducted on October 6 and 7, 2014. NORC developed the itinerary for the site visit in consultation with the University of Rhode Island. NORC will code and analyze the full set of observational notes and will link these thematic findings to quantitative data when available. Findings will be presented in subsequent NORC reports to CMMI.

Survey

The University of Rhode Island is not fielding a *workforce trainee survey*. Given the relatively small number of trainees for this intervention, NORC will plan to use site visit group discussions, interviews, and observations to collect primary data on the workforce, in lieu of a survey.³¹

³¹ As reported in the awardee's Q7 report to CMMI (for the period ending March 31, 2014), the intervention includes the following number of trained staff: 2 community health workers, 2 NPs, 2 occupational therapists, 5 peer coaches, 3 pharmacists, 2 physical therapists, and 2 physicians.

While the University of Rhode Island has not fielded a *consumer or caregiver experience survey* in connection with this intervention, their experience with assessment highlights the importance of using an in-person mode and adapting content for the consumer population (e.g., respondents to receive help from a proxy respondent, use of visual content, need for Braille, pilot testing of wording). Given the considerable challenges of administering a survey to the target population, and the relatively small sample size anticipated, NORC intends to use focus groups and patient interviews to gather information on consumer and caregiver perceptions about the intervention.

Secondary Data

NORC executed a Memorandum of Understanding with the University of Rhode Island on May 29, 2014. Business Associate's Agreements have been executed with URI partners, including Seven Hills Living RIte Center on June 20, 2014 and Access Point Living RIte Center on June 30, 2014. NORC has not yet received data for conducting a claims-based analysis.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by URI, 4/30/2014.

HCIA Quarterly Report for the University of Rhode Island, for Reporting Quarter End Date 3/31/2014. Submitted by URI, 4/30/14.

Interviews

NORC. Interview (Telephone), Awardee Data Sharing. URI, December 19, 2013.

NORC. Interview (Telephone), Survey. URI, April 1, 2014.

University of Texas Health Sciences Center at Houston

This report presents NORC’s evaluation of the University of Texas Health Science Center at Houston’s (UT Houston) High-Risk Children’s Clinic (HRCC). The Clinic offers dedicated outpatient services (primary, specialty, post-acute, chronic disease management) and around-the-clock phone access for extremely fragile and complex chronically ill children enrolled in Medicaid. The clinic serves as a comprehensive medical home where both primary and specialty services are provided in the same clinic at the same visit.

We provide preliminary observations about the HRCC based on a review of program documents current through UT Houston’s seventh quarterly report submitted to CMMI (for the period January 1 through March 31, 2014); telephone interviews that NORC has conducted with the awardee; and a site visit to UT Houston on May 7 and 8, 2014. While this report presents themes that NORC has identified since the start of the HRCC initiative, it is important to note that our findings are tentative at this point, as NORC has not completed all of its data collection or formally analyzed the quantitative data, survey data, and qualitative data anticipated to be used as part of our evaluation. NORC expects to have more definitive findings and results for the second annual report to CMMI, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Academic/University
Funding Amount:	\$3,701,370
Launch Date:	9/11/2012
States Where Located:	Texas

UT Houston, in partnership with the Memorial Hermann Hospital System, is implementing a High-Risk Children’s Clinic (HRCC) that offers comprehensive outpatient care, including primary, specialty, post-acute, and chronic disease management services and continuous phone access for extremely fragile and complex chronically ill children, the great majority of whom are enrolled in Medicaid. The HRCC is a medical home for the children it serves, many of whom are technology-dependent, with feeding tubes or ventilators. Parents are encouraged to call ahead for same-day visits for acute problems, Monday through Friday, but even children arriving without notice before 5 PM are seen that day. Children with acute care needs that occur on weekends or nights are seen the next weekday. If an emergency department (ED) visit or hospitalization is needed, HRCC staff discusses the child’s visit with the responsible emergency physician and schedules a prompt follow-up visit with the child.

The goals of the HRCC are to improve health (reducing premature deaths, Pediatric Intensive Care Unit (PICU) admissions, incidence of serious illness and lengths of hospital stays) while reducing medical care costs by avoiding hospitalizations and ED visits. A closely knit team of pediatricians, nurse practitioners, and a social worker provide continuous on-call coverage and offer education and support to the patients' families.

The patient population is high-risk, fragile infants two years of age through adolescents up to 18 years of age. Common diagnoses include chronic lung disease, severe asthma, severe neurologic disorders, seizure disorder, congenital abnormalities, and severe respiratory disorder (mechanical ventilator dependent), and allergies and immunological problems. Many patients were born prematurely and have these conditions from birth; however, a handful of patients have suffered traumatic injuries or severe illnesses resulting in these conditions.

The HRCC patient demographics are diverse, with just over 50 percent Hispanic, 34 percent African-American, and 12 percent white. The median age of patients was 4.6 years of age. The population eligible for the randomized control trial (RCT) was selected using the following inclusion and exclusion criteria: Children under 18 years of age, with chronic illness, high medical services (defined as ≥ 2 hospitalizations or ≥ 1 PICU admission in prior year); and $>50\%$ estimated risk of hospitalization in next year were included in the study. Patients were excluded from the RCT if they already received enhanced medical home care by specialists; if they had unrepaired complex heart disease; or if they currently had Do Not Resuscitate (DNR) orders. As an indication of the severity of the study population's health problems, the first 20 children enrolled had hospital bills averaging \$500,000 each during the prior year.³² After the RCT ended, patients from the "usual care" group were invited to join the comprehensive care clinic. The HRCC patient population has grown since late in 2013 primarily as a result of transfers into the clinic following the end of the trial and new enrollment.

The HRCC clinic includes a relatively small staff with two part-time physicians (a pediatric pulmonologist and an adolescent medicine specialist, who are assigned half-time to the clinic), and four dedicated pediatric specialists (a gastroenterologist, a neurologist, an allergist/immunologist, and an infectious disease specialist) who are available for consultation as needed and have regular clinic days each month; three full-time nurse practitioners trained in pediatrics; and one full-time social worker. These staff grew from one MD and two NPs in the pilot to the present complement over two years. Clinic staff is dedicated and enthusiastic about the work. The patient–nurse practitioner ratio is low, less than 65

³² Keever, J. March 4, 2012. Project to Provider Better Care for Sick Kids Could Save Money Later. Chron.

patients to one clinician. HRCC providers showed an ongoing commitment to their patients with daily monitoring and case reviews to reduce undue ED visits and hospitalizations. Personal commitment to the work they do motivates the clinicians. HRCC providers cited the unlimited time with each patient as very important to their job satisfaction.

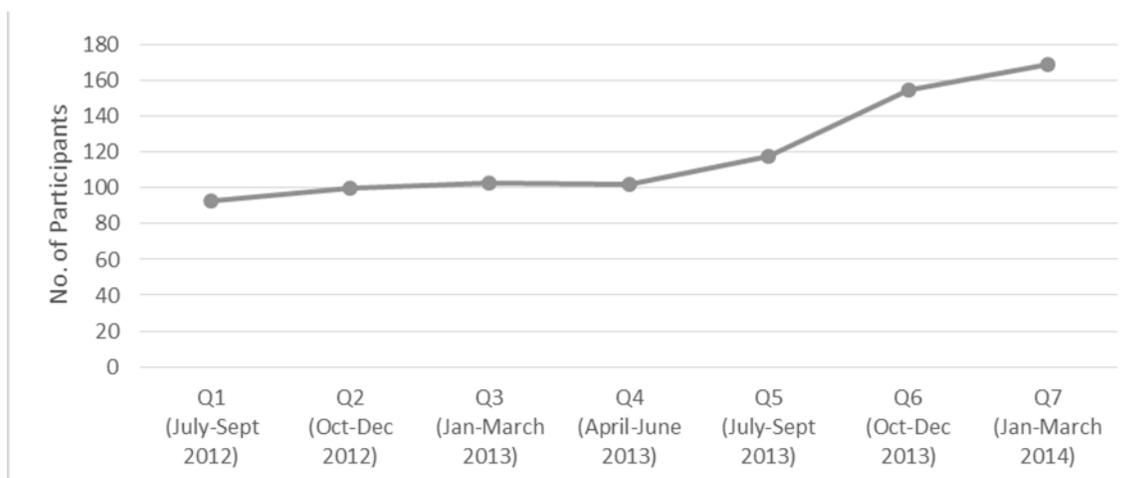
HRCC specialists providing primary care are experienced, bilingual, and adept in multicultural communication, which helps patients connect more easily with providers. Further, patients and their parents have easy access to the clinic Monday – Friday 8am-5pm, and by phone at all times. Staff also uses email and texting to communicate with their patients’ family caregivers if the caregiver prefers. During the 40-hour work week, the clinic averages five patients per day, along with patient emails and phone calls. This high intensity of contact with each patient and family allows the clinicians to know their patients thoroughly.

A key component of the HRCC model is the level of confidence and support the HRCC staff shows for the parents of these high-risk, chronically ill children. The HRCC providers, led by Dr. Mosquera, the pediatric pulmonologist, train and instill confidence in the parents to care for and understand their child’s complex needs. Dr. Mosquera involves the parent in all health assessments, crediting the parent with the authoritative judgment as to whether something is amiss in their child’s condition, even if standard test results and signs do not reveal a problem. The providers also frequently communicate with their patients’ home health nurses and other care providers to ensure good communication among all care providers. This process serves to build caregiver confidence and eases the considerable burden of parental worries for their child’s wellbeing.

As children grow in the HRCC model, providers involve the patients in their own care, encouraging them to understand their conditions and limitations, while also encouraging them to adhere to medication regimens. For example, the physician who specializes in adolescent medicine motivates her older patients to adhere to their medication regimens, such as preventive inhalers for children with severe asthma, and discusses their care with them in terms that they can understand and to which they can relate.

Self-reported data provided by UT Houston reports enrollment by quarter, shown in the graph below (Exhibit HRCC.1). As of March 31, 2014, HRCC had directly served 172 patients. Of the 169 patients directly served during the most recent reporting quarter (Quarter 7), most were either Hispanic/Latino (51.5%) or African-American (37.9%), and nearly all were covered by Medicaid (88.2%).

Exhibit HRCC.1: Total Number of HRCC Participants, By HCIA Quarter



Context

The principal investigator for this award, Jon Tyson, MD, MPH, is an experienced neonatal and pediatric researcher and clinician specializing in care for high-risk, chronically ill children. Prior to his work in Houston, he previously developed a similar clinic intervention for high-risk neonates at the UT Southwestern Medical Center in Dallas.³³ Following Dr. Tyson’s move to UT Houston in 1998, he developed a similar comprehensive clinic for neonate through age two years, and in 2011 launched a pilot RCT extending the clinic model for infants to children up to 18 years of age.

The High-Risk Children’s Clinic launched in Houston in March 2011 and initially received support from the Texas Department of Health and Human Services (HHS) as a RCT to demonstrate the cost savings and health outcomes between comprehensive care and the “usual care” provided by other faculty-supervised clinics or private offices. The HCIA award began mid-2012, and the RCT design of the intervention continued until September, 2013, when preliminary results showed that the outcomes for the continuing care intervention relative to the control group intervention had met pre-set criteria to stop the random assignment and open the comprehensive clinic to the control patients originally assigned to usual care.

The University of Texas at Houston, which administers the HRCC and is the HCIA awardee, and Memorial Hermann Hospital have an unusual relationship, in that the UT system does not own but rather has a contractual relationship with the hospital in which its medical students and residents train and in which the medical school faculty practice. Institutional and infrastructural support from both the medical

³³ Broyles, R. S., Tyson, J. E., Heyne, E. T., Heyne, R. J., Hickman, J. F., Swint, M., et.al. (2000). Comprehensive follow-up care and life-threatening illnesses among high-risk infants: a randomized controlled trial. *JAMA*, 284(16), 2070-2076.

school and hospital have been strong, despite acknowledgement that if the HRCC is successful in reducing ED visits and hospitalizations, the hospital's revenue is decreased. HRCC staff is paid by UT Houston, including the remaining part-time salary of the two HRCC physicians and four pediatric specialists, to cover their time spent seeing patients outside of the HRCC. Medical school leadership is supportive of the HRCC initiative, despite the fact that it does not offer training opportunities for medical residents, because all care is provided by the physicians and nurse practitioners on staff. A small number of nurse practitioner students have rotated through the HRCC as have medical students. The HRCC model requires a core set of providers who know their patients' often unique health care complications and physiology, and therefore the intervention is not conducive to being staffed by residents with limited experience and short rotations. This clinical model, although unusual in a teaching hospital, is supported by the medical school and hospital due to a shared goal of reducing readmissions and improving the quality of life for the HRCC's high-risk patient population.

The Houston metropolitan area has a large population covering a large geographic area. Patients come to the HRCC from up to two hours away. This travel time and distance support the HRCC approach to patient contact by phone, email and text, when possible, to prevent an unnecessary clinic visit or ED visit. UT Houston is also situated within the largest medical care complex in the country, with a clustering of highly regarded cancer treatment facilities, children's hospitals, and other hospitals in the immediate area. Families commented that care varies greatly among institutions, and that Memorial Hermann Hospital and the UT Houston Medical Center have a very strong reputation.

As mentioned earlier, nearly 90 percent of HRCC patients are enrolled in Medicaid. These children may qualify for Medicaid by meeting different eligibility criteria including low family income. In Texas, the Medically Dependent Children's Program, a program of the Texas Department of Aging and Disability Services, serves infants and children with high levels of need for medical care and encourages home-based care when feasible. Additionally, infants born under 2 pounds can qualify for Medicaid regardless of income status, based on disability status. Parents noted that even if families have private insurance, the lifetime maximum payments and other limitations can quickly make private insurance irrelevant. Children with Medicaid coverage due to family income are typically enrolled in a Medicaid managed care organization (MCO), whereas children qualifying for the Medically Dependent Children's program can obtain a waiver from MCO enrollment, which parents perceive as preferable, as it allows them to select their own providers.

HRCC leadership noted that progress has been slow in the attempt to secure sustainable reimbursement for the HRCC under the Texas Medicaid program. Because the State's fee-for-service (FFS) or MCO

payment arrangements do not approach the total costs of the HRCC's comprehensive care approach, such resource-intensive care cannot be provided without being heavily subsidized (currently by the HCIA award, through UT Houston) and will not be sustainable in the long run without a new payment model.

An important resource in Houston for families with technology-dependent and fragile infants and children has been Health Bridge, an inpatient setting in which families join their children to transition from full hospital care. After discharge from the Neonatal Intensive Care Unit (NICU) or PICU and the hospital's less intensive step down units, whole families lived at Health Bridge to learn how to care for their children, receiving training on tracheotomies, mechanical ventilators, and colostomy bag care, as appropriate. Parents reported that this was a critical experience in gaining ability to care for their own children at home. Currently this facility is no longer affiliated with, or used by, Memorial Hermann Hospital, so a gap in the care path has opened that the HRCC may have to fill through increased parent education and training in the care procedures technology-dependent children need.

Workforce: Staffing and Training

The unique workforce is an important element of this intervention. The HRCC model is predicated on a strong commitment to the well-being and potential of their patients and families for fulfilling lives despite great disabilities and challenges. This commitment begins with the project leadership and founding staff, Drs. Tyson and Mosquera, and Tomika Harris and Cheryl Samuels, the clinic's first two pediatric NPs. The initial pilot and RCT started with just three staff (one pulmonologist, two pediatric NPs) and since the HCIA award the clinic has added one more pediatric NP, one additional part-time pediatrician, one social worker, and four part-time pediatric specialists. There has been no attrition among the clinic's clinical staff since its establishment in 2011.

The clinic's medical director, Dr. Mosquera, has recruited a team of providers who are dedicated wholeheartedly to the individual patients they serve and to their success. The clinic's patients are divided among the pediatric NPs, who each serve as care manager and primary point of contact for their assigned patients and their families. The clinic's physician staff are specialists in relevant disciplines, including pulmonology, adolescent medicine, gastroenterology, neurology, allergy/immunology, and infectious disease. The clinic's social worker also requires a specialized skill set for addressing the needs of families with children with disabilities, which include connecting families to resources such as housing assistance, Medicaid, and durable medical equipment (DME) companies and providing ongoing psychological support for families dealing with stressful circumstances and decisions.

The training of staff within the clinic is informal but continuous, with weekly staff debriefs to discuss patient issues, provider responses, and to identify possibilities for improvement. HRCC staff noted that these debriefs often help identify situations and solutions that may be transferable to other patients and situations so this is an important part of their quality improvement. The clinical staff also periodically reviews existing evidence-based care guidelines for the diseases most prevalent among their patient population, such as asthma, tracheitis, and neuro epilepsy. The clinic patients' highly particular constellations of health conditions require their providers to adapt general knowledge and clinical best practices to individual conditions based on their deep familiarity with their patients.

In collaboration with the UT Medical School at Houston, six medical students (2 a month) have had a 100-hour rotation in the clinic between January and March, 2014. A pediatric NP student recently completed a 90-hour rotation through the clinic and other NP students have requested rotations.

Implementation Effectiveness

As noted in the overview above, the HRCC is predicated on the extensive availability of their clinicians to respond to patients and their families by phone, email, or text at nearly all times. Every day, the primary pediatric NP for a family is available by phone or email. Providers rotate carrying the "on call" phone, so that families use the same number for late night and early morning urgent contacts. All providers are familiar with each patient and can access HRCC patient medical records remotely. While the official "on call" phone is rotated, most providers offer almost constant access to their services and these families frequently contact them, even if they're not technically the "on call" provider that night. The work requires bilingual providers, so one provider completed classes in medical Spanish in order to provide service to her Spanish speaking patients and caregivers.

NORC conducted a focus group with four parents (all mothers) of Clinic patients during the May site visit. The focus group members gave testimony to the level of support the HRCC providers offer their patients' families; Mothers recounted how their child hugs the doctor or NP at every visit and how the providers build mothers' confidence in caring for their chronically ill child, encouraging mothers to trust their own sense that something may not be normal in their child's presentation. Providers, including the social worker, support the families both medically and socially as they handle their children's unique health care needs. HRCC staff noted they strive to meet parents "where they are" and provide the education and guidance that each parent needs in specific ways. Often that means a parent can text a picture of a child's rash and the provider can determine if the patient needs to come to the clinic, or if an at-home solution would suffice. Providers noted that parents variously prefer email, text, phone, or an in-

person visit. Thus the clinicians make themselves accessible in all formats so parents feel comfortable and confident their child's needs are addressed.

The electronic health record (EHR) systems at UT Health and Memorial Hermann Hospital facilitate the Clinic's care coordination. On a weekly basis the HRCC team of providers reviews the on-call phone logs to identify problems with access, communication, or care, share information, and record the information in the EHR. All HRCC staff has laptops that allow them to access the EHR at the clinic or at home. The HRCC, along with the other UT Houston outpatient clinics, uses AllScripts, while the hospital uses Care4. The HRCC staff also has access to Care4 so that they can review each ED visit or hospitalization for their patients. Often HRCC patients call HRCC staff before presenting at the ED, but as a backup, the ED calls to notify the HRCC provider when a HRCC patient presents. HRCC providers regularly check the Care4 records for hospitalizations and ED visits to see if any Clinic patients presented without notifying the HRCC staff.

All patients get a follow-up call after an ED visit or hospitalization to determine whether there was an issue getting to the clinic (e.g. if it was an access issue or a matter of an emergent problem). The HRCC staff use this information to address any procedural shortfalls and prevent hospital visits for similar patients in the future. Other quality improvement practices of the HRCC include staff review of phone calls; daily checks of ED and hospital logs to screen for admissions for any clinic patients, and detailed review of all care provided prior to an unplanned hospitalization.

The HRCC social worker is a key component of the awardee's intervention. She counsels and supports the HRCC patients and their families not only at the clinic but also conducts visits with patients at home and at school. Both the HRCC staff and parents noted that additional social work support would be helpful, given the many agencies and issues involved in orchestrating services and family support for these children. The social worker has written letters to a landlord to get a dirty/allergen-filled air conditioner unit fixed in a patient's apartment; appealed to the Texas Medicaid program to receive coverage waivers; and assisted in applications for other benefits for HRCC patients. The social worker also helps families work with home health agencies for in-home nursing services and communicate with durable medical equipment (DME) vendors whose products are vital for the clinic's patients.

DME is central in the care of many of the HRCC's patient and the clinic relies on a network of physical and occupational therapists to recommend sources for the needed equipment, (e.g., wheelchairs, ventilators, car seats). To the extent possible, the HRCC social worker facilitates the acquisition process, which involves meeting Medicaid program requirements and payment restrictions. The HRCC providers

can recommend particular DME products but acknowledge that they often do not know out of pocket costs to patients and families for DME that they prescribe or recommend.

The DME procurement system itself makes it difficult to comparison shop, to obtain real-cost estimates for supplies, and to ascertain if the particular product is covered. In particular, the needs of these patients often warrant very specific equipment, which may not be routinely covered by Medicaid or private insurance. For example, one patient was prescribed a seizure-protective car seat for her epileptic son, but it is very expensive and Medicaid does not cover the full cost of the custom car seat and suggested the patient use a different, less specialized one. In another example, a 4-year old requested a new, lighter mechanical ventilator since the one he has severely limited his mobility (it is too heavy for the child to pull, even on wheels). Medicaid, however, denied the request, determining that the current ventilator functioned properly and thus a new machine was unnecessary, despite the potential improvement in the quality of life for the child.

Program Effectiveness

NORC's evaluation design includes quantitative assessments to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to this pediatric intervention and population. Measures of program effectiveness related to patient and informal caregiver satisfaction and experience with the intervention are being gathered through surveys conducted by UT Houston, as well as through NORC's site visit, as described in the previous section.

Sustainability, Replicability, and Scalability

The HCIA-funded HRCC initiative faces a number of challenges in continuing and potentially expanding its practice after HCIA funding concludes. The HRCC leadership and University of Texas-Houston Medical School, which has subsidized clinicians' time, hope to continue the clinic beyond the HCIA period of performance. Central to the clinic's future is the establishment of a sustainable Medicaid payment model for HRCC services. Texas is currently in the process of converting its traditional Medicaid system into a completely managed care system, and the place of a highly targeted and intensive intervention such as the HRCC in this universal capitation scheme is unresolved. Despite demonstrable success in reducing ED usage and inpatient stays among its patients, the HRCC operation and patient population is probably too small and expected total medical costs too high and highly variable for the clinic to move to a full risk capitation payment model. Also, the administrative requirements of full capitation would likely prove overwhelming for the current operational structure. UT Houston and the

HRCC leadership have involved the CMS Regional Office in their discussions with the State and the HRCC team presented the results of the initial RCT to the Texas Health and Human Services Executive Commissioner in April 2014.

Other medical centers have expressed interest in learning more about the HRCC model after professional conference presentations about it by the project's staff. Given the selective criteria for patient enrollment, comprehensive care clinics for extremely high-risk children are best suited for large metropolitan communities with academic medical centers and pediatric subspecialty resources. As the overwhelming majority of children meeting the criteria for these services are Medicaid beneficiaries, State Medicaid payment policies, and service delivery framework, such as whether MCOs are universal or optional and whether high-risk patients can be carved out of such arrangements, will be central to any such clinic's financial feasibility.

The premise of continuous accessibility to familiar providers of a comprehensive care clinic for high-risk children such as UT Houston's makes special demands for the recruitment of core clinical staff.

Providers staffing such a clinic must be committed to taking on demanding on-call schedules. Not only the time commitments of this work, but also the experience of losing children and working with grieving parents are conditions conducive to staff burn out.

The support of the larger enterprise within which a high-risk comprehensive care clinic operates is a critical factor in mounting and sustaining such an effort. In the case of the UT Houston HRCC, clinical staff are supported about half-time with research funding, an arrangement that could be critical to the feasibility of staffing such a low-volume/high access clinic with the appropriate complement of highly specialized clinicians.

Data Sources and Analysis

Information sources include program documents, including the awardee's HCIA application, quarterly administrative reports for CMMI, and materials shared with NORC during the site visit (including PowerPoint presentations and patient education leaflets). NORC also held several telephone discussions with the UT Houston leadership team.

Site Visit

A team of two NORC staff visited the HRCC on May 7 and 8, 2014. Site visit activities included interviews with project leadership, hospital quality improvement and revenue cycle management leaders, a nurse practitioner student; and a focus group with parents of HRCC patients. NORC is in the process of

coding and analyzing the full set of notes from our site visit and will be linking these thematic findings to quantitative data when available. Findings will be presented in the first and subsequent NORC annual reports to CMMI.

Survey

UT Houston is not fielding a workforce trainee survey. Given the small number of providers in this intervention (the pilot was initiated with one pediatric pulmonologist and two nurse practitioners and now has six clinical staff, in addition to four dedicated specialists who attend the clinic once monthly and available by telephone for consultation at all hours, and typically one NP or medical student at a time), NORC is using the site visit group discussions and interviews as the basis for analysis of workforce questions in lieu of a survey.

Two parent satisfaction surveys are fielded by the University of Texas Health Science Center in connection with the HRCC model: one at the time of a clinic visit (in-person) and the other a telephone survey based on CAHPS, administered to a parent caregiver one year after their child is enrolled in the HRCC. NORC is exploring the possibility of coordinating with the awardee's telephone survey, by adding new questions to the existing survey and receiving aggregate data for analysis.

Secondary Data

NORC executed a Data Use Agreement with the University of Texas Health Science Center on August 25, 2014. NORC has received UT Houston's files of Texas Medicaid program claims data for NORC's independent analysis.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by UT Houston, 4/30/2014.

HCIA Quarterly Report for University of Texas Health Sciences Center at Houston, for Reporting Quarter End Date 3/31/2014. Submitted by UT Houston, 4/30/2014.

Interviews and Site Visit

NORC. Interview (Telephone). UT Houston, December 13, 2013.

NORC. Interview (Telephone), Awardee Data Sharing. UT Houston, January 17, 2014.

NORC. Interview (Telephone), Site Selection. UT Houston, January 28, 2014.

NORC. Interview (Telephone), Survey. UT Houston, April 17, 2014.

NORC. Site Visit. UT Houston, May 7 and 8, 2014.

Vanderbilt University Medical Center

This report presents NORC’s evaluation of the Vanderbilt University HCIA program entitled “Reducing Hospitalizations in Medicare Beneficiaries: A Collaboration between Acute and Post-Acute Care.” The program aims to improve care and reduce re-hospitalizations for patients discharged from the Vanderbilt University Medical Center to one of 23 partner skilled nursing facilities (SNFs) in Tennessee and Kentucky, integrating in-hospital and post-acute care (PAC) services.

We provide initial observations about the program based on a review of program documents current through Vanderbilt’s seventh quarterly report to CMMI (for the period January 1 through March 31, 2014), telephone interviews with the awardee, and a site visit that was conducted in April 2014. While this report presents information and themes that NORC has identified during the first year of the evaluation, it is important to note that all of the findings are preliminary at this point, as NORC has not completed all of its data collection or fully coded and formally analyzed the data collected from the site visits. We expect to have more definitive findings and results for the second annual report, due in the summer of 2015.

Overview of Awardee

CMMI Category for Awardee:	Acute Care Hospital
Funding Amount:	\$2,449,241
Launch Date:	1/17/13
States Where Located:	Tennessee, Kentucky

Vanderbilt University Medical Center (VUMC) is implementing a two-part intervention to improve care coordination and reduce hospital readmissions from skilled nursing facilities (SNFs) for Medicare and Medicaid patients. The program involves a partnership between the Medical Center and 23 partner SNFs to provide two separate, but integrated, interventions: the Improved Post-Acute Care Transitions (IMPACT) program for in-hospital services, and the Interventions to Reduce Acute Care Transfers (INTERACT) for post-acute care services.³⁴ The program targets Medicare and dually eligible Medicaid beneficiaries admitted to VUMC who are expected to be discharged to one of 23 partnering SNFs.

The IMPACT component provided by VUMC to patients that are discharged from its hospital to one of the partner SNFs was developed to address issues of transitions of care from the hospital to PAC facilities. When a patient is admitted to VUMC, he/she is paired with a dedicated Transitions Advocate

³⁴ Ouslander JG, Perloe M, Givens JH et al. Reducing potentially avoidable hospitalizations of nursing home residents: results of a pilot quality improvement project. *J Am Med Dir Assoc* 2009; 10:644-652.

(TA—either an RN or a nurse practitioner) who works with the patient during the hospital stay and through discharge to the SNF. While the patient is in the hospital, IMPACT staff prepare a Nursing Transition Summary (NuTS) that extracts key information from the patient medical record and nursing notes to present a succinct post-discharge care plan for the SNF staff, including a reconciled medication list and key action items that guide subsequent discussions between the TA and SNF staff. Screenings are done for geriatric syndromes (incontinence, pain, delirium, malnutrition, etc.), and the TAs also screen patients in the hospital to determine if they have filled out a Physician Orders for Scope of Treatment (POST) form or made other advanced care planning/end-of-life care arrangements. If not, the patients are counseled by the TA to do so. If this process is not completed in the hospital, a note is made in the summary to continue conversations during the SNF stay. Once the patient is ready for discharge, a warm hand-off call is made by the TA to the SNF to go over any important issues highlighted in the NuTS form and medication list, and the TA also makes a 72-hour follow-up call with the SNF to answer any remaining questions. Patients are surveyed on their experience both at discharge and 3-5 days post-discharge while in the SNF.

The INTERACT component is provided by the partner SNFs to both patients that were discharged from VUMC (and, thus, received IMPACT as well) and patients that were referred to the SNF from other hospitals (and did not receive IMPACT). INTERACT consists of several structured tools and processes to improve skills and streamline communications among PAC staff. It also includes analytic support from the developers of INTERACT, Dr. Joseph Ouslander and colleagues at Florida Atlantic University (FAU), to assess patient records and SNF reports about patients readmitted to hospital to determine the root causes and whether the readmission was preventable. Two basic INTERACT tools utilized in the Vanderbilt program are the “Stop and Watch” tool for SNF staff (nurses and nurses assistants) to document changes in patient condition that may be early warning signs of readmission and the Situation, Background, Assessment, and Request (SBAR) form, which structures communication between clinical staff. INTERACT also has structured tools for changes in condition, transfers, and quality improvement. Advanced care planning is also an important component of both hospital and SNF interventions. For the most part, the INTERACT components are operated and overseen by the SNF staff, with guidance from VUMC during QI meetings and regular conference calls. The INTERACT portion of the intervention has expanded beyond the initial IMPACT study population, as the SNFs have taken up the INTERACT components as part of their SNF operations, even for patients that were referred from other hospitals and did not receive IMPACT services from VUMC.

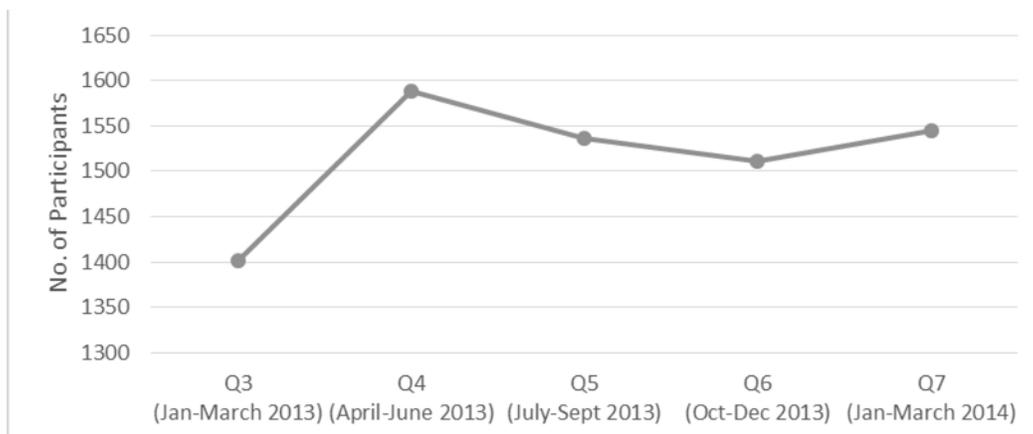
While the number of staff on the IMPACT project within VUMC is fairly small (fewer than five FTEs funded by HCIA and eight not funded through HCIA), transitional services have become a priority for the

VUMC system, and the HCIA program is carefully monitored by VUMC leadership. VUMC recently established a Transitions Management Office, which is responsible for synthesizing the findings from all of the transitions-based projects throughout the medical system and operationalizing their work across the board. Per discussions with the Transitions Management Office, VUMC is looking to take a more population-centered look at transitions of care and focus on improved sharing of data and bundles of care to ensure that patients have more support throughout the continuum of care. Some of the most recent work for the Office has been around developing a “transfer wizard” within the hospital medical record to deliver a unified, reconciled medication list for patients referred to PAC facilities, building upon work done by the IMPACT team.

Given the ebb and flow of inpatient volume throughout the year, VUMC has reported that should hospital volume exceed staffing capacity for IMPACT components, it will utilize a randomized “referral cap” system to assign patients to be “missed,” effectively setting a ceiling for the caseload of the transitions advocates. Additionally, tasks such as patient experience surveys, medical record reviews, and data analysis that do not require nursing or clinical expertise have been delegated to research assistants and other junior staff. These adjustments have helped VUMC keep up with changing caseloads, and Vanderbilt reports that very few patients eligible for IMPACT are “missed” before the discharge.

Self-reported data provided by VUMC reports on enrollment by quarter (Exhibit VUMC.1), for both direct participants (those whose services are funded by the HCIA grant) and those considered to be indirect participants (receiving services made available under the HCIA grant but not directly funded by the grant). As of March 31, 2014, VUMC had served a cumulative total of 1,007 direct participants. Of the 245 patients directly served during the most recent reporting quarter (HCIA Quarter 7), nearly all were elderly (57% over age 75 and 27% between ages 65 and 74), and all patients were covered by Medicare.

Exhibit VUMC.1: Total Number of IMPACT-INTERACT Participants, By HCIA Quarter



Context

While the IMPACT and INTERACT interventions are intended to operate in tandem, the implementation is overseen separately by VUMC and the partner SNFs, respectively. On the whole, both VUMC and the leadership of the partner SNFs have demonstrated organizational commitment to the IMPACT-INTERACT intervention components. Further, there is evidence that VUMC and the SNFs have a great deal of institutional rapport with one another, fostering an atmosphere of collaboration that could improve implementation of the interventions between them.

The IMPACT component requires a time-intensive staffing commitment to monitoring discharges in order to complete the intervention components on a daily basis. Patients are initially identified by pulling lists of daily SNF referrals and seeing which of those patients have been referred to a partner SNF upon discharge and have Medicare FFS or Medicare Advantage insurance coverage. Once those patients are identified, the IMPACT staff are responsible for designating a TA, reviewing the chart and other documentation to put together the NuTS form, having pharmacists or NPs conduct an accurate and thorough medication reconciliation, interviewing the patient to fill in gaps and conduct an advanced care planning discussion if need be, and surveying the patient on discharge experience, all before the patient is discharged to the partner SNF. Further, VUMC reported that the turnaround time between admission to the hospital and discharge has been shrinking over time (sometimes as short as a day and a half). While the caseload will ebb and flow, there are times when the IMPACT staff reported feeling overwhelmed, and any potential expansions to the program would likely need to include additional staff. Still, despite the challenges, Vanderbilt reported a low rate of “misses” of patients,³⁵ and both on-site observations and

³⁵ A review of VUMC’s self-monitoring data found a total of 17 misses since program inception (1/16/13), out of a total of 629 patients that were discharged to partner SNFs receiving full IMPACT services, a “miss rate” of 2.7%. Using this approach, the

quarterly reports suggest that they have been able to carve out a tight workflow and shift some of the tasks that do not require nursing credentials (chart reviews, data analysis, patient surveys, etc.) to research assistants or other junior-level staff.

VUMC as an organization provides institutional support to the IMPACT-INTERACT intervention and is taking steps toward integrating some of its components into the system operations as a whole. Overall, Vanderbilt reported that this intervention is one of over 40 similar projects dealing with transitions that are occurring throughout the VUMC system, which was the main driver for creating the Transitions Management Office to bring forth some of the mechanisms and drivers learned from the interventions.

In addition to the resources made available by VUMC, the IMPACT-INTERACT intervention is aided by a tight partnership between the Medical Center and its partner SNFs. With 21 out of the 23 SNFs within one umbrella organization (National Healthcare Corporation) that provides policy direction and performance monitoring and feedback to its facilities and the other two local independent SNFs with a shared medical director affiliated with VUMC, a high degree of alignment about project goals was evident from interviews with both VUMC and SNF leadership and staff. The partner SNFs are also utilizing the INTERACT tools for all patients, indicating an organizational commitment to them beyond the grant.

VUMC project staff meets regularly with the SNFs at the facilities' QI meetings to discuss approaches to communication and patient care, and trends in patient readmissions. When a patient returns to VUMC from one of the SNFs, the two organizations conduct a readmissions adjudication review, in conjunction with FAU INTERACT staff, to determine the root causes of the readmission. As part of this adjudication process, a packet of materials (the NuTS form, the medication management document, and an INTERACT QI transfer form) are sent to a physician on the IMPACT team, who reviews the material and fills out a data collection protocol analyzing the root cause of the readmission. VUMC will call into the SNF's QI committee meetings to discuss readmissions that the IMPACT team determined to be "strongly preventable" at the SNF level and discuss the root causes with the SNF team.

Further, VUMC participates in a Readmission Collaborative with SNFs and other facilities in the region that allows for sharing of ideas, with the goal to build toward a regional clinically-integrated network (CIN). However, it is uncertain how well the program could be expanded to SNFs that have not had prior working relationship with VUMC or strong internal management support.

most recent reporting quarter (QR 7) saw this rate drop to 2.1%. It is unclear if this is how VUMC calculates its miss rate, or if another numerator/denominator combination is used.

Workforce: Staffing and Training

On the IMPACT side, the main roles that require clinical certification are the transitions advocates (RN or LNP) and the clinical pharmacists working on medication reconciliation. While it would seem advantageous to have additional clinical expertise for chart reviews or filling out the NuTS forms, the team has been able to train research assistants and other junior staff to complete that work, with the expectation that questions could be resolved by speaking to providers or other healthcare professionals.

Training for INTERACT takes place within the SNF. It originally occurred through a MEDLINE program for self-training, but since then it has been picked up by other staff to train new staff. At the NHC nursing homes, since the INTERACT components have been incorporated into their general workflow and are applied to all patients, the staff reported that training happens more organically, with one staff member remarking that “new staff might not even be aware we are in a grant.” For the other two nursing homes, they are trained by a CNA or RN on the floor, but the staff there were quick to note that since the INTERACT tools are built into their EMR, “you are forced to learn it.”

Implementation Effectiveness

On the hospital (IMPACT) side, the effectiveness of implementation appears to be influenced primarily by the time between when the patient is identified as eligible for the program and when they are discharged to a SNF. As a result, the VUMC staff stressed the importance of prioritizing tasks, and they have shifted tasks that do not require clinical judgment, such as conducting the in-hospital and post-discharge patient survey, to research assistants. Most of the prioritization work falls to the program coordinator, who conducts the initial chart review for patients and assigns various IMPACT tasks to relevant staff members, accompanied by an e-mail and a change to the shared task spreadsheet (a social worker or research analyst is also trained to perform this task if the coordinator is unavailable). Most of the information for the NuTS form is pulled from the EMR and referral databases, but staff members also review hard copy inpatient nursing notes and call providers directly for clarification if the information is incomplete, inconsistent, or unclear.

While some parts of the process are automated, such as the calculation of risk scores from chart data, VUMC staff reported that the medical record is often inconsistent and requires further follow-up with the patient or provider. One staff member described the trade-off by saying, “If we were to limit ourselves to just getting the information out of the chart, we could cut down 50 percent on labor intensity, but we would cut down 100 percent accuracy for geriatric syndromes [...]” The medication reconciliation form requires the most time and intensity to complete (up to two hours) due to inconsistency of information provided by discharge documents from the SNF and the hospital. Many patients also require advanced

care planning follow-ups, and while the TA does not have to complete documentation for each patient with regards to palliative care/advanced directives, the staff emphasized the importance of palliative care consults for some patients before they leave the hospital. SNF staff believes that the lack of planning and the unfamiliarity of family members with such discussion was a leading cause of readmission; family members want to be sure that everything is being done on behalf of their loved ones.

VUMC maintains a robust self-monitoring database to house all of its data on IMPACT patients, including data from the NuTS forms, interview and assessment data (collected through REDCap), follow-up and warm hand-off call encounter data, and re-hospitalizations. In addition to weekly management reports showing summary statistics on readmissions, patients assigned to the program, and “misses,” the team also performs analysis on the data to identify trends in the patient population to discuss with the SNFs. The most recent quarterly report presented trends on prevalent geriatric syndromes in the population, prompting a discussion at a QI meeting (that NORC observed) about how SNF staff could develop more tailored follow-up procedures or implement more targeted assessment protocols to better account for and treat these conditions.

The IMPACT components require staff dedicated to their work and a keen ability to prioritize tasks and stay on top of all the discharges of the day. While the work is time-intensive, the project has worked to ensure that transitions advocates are not overburdened by shifting non-clinical tasks to more junior staff. The VUMC staff reported that they are thinking about how to further target the intervention to patients discharged to home and for advanced care planning, based on feedback they have received from the intervention to this point. However, even with a structured workflow, the staff reported occasionally feeling overwhelmed during high-volume periods. While a “referral cap” might help to prevent TAs from taking on too high of a caseload by randomly assigning a group of patients to be “missed,” the process still requires a high level of intensity from the TAs, junior staff, and pharmacists involved.

On the SNF (INTERACT) side, the effectiveness of implementation appears to be influenced by the culture of the nursing home and the ease by which data is shared between VUMC and the SNF. Whereas the components of IMPACT were implemented in a more standardized fashion within the hospital, the SNFs have utilized more flexibility in terms of which INTERACT components they wish to incorporate into their workflows. The INTERACT program team at FAU allows individual facilities to adapt the language from the paper INTERACT formats to use within their EMR, but does not allow for the customized programming of the INTERACT tool as part of a local EMR system. (The INTERACT program does have an authorized electronic version of SBAR, but not a version that can be readily merged into existing EMRs.) As a result, SNFs with EMRs use paper INTERACT forms in addition to

electronic records, decreasing efficiency. One of the SNFs created a new form to collect the information necessary to respond to the 72-hour follow-up call from the transitions advocate at VUMC. The SNF also developed a tool to answer patient questions about the admitting process, which could be handed to the nurse to start teaching patients immediately.

The SNFs reported finding great value in the IMPACT interventions: the medication reconciliation form and the NuTS sent to the SNF and the follow-up call within 72 hours from the VUMC TA. Although VUMC endeavors to send the NuTS and medication reconciliation to the SNF within 24 hours of the patient's transfer from hospital, this does not always occur, and sometimes had not been reviewed before the 72-hour follow-up call.

Within the INTERACT component, the SNFs have shown the ability to adapt the INTERACT system to fit within their facilities' workflows. Further, the large NHC chain has incorporated the INTERACT system into their general workflow for all patients, ensuring that new staff are able to integrate into the program organically. Some of the SNF staff reported issues with data sharing through the VUMC EMR (able to view the information, but not necessarily edit medical records), and for those that were not able to fully integrate INTERACT software into their EMR, they are performing some redundant work in both paper and electronic formats. Additionally, even with the NuTS forms acting as a shorter summary of the larger discharge records for patients, many staff still reported that there is a lot of information to process, and they were not always able to fully review the documentation before the TA would make follow-up calls. Overall, leadership and staff of the SNFs reported that the INTERACT intervention has been beneficial to them in terms of their clinical operations, allowing them to better identify patients that are at high risk for readmissions and address their needs more quickly.

Program Effectiveness

NORC's evaluation uses quantitative analysis to answer most questions about program effectiveness related to the core outcome measures used with all awardees (number of hospitalizations, number of hospital emergency department visits, number of hospital re-admissions within 30 days of discharge, and total cost of care) and supplemental measures specific to an individual awardee. Additional data that inform our understanding of program effectiveness are gathered through the site visit, review of survey findings, telephone interviews with the awardee, and review of program documents. As NORC continues to gather and analyze primary (qualitative and survey) data from VUMC over the coming year, we will present a more comprehensive set of observations and findings about program effectiveness in subsequent reports to CMMI.

Sustainability, Replicability, and Scalability

With regards to sustainability and scalability, there appears to be a good deal of institutional support from both the SNFs and VUMC to continue the IMPACT-INTERACT work in some capacity. In addition to the 21 SNFs that are part of a nationwide chain of facilities, which are using INTERACT for all patients, VUMC has established a Transitions Management Office to synthesize and operationalize best practices learned from all of its transitions-focused interventions throughout the system. Already, the experience with IMPACT has prompted the Office to investigate ways to use a “transfer wizard” in the electronic health record to reconcile medications and send the PAC facilities one unified list rather than separate ones. However, VUMC staff reported that the pharmacists are not able to bill for their medication management work due to reimbursement regulations in Tennessee, meaning that there will need to be in-kind contributions from VUMC for all pharmacy staff to sustain this work past the end of the award.

Additionally, it is not clear how well VUMC could scale this model beyond its initial 23 partner SNFs. While the Medical Center has demonstrated its ability to forge a partnership with SNFs, these entities were already familiar with each other, given that the 21 SNFs in the national chain constitute the largest proportion of discharges from VUMC and the other two have a medical director on staff at VUMC. There is no reason to believe that new partnerships could not be formed with those less familiar with VUMC, but the necessary level of rapport would likely take more time to build.

Data Sources and Analysis

Site Visit

NORC conducted a two-day site visit to Vanderbilt in April 2014, which included group interviews and discussions with project leadership and staff, and interviews with leadership and staff of three partner SNFs (Richland Place, Trevecca, and Bethany). We also observed IMPACT staff interactions with patients (advance care plan screening; patient surveys in person and by phone) coordinative phone calls with SNF nursing staff (the “warm handoff”), and the conduct of a medication reconciliation by an IMPACT pharmacist. In addition to the site visit, NORC conducted a series of interviews with the awardee and the CMMI project officer prior to the site visit and has also been reviewing the quarterly report documentation submitted to CMMI through the Lewin website.

Survey

Vanderbilt University Medical Center is not fielding a *workforce trainee survey*. Given the small number of trainees, NORC is using the site visit group discussion and interviews as the basis for analyses of workforce, in lieu of a survey.³⁶

Vanderbilt fields a two-part hospital discharge experience survey to measure *consumer experience*. The first section is administered in-person in the hospital, close to the time of discharge, and the second section is administered by phone to a patient, family member, or caregiver, after the patient has been discharged to skilled nursing. The software application REDcap is used to manage data and generate descriptive statistics. Vanderbilt is considering changes to the second part (phone) of the survey, given a relatively low response rate and respondents' health and cognitive challenges. NORC plans to work with Vanderbilt's survey data to examine patient experience.

Secondary Data

NORC executed a Business Associate Agreement with Vanderbilt on April 10, 2014, and was able to use their data for this report.

References

Program Documents

HCIA Narrative Progress Report, for Reporting Quarter End Date 3/31/2014. Submitted by VUMC, 4/30/2014.

HCIA Quarterly Report for Vanderbilt University Medical Center, for Reporting Quarter End Date 3/31/2014. Submitted by VUMC, 4/30/2014.

Interviews and Site Visit

NORC. Interview (Telephone). VUMC, December 19, 2014.

NORC. Interview (Telephone), Awardee Data Sharing. VUMC, December 27, 2013.

NORC. Interview (Telephone), Site Selection. VUMC, January 24, 2013.

NORC. Interview (Telephone), Survey. VUMC, March 24, 2014.

NORC. Site Visit. VUMC, April 9-10, 2014.

³⁶ As of the awardee's Q7 report to CMMI, the intervention includes 3 direct care workers, 4 care transition specialists, and 1 pharmacist.

TECHNICAL APPENDICES

Appendix A: Definition of Acronyms

Acronym	Definition
ACS, ACSC	ambulatory care sensitive condition
ADE	adverse drug event (associated with hospitalization)
ADL	Activities of Daily Living
ATE	average treatment effects
BAA	business associate's agreement
CAD	coronary artery disease
CAHPS, HCAHPS	Consumer Assessment of Healthcare Providers and Systems, hospital CAHPS
CCW	Chronic Condition Warehouse (data enclave)
CDSMP	chronic disease self-management program
CHC	community health center
CHF	congestive heart failure
CHIP	Children's Health Insurance Program
COPD	chronic obstructive pulmonary disorder
DUA	data use agreement
E&M	evaluation and management
ED	(hospital) emergency department
EOL	end of life
ESRD	end-stage renal disease
FQHC	federally qualified health center
GEE	Generalized estimating equation
GLM	Generalized linear model
HCC	Hierarchical condition categories
HTN	Hypertension
IADL	Instrumental Activities of Daily Living
ICU	hospital intensive care unit
IDD	intellectual or developmental disabilities
ILS	independent living skills
IP, HC/IP	inpatient, hospital
LOS	length of stay
LPN	licensed practical nurse
LTC, LTSS	long term care, long term services and supports
Medicaid FFS	Medicaid Fee-For-Service
Medicaid MC	Medicaid Managed Care

Acronym	Definition
MS-DRG	Diagnosis-related group, coding system used by Medicare, also known as CMS-DRG
NH	nursing home
NPI	national provider identifier
OT	occupational therapist
PAC	post-acute care
PACE	Program of All-Inclusive Care for the Elderly
PC, PCP	primary care, primary care provider
PHCA	personal health care agency
PMPM	per-member, per-month (capitation payment)
POLST	Physician Orders for Life-Sustaining Treatment
POST	Physician Orders for Scope of Treatment
PT	physical therapist
SNF	skilled nursing facility

Appendix B: Primary Data Collection and Analysis

Overview

This appendix offers an update on primary data collection and analyses for the time period since the second quarterly report (the period from June 1 through August 30, 2014), and further detail on qualitative data collection and analysis methods. Refer to the individual awardee chapter for observations based on primary sources and data.

Site Visits

Since June 30, 2014, NORC has conducted 7 site visits, completing the first round of site visits for the evaluation. Planning for the second round of site visits, to take place during the spring of 2015 (February through May), will begin in November 2014. See Exhibit B.1 for a summary of NORC’s site visit schedule.

Exhibit B.1: Site Visit Schedule

Awardee	Date of First Site Visit
South Carolina Research Foundation	3/3 – 3/4/14
Johns Hopkins University	3/7, 3/10/14
University of Arkansas for Medical Sciences	3/17 – 3/18/14
Providence Portland	3/17 – 3/18/14
St. Francis Healthcare Foundation	3/20 – 3/21/14
Johns Hopkins School of Nursing	4/8 – 4/9/14
Vanderbilt University Medical Center	4/9 – 4/10/14
Developmental Disabilities Health Services	4/10 – 4/11/14
Beth Israel Deaconess Medical Center	4/29 – 4/30/14
University Emergency Medical Services	5/1 – 5/2/14
University of Texas Health Science Center at Houston	5/7 – 5/8/14
Sutter Health	5/12 – 5/13/14
Palliative Care Consultants of Santa Barbara	5/14 – 5/15/14
Lifelong Medical Care	5/29 – 5/30/14
Pittsburgh Regional Health Initiative	6/10 – 6/11/14
University of Iowa	6/23 – 6/24/14
Courage Kenny	7/14 – 7/15/14
California Long Term Care Education Center	9/15 – 9/16/14
University of North Texas	10/1 – 10/2/14
Northland Healthcare Alliance	10/2 – 10/3/14
University of New Mexico	10/6 – 10/7/14
University of Rhode Island	10/9 – 10/10/14
North Carolina Community Networks	10/22 – 10/23/14

Standard Site Visit Protocol. Initial plans for a site visit, including interviews, observations, and focus groups or group discussions at one or more sites for each awardee, are finalized through a series of at least 2 planning calls with each awardee. During site visit planning calls, NORC and the awardee together identify:

- the timing for a first site visit,
- topics for exploration as part of the site visit (e.g., training, development of new health IT systems, community outreach),
- NORC staffing (e.g., number of staff, subject area expertise),
- prospective interview subjects (either individuals or groups, for example, a leadership team),
- the timeframe for interviews (e.g., whether during the site visit or at another time as respondents are available),
- criteria for selecting sites to visit where an intervention has multiple sites and site selection itself,
- the feasibility of focus groups or group discussions for consumers, informal family caregivers, and/or workforce trainees and the logistics of convening these groups (e.g., transportation, interpreters, consents, compensation for participants), and
- opportunities to observe or participate in intervention activities (e.g., case conferences, training, one-on-one meetings with patients).

A site visit itinerary is generated on the basis of the planning calls and revised in collaboration with the awardee over a period of weeks leading up to the site visit. As the itinerary is developed, NORC staff creates focus group/group discussion screening guides (sent to the awardee for their use in recruiting group participants) and discussion guides, and a set of protocols to guide the semi-structured interviews planned for each site visit.

Following a site visit, the NORC cohort team cleans and analyzes qualitative data. Each site visit team prepares a final set of notes, supplemented with recordings made during interviews and focus groups, with team members triangulating their own sets of notes to improve validity. The team prepares an informal debriefing memorandum for internal use, presenting the memo at a weekly qualitative analysis meeting to facilitate shared learning across the three cohorts. The site debriefing memoranda are used to create a preliminary table of observations that enables comparisons across awardees and the organization of observations into categories related to the research questions that NORC will answer in its evaluation. The site visit debriefing memoranda and the preliminary table of observations are used, together with

notes from telephone interviews, site visit notes, and program documents, to generate the preliminary case studies presented in this report.

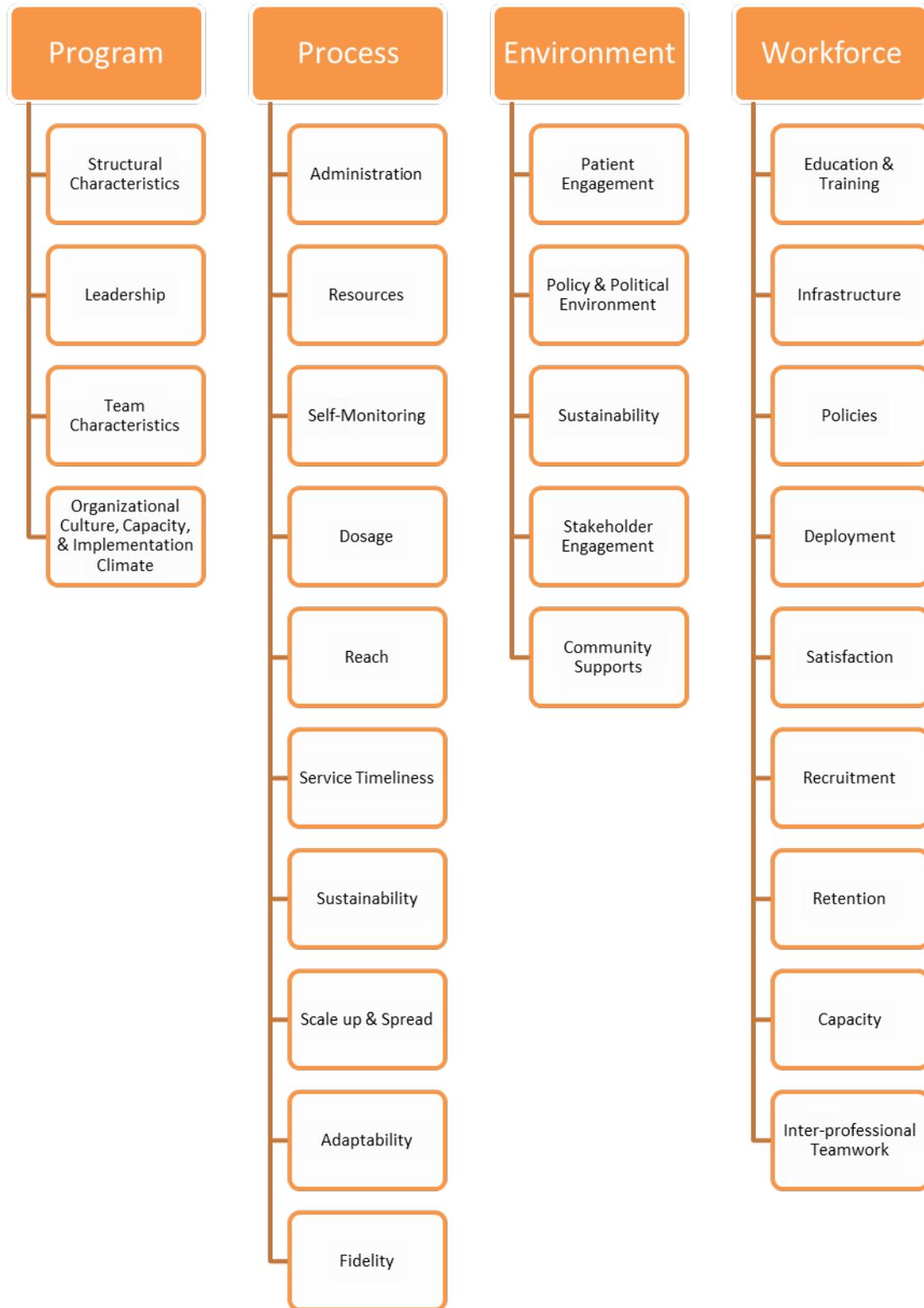
Coding of Qualitative Data

Formal analysis of the qualitative data, through coding of site visit and telephone interview notes for themes and categories of themes, is being conducted on a rolling basis, with coding taking place approximately 6 to 8 weeks after the date of a site visit. Deviations from this schedule reflect the need to accommodate multiple site visits in a given week, carried out by one team. One or more members of each NORC site visit or cohort team participate in coding once they have finalized notes and prepared debriefing memoranda that enable interim analyses for reporting purposes. Tapping site visit or cohort team members for coding is a best practice that improves coding quality by maximizing the coder's background knowledge about the awardee. In addition, a coder's familiarity with multiple awardees improves their capacity to propose refinements to the codebook that capture meaningful developments while retaining a lean or parsimonious approach to coding. Once qualitative data from the full set of initial site visits have been coded and the codebook finalized, tentatively scheduled for the winter of 2015, formal analysis of themes and categories of themes will be conducted.

Senior team members generated an initial set of binary codes (creating a pair of positive and negative values for each code) through a round of open-coding on NORC's set of interviews with CMMI project officers. To specify and refine the codebook, including new pairs of binary codes, and criteria for inclusion and exclusion from a code, and to build inter-rater reliability toward 80% or greater, an internal team of trained coders has conducted six subsequent rounds of coding using the initial round of awardee interviews. Each team member has been assigned to code materials for a subset of the 23 awardees, improving the quality of coding by facilitating the growth of in-depth expertise about the awardees for whom s/he codes data. The team is taking a parsimonious or lean approach to code creation, using a small number of codes derived from the 4 code families and including an "other" code for each family as a location in which to gather themes that may later be relabeled as a new code; following best practices in coding, the target number of codes is intended to be fewer than 50 (Saldana, 2009). See Exhibit B.2 for a depiction of the evaluation's code families.

Beyond the initial rounds of coding used to develop a codebook, the process of document coding as well as analysis of coded materials (e.g., notes, transcripts, program documents) will be conducted using the qualitative data analytic software NVivo. Refinement of the codebook will continue over the life of the evaluation, using the same iterative process of code generation and team consultation as coding proceeds for site visit and related interview documents.

Exhibit B.2: Code Families



Surveys

Since June 30, 2014, NORC has pilot-tested a revised survey instrument for the University of Arkansas (combined consumer and workforce experience survey), in preparation for fielding scheduled to begin on August 11, 2014; and continued to develop stand-alone workforce survey instruments for Providence Portland and Courage Kenny.

NORC's survey development protocol includes the following steps:

Initial reviews and preliminary planning. Plans for consumer experience and workforce trainee surveys are based on review of program documents and telephone interviews with the awardee. The NORC team uses a common set to guide decisions about survey design, administration, and data management.³⁷ In addition, the survey design takes into account the categories of respondents (e.g., licensed clinicians, community health workers, direct care workers, caregivers), the scope of ongoing or planned surveys by awardees, estimated sample sizes, and the key evaluation domains across the 23-awardee portfolio. Within domains, we identify validated survey questions appropriate for use with individual awardees.

- **Survey calls with awardees.** NORC holds one or more dedicated survey calls with each awardee, following a standard protocol, including a request for copies of any of the awardee's survey instruments, if not already part of program documents gathered to date. We explore different approaches to survey design, fielding, and analysis, including independent NORC surveys or coordinating with planned or ongoing awardee surveys. To improve consistency and comparability across survey findings by awardee, NORC identifies questions from awardees' own surveys that would be suitable for use more generally and requests permission to use or modify the questions for use in NORC's surveys as part of the evaluation.
- **Coordinated survey.** Where the awardee and NORC agree to a coordinated consumer experience or workforce trainee survey, the NORC team maps existing or planned awardee surveys against NORC's universe of survey domains, sub-domains, and questions. The mapping process identifies gaps where an awardee survey does not capture data required for NORC's evaluation. NORC then uses the survey maps to prepare a proposed modification of the awardee's existing survey instrument, changing or adding questions in negotiation with the awardee. Together with the awardee, new questions are incorporated into existing awardee surveys in a way that maintains the flow of the

³⁷³⁷ These criteria include the following considerations: the anticipated maximum number of workforce trainees (a minimum of 30 was selected as the threshold, above which a survey is considered feasible); whether to use a universal sample frame; whether limits or prohibitions external to the evaluation exist on survey content, frequency, mode, or timing; whether the awardee has or plans a similar type of survey; the awardee's capacity to identify and locate respondents, to field a survey, to gather, manage, and analyze data, and the role of prospective respondents in the intervention being assessed.

questionnaire and minimizes introduction of biases related to the content or order of existing questions. In some cases, NORC does not anticipate requesting that questions be added to an existing or planned awardee survey related to the HCIA intervention; NORC's request will be for access to data collected by the awardee, for use in independent analysis.

- **Stand-alone survey.** Where the awardee and NORC have agreed that NORC will field a stand-alone survey, the NORC team develops an original survey instrument, using NORC's universe of survey domains and sub-domains and tailoring questions to capture observations pertinent to the awardee's intervention. Development of the survey instrument is done in partnership with the awardee.

For both stand-alone and coordinated surveys, the NORC team is discussing with each awardee the logistics of survey administration (e.g., mode, timing, frequency) and data management and analysis (e.g., whether the awardee, an intervention partner, or NORC will collect, clean, check, and/or analyze data). Together with the awardee, the NORC team will conduct pilot testing of items from coordinated surveys or full-length stand-alone surveys. During survey-related calls with awardees, NORC has requested assistance with recruiting respondents for pilot testing. NORC will leverage existing data cleaning, processing, and analytic capacity of the awardee when coordinated surveys are administered. For stand-alone surveys, however, NORC will conduct its own independent analyses apart from any analysis performed by the awardee. NORC is addressing survey activities for each awardee individually on a rolling basis over an approximately 6 month timeframe (March through August 2014). See Exhibit B.3 for survey plans and timelines for the 23 awardees; for each awardee, the exhibit notes whether a consumer and workforce survey is planned, whether a planned survey will be stand-alone or coordinated, and if coordinated, whether NORC is making a request only for access to data. Further details about survey planning are available in the awardee-specific chapters.

Exhibit B.3: Consumer and Workforce Survey Plans and Timeline

Awardee	Consumer Timeline (estimated; 2014 unless otherwise noted)	Consumer Stand-alone	Consumer Coordinated	Workforce Timeline (estimated; 2014 unless otherwise noted)	Workforce Stand-alone	Workforce Coordinated
UAMS	N/A	None	None	August—Nov	X	
J-CHIP	April/May		X	Nov/Dec		X (data only)
DDHS	August		X	N/A	None	None
JHU SON	N/A	None	None	N/A	None	None
Pittsburgh	Sept/Oct		X	Nov/Dec	X	
Courage Kenny	Sept/Oct	X		N/A	None	None
Vanderbilt	Nov/Dec		X (data only)	N/A	None	None
SCRF	Nov/Dec		X	Nov/Dec	X	
Lifelong	Nov/Dec		X	N/A	None	None
Sutter Health	Nov/Dec		X (data only)	Nov/Dec	X	
Univ. New Mexico	Nov/Dec		X	Nov/Dec		X
Beth Israel	Nov/Dec		X	N/A	None	
St. Francis	Nov/Dec		X (data only)	N/A	None	
Palliative Care	Nov/Dec	X		N/A	None	
North Carolina	Nov/Dec		X	Nov/Dec	X	
Providence	Nov/Dec		X (data only)	Oct/Nov	X	
Iowa	N/A	None		N/A	None	
CLTCEC	Nov/Dec		X (data only)	Nov/Dec		X (data only)
Northland	Nov/Dec		X	N/A	None	
UEMS	Nov/Dec		X (data only)	N/A	None	
Univ. Texas – Houston	Nov/Dec		X (data only)	N/A	None	
Univ. North Texas	N/A	None		N/A	None	
Univ Rhode Island	N/A	None		N/A	None	

Appendix C: Secondary Data Collection Update

In order to execute our planned analyses, we request two broad types of information from awardees. First, we need finder files from awardees to identify claims data for program participants. The second type of information is analytic files of program data such as self-monitoring measures, EHR data, or patient-reported outcomes. In order to obtain finder files and program data from awardees, we have been seeking to enter into data sharing agreements with awardee institutions. The status of data sharing agreements and finder files for each awardee is summarized in Exhibit C.1.

Exhibit C.1: Status of Data Sharing Agreements and Finder Files

Awardee	DUA/BAA status	Finder Files Status
Beth Israel Deaconess Medical Center	BAA executed 4/23.	Finder file uploaded 5/14.
California Long-Term Care Education Center	MOU executed 4/24 and BAA executed 9/18. In process of establishing agreements with CLTCEC partners.	Pending
Courage Kenny Rehabilitation Institute	BAA executed 5/14.	Finder file uploaded 7/30.
Developmental Disabilities Health Services	BAA executed 5/14.	Finder file uploaded 7/17.
Johns Hopkins University	BAA executed 4/9.	Finder file uploaded 7/16.
Johns Hopkins School of Nursing	NDA executed 4/28.	Finder file will be collected in October.
LifeLong Medical Care	BAA executed 4/9 and with their partner Alameda Alliance 4/24.	Finder file uploaded 7/11.
North Carolina Community Networks	BAA executed 5/30.	Finder file uploaded 8/8.
Northland Healthcare Alliance	BAA executed 4/15.	Finder file uploaded 8/25.
Palliative Care Consultants of Santa Barbara	BAA executed 4/1.	Finder file uploaded 5/16.
Pittsburgh Regional Health Initiative	No data sharing agreement is being established.	Not applicable
Providence Portland	BAA executed 8/22.	Finder file uploaded 9/16.
South Carolina Research Foundation	BAA executed 3/24.	Finder file uploaded 5/14.
St. Francis Healthcare Foundation of Hawaii	BAA executed 4/15.	Finder file uploaded 5/15.
Sutter Health	BAA executed 4/3.	Finder file uploaded 5/18.
University of New Mexico	BAA executed 4/25.	Finder file uploaded 5/29.
University of North Texas	DUA executed 8/22.	Finder file will be collected in October.
University Emergency Medical Services	BAA executed 4/21.	Finder file will be collected in October.

Awardee	DUA/BAA status	Finder Files Status
University of Arkansas for Medical Sciences	No data sharing agreement is being established.	Not applicable
University of Iowa	BAA executed 5/13.	Finder file uploaded 5/16.
University of Rhode Island	MOU executed 5/29. BAA executed with URI partners: Seven Hills Living RiTE Center 6/20 and Access Point Living RiTE Center 6/30.	Access Point finder file uploaded 8/26 and Seven Hills finder file uploaded 9/25.
University of Texas Health Science Center at Houston	DUA executed 8/25.	Medicaid data set uploaded 8/26.
Vanderbilt University Medical Center	BAA executed 4/10.	Finder file uploaded 5/12.

For the 18 awardees in our portfolio whose participants include Medicaid enrollees, our evaluation must secure access to Medicaid data. Exhibit C.2 below summarizes our proposed Medicaid data sources for these awardees and the status of efforts to obtain these data. Five awardees are providing us with Medicaid Data from their plan partners (California LTC Education Center, Lifelong Medical Center, and Providence Portland) or Medicaid data that they have from the State (Courage Kenny, University of Texas- Houston). For four awardees, we have requested MMIS data from the States (Johns Hopkins University, Johns Hopkins School of Nursing, University of Iowa, and University of Rhode Island). For the remaining nine awardees, we propose to use Alpha-MAX. Current Alpha-MAX data through 2013 is available for only two of these nine awardees (University Emergency Medical Services and University of New Mexico). We are closely monitoring the timing and availability of Alpha-MAX for seven other awardees. Alpha-MAX is only available for 2011 in North Carolina- and there have been issues with Alpha-MAX production for that State, due to a change in the Medicaid Statistical Information System (MSIS) vendor. This may affect our evaluation for North Carolina Community Networks. For the two awardees with timely Alpha-MAX data, we have begun our usability analysis of Alpha-MAX, to prepare for conducting their evaluation in forthcoming reports.

Exhibit C.2: Status of Medicaid Data Sources

Awardee	State(s)	% Medicaid Enrollees for Awardee	Proposed Source of Medicaid Data	Medicaid Access Status
California LTC Education Center	CA	100%	Plan Partners (Contra Costa, IEHP, Molina, LA Care)	Executing data sharing agreements with partner plans to get Medicaid data for treatment and comparison population
Courage Kenny	MN	100%	MN's ITS Database from Awardee	Allina (Courage Kenny's Corporate Organization) has access to MN-ITS encounter database, and is providing us data for evaluation

Awardee	State(s)	% Medicaid Enrollees for Awardee	Proposed Source of Medicaid Data	Medicaid Access Status
Developmental Disabilities Health Services	NJ	96%	Alpha-MAX (2011)	Timely Data Unavailable
Developmental Disabilities Health Services	NY	96%	Alpha-MAX (2011 – 2013)	Alpha-MAX Usability testing
Johns Hopkins University	MD	36%	MD State	In the process of getting Medicaid claims from Hilltop.
Johns Hopkins School of Nursing	MD	100%	MD State	In the process of getting Medicaid claims from Hilltop
Lifelong Medical Care	CA	100%	Plan partner (Alameda Alliance)	Executed data sharing agreements with Awardee to obtain Medicaid data for treatment and comparison population from plan partner
North Carolina Community Networks	NC	100%	Alpha-MAX (2011)	Timely Data Unavailable
Northland Healthcare Alliance	ND	26%	Alpha-MAX (2011)	Timely Data Unavailable
Palliative Care Consultants of Santa Barbara	CA	22%	Alpha-MAX (2011)	Timely Data Unavailable
Providence Portland	OR	95%	Plan Partner (HealthShare of Oregon)	Executed data sharing agreements with Awardee to obtain Medicaid data for treatment and comparison population from plan partner
South Carolina Research Foundation	SC	82%	Alpha-MAX (2011 – 2012)	Timely Data Unavailable
St Francis Healthcare Foundation of Hawaii	HI	24%	Alpha-MAX (2011)	Timely Data Unavailable
Sutter Health	CA	14%	Alpha-MAX (2011)	Timely Data Unavailable
University of Texas Health Science Center at Houston	TX	88%	Texas MMIS Data from Awardee	Obtained Texas MMIS data for Treatment and Comparison population from Awardee.
University Emergency Medical Services	NY	100%	Alpha-MAX (2011 – 2013)	Testing usability of Alpha-MAX for Awardee
University of Iowa	IA	16%	Iowa MMIS Data from Awardee	Submitted letter to IA requesting access to IA MMIS data that Awardee has access to
University of New Mexico	NM	100%	Alpha-MAX (2011 – 2013)	Testing usability of Alpha-MAX for Awardee
University of Rhode Island	RI	100%	RI MMIS Data with JEN Associates	Submitted letter to RI requesting access to RI MMIS data that JEN Associates has access to

Appendix D: Research Questions for the Evaluation

Exhibit D.1: Evaluation Research Questions, HCIA Evaluation Statement of Work

Domain	Questions
I. IMPLEMENTATION EFFECTIVENESS	
A. Program drivers	
1. Theory of change	<p>What are the central processes or drivers in the innovation by which change in behavior and/or systems is supposed to come about?</p> <p>What implementation activities are designed to activate the innovation’s theory of change?</p>
2. Theory of action	<p>What are the central processes or drivers in the innovation by which patient or system-level action is meant to come about?</p>
B. Intervention	
1. Components of the intervention	<p>What intervention components (e.g., training and technical assistance) were provided in support of implementation?</p> <p>How much of each component was provided?</p> <p>To what extent were the components available on an ongoing basis?</p> <p>How did unexpected events support or conflict with successful implementation of the innovation?</p>
2. Dosage	<p>What “dosage” of the innovation was <i>delivered</i> to patients, providers, and other target populations?</p>
3. Fidelity	<p>In what ways is the innovation intended to be customized to specific use contexts?</p> <p>To what extent were systems in place to monitor implementation on an ongoing basis?</p> <p>How well did providers and sites adhere to planned procedures (including, as appropriate, procedures for customization)?</p> <p>To what extent were the innovation and its components properly understood and used by target populations?</p>
4. Self-monitoring	<p>What changes were made in response to self-monitoring?</p>
C. Reach	
1. Coverage	<p>What was the target population (e.g., patients, providers) after implementation?</p> <p>How many patients, providers were reached?</p>
2. Timeliness of implementation	<p>To what extent was implementation timely, conducted as planned, and responsive to site-level constraints?</p>
3. Secondary use of tools	<p>What secondary uses, if any, were discovered for IT, decision support and other intervention tools?</p> <p>How could secondary uses be exploited to enhance benefits of the intervention(s) in other settings?</p>

Domain	Questions
II. PROGRAM EFFECTIVENESS	
A. Outcomes	
1. Health outcomes	<p>To what extent does the intervention improve desired health outcomes?</p> <p>Does the intervention result in any unanticipated negative health outcomes?</p> <p>Does the intervention affect health outcomes that are most important to the target population?</p> <p>Can we learn anything about causal pathways? In particular, for interventions with multiple components, which aspects of the intervention are primarily responsible for observed effects?</p>
2. HRQoL	<p>To what extent does the intervention improve quality of life?</p> <p>Can we learn anything about causal pathways? In particular, for interventions with multiple components, which aspects of the intervention are primarily responsible for observed effects?</p>
B. Cost	
1. Program Costs	<p>What were the fixed costs associated with program start-up?</p> <p>What are the variable costs associated with program operation?</p> <p>What are the anticipated new fixed costs associated with program sustainability?</p>
2. Utilization	<p>To what extent have levels of appropriate and inappropriate utilization changed?</p> <p>To what extent were there any unintended consequences for utilization?</p> <p>To what extent have levels of ED utilization changed?</p> <p>To what extent have rates of hospitalization and re-hospitalization changed?</p> <p>To what extent has intensity of inpatient utilization changed?</p>
3. Expenditures	<p>How are the models designed to reduce expenditures (e.g., changing the service the population utilizes, reducing the volume or utilization of services, changing the cost of services, etc.)?</p> <p>To what extent did the program change charges and expenditures for all care in the target population?</p> <p>To what extent did the program result in unintended charges and expenditures in the target population?</p> <p>To what extent do the models reduce or eliminate variations in charges or expenditures that are not attributable to differences in health status?</p> <p>What is the expected cost of sustaining these changes?</p>
C. Quality	
1. Safety	<p>To what extent do the models improve patient safety?</p>
2. Clinical Effectiveness	<p>To what extent do the models improve the effectiveness of patient care?</p> <p>To what extent have clinical condition indicators changed?</p> <p>To what extent does the intervention affect key performance goals, such as compliance with treatment guidelines?</p>
3. Patient experience	<p>In what ways are aspects of patient experience (e.g., access, perceived care coordination, provider-patient communication, etc.) are enhanced by the intervention(s)?</p> <p>In what ways are aspects of patient experience worsened by the intervention?</p> <p>To what extent does the intervention affect measures of patient activation?</p>
4. Timeliness	<p>To what extent do the models improve the timeliness of care?</p>

Domain	Questions
5. Efficiency	To what extent do the models improve the efficiency of care?
6. Care Coordination	To what extent did the models improve care coordination?
D. Cross-Cutting Considerations	
1. Equity & Disparities	<p>What contribution did the program make in reducing disparities in patient access to care?</p> <p>What contribution did the program make in reducing disparities in enrollment of targeted patients in intervention?</p> <p>To what degree do the model(s) result in reductions in or elimination of disparities in quality of care?</p> <p>To what degree does the program result in reductions in or elimination of disparities in patient outcomes?</p> <p>What program characteristics influenced reductions of disparities in access, quality, or outcomes?</p>
2. Subgroup effects	<p>In outcomes of interest (health, costs, quality) for which a main effect was not detected, was there a subgroup in whom an effect was detected?</p> <p>In outcomes of interest (health, costs, quality) for which a main effect was detected, was there a subgroup of patients for whom the effect was stronger, weaker, or not detected?</p> <p>What were the characteristics of patients, providers, and settings in which a subgroup effect was detected?</p> <p>What characteristics of patients and settings influencing subgroup effects could be used to target the intervention(s) in other settings?</p>
3. Spillover effects	<p>What, if any, were the positive and negative spillover effects of the intervention(s)?</p> <ul style="list-style-type: none"> · At site(s) /Among providers/Among non-targeted patients (through unintended effects on all services) · Among targeted patients (through unintended utilization of other beneficial services) <p>What program characteristics and factors influenced these effects? To what extent did workflow redesign, HIT, telemedicine, and other structural aspects of the intervention result in spillover effects at the site(s) or among providers?</p> <p>To what extent did care coordination, patient navigators, shared decision making, and other aspects of the intervention(s) result in spillover effects among non-targeted patients?</p> <p>How can spillover effects be exploited in future implementation efforts using similar models of care?</p>
III. WORKFORCE	
A. Development & Training	
	<p>To what extent do programs provide training to use existing staff versus incorporate new kinds of staff effectively?</p> <p>Are specialized providers required with training relevant to any of the diseases/systems being targeted?</p> <p>What level of investment in training is required to fill these workforce gaps?</p> <p>How effective and efficient are the various training models?</p> <p>Are providers given feedback on their own performance and relative to others?</p>

Domain	
B. Deployment	
	<p>To what extent do programs succeed in developing effective work teams that address care needs of the served populations? Are provider-to-provider interactions/discussions more frequent and effective?</p> <p>What is the most effective way to carry out the intervention with patients: to work with patients one-on-one (and in what settings) versus in groups?</p> <p>What are the best ways to contact patients? (both from the patient and the provider point of view)</p> <p>Are patients, themselves, trained on new behavior or interactions with information technology? How do the workers follow up to ensure that the trainings stick with the patients (long-term adherence)</p> <p>Is it more effective to hire new workers or contract for a portion of the time of existing workers in other organizations (or freelance)?</p> <p>Are providers able to work at the 'top of their license'?</p>
C. Satisfaction	
	<ul style="list-style-type: none"> · How has the innovation changed the incidence of burnout among staff? · How has the innovation changed incidence of stress among staff? · What are current rates of staff intent-to-leave current practice? · How have rates of staff retention and turnover changed over the course of the innovation? · To what extent are different kinds and levels of staff satisfied or dissatisfied with the care they are able to provide? · To what extent are different kinds and levels of staff satisfied with their working conditions? This would include factors such as satisfaction with colleagues, other staff, income, organizational policies, etc. · To what extent do different kinds and levels of staff report satisfaction or dissatisfaction with specific components of the intervention? This would include components introduced as part of the intervention (e.g. a mobile computing platform; a new workflow process; support from community health workers). · How has staff satisfaction or dissatisfaction changed as a result of the intervention? · If the innovation is limited to a subgroup of staff/providers within an organization, what are the unintended consequences/spillover effects on the satisfaction of staff/providers <i>not</i> involved in the intervention?
IV. PRIORITY POPULATIONS	
A. Populations	
1. Medical priority groups	<p>To what extent do the awardee interventions include patients from priority populations?</p> <p>To what extent do the awardee interventions address meeting the needs of priority populations as a primary focus?</p> <p>To what extent do the awardee interventions focus on addressing the needs of priority populations (e.g., functional limitations which would impact ability to manage conditions)?</p>
2. Non-medical priority groups	<p>To what extent do the awardees address non-medical priority groups and underserved populations?</p> <p>Were awardees able to increase access to care for non-medical priority groups and underserved populations, and how? In what types of care settings?</p> <p>Are there key underserved populations that were not included in the awardees' patient populations?</p>

Domain	Questions
B. Impact	
1. Cost reduction/savings 2. Clinical outcomes	<p>What are the estimated cost savings, if any, among priority groups?</p> <p>What are the estimated health and health care (e.g., access, QoL, quality, care coordination) outcomes among priority groups?</p>
V. CONTEXT	
A. Endogenous factors	
1. Leadership	<p>Was there a clearly designated champion/leader/point person(s) to oversee implementation?</p> <p>To what extent were “point-of-service” providers and/or patients involved in planning and implementing the innovation? How was the need for the innovation communicated to them?</p> <p>To what extent did senior management in the organization provide resources (e.g., staffing, time, funding) needed to implement the innovation?</p> <p>To what extent did implementation of the innovation involve coordination with outside stakeholders (e.g., units and/or organizations)?</p>
2. Team science	<p>What were the key characteristics of the awardee team that would affect implementation of the innovation?</p>
3. Organizational features	<p>What were the unique characteristics of the awardee that affected the implementation and success of the innovation?</p> <p>What key assumptions are required concerning the host organizations’ capacities?</p> <p>To what extent did organizational features support or conflict with implementation?</p>
4. Stakeholder Engage.	<p>To what extent did stakeholder engagement affect the relevance, transparency, or adoption of the innovation?</p>
B. Exogenous factors	
1. Policy/political environment	<p>To what extent did the policy and political environment support or conflict with implementation?</p>

Exhibit D.2: Core Research Questions with Analytic Approach

Core Research Questions	Main Analytic Approach
PROGRAM DRIVERS	
<p>Which central innovation processes are expected to affect changes in behavior and/or systems? What are the commonalities and differences among the various models posited by awardees? Complex/High-Risk Portfolio: What are the awardee theories of action that support the innovation theory of change for the complex/high risk target population?</p>	QUALITATIVE
INTERVENTION	
<p>Components of Intervention Which intervention components (e.g., training and technical assistance) are provided in support of implementation? How much of each component is provided and according to what schedule (e.g., one time, periodically)? How did unexpected events support or conflict with successful implementation of the innovation?</p>	QUALITATIVE DESCRIPTIVE STATISTICS
<p>Dosage What “dosage” of the innovation is delivered to patients, providers, and other target populations? Does it differ among provider sites within an awardee’s program? Complex/High-Risk: How does the “dosage” of intervention programs compare with the dosage provided from a usual source of care? How do variations in the dosage of the intervention that was delivered to the target population impact innovation award outcomes of health, health care, or costs, with health broadly defined to include well-being, function, and health-related quality of life?</p>	QUANTITATIVE
<p>Program Fidelity Were there unintended consequences as a result of deviations from program fidelity? Complex-High Risk: Did deviations in program fidelity occur for complex/high risk models? If so, to what degree did deviations from fidelity impact outcomes of health, health care, or costs (with health broadly defined)? What role did complex/high risk care recipient self-determination or informal caregiver preferences play in deviating from planned procedures?</p>	QUALITATIVE QUANTITATIVE
<p>Modification to Intervention Did awardees and their delivery sites modify the interventions? To what extent did these modifications or variations in model affect quality, cost, or health outcomes? Complex/High-Risk: To what extent did patient self-determination or caregiver preferences account for deviations from planned procedures?</p>	QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE

Core Research Questions	Main Analytic Approach
<p>Self-monitoring Intervention To what extent are systems in place to monitor implementation on an ongoing basis? Complex/High-Risk: Do awardees in the HCIA complex/high risk group use self-monitoring to make changes in their programs? Which approach or system do they use (e.g., process measures, outcomes analysis, CQI)? If so, what types of changes had a greater impact on outcomes_(health, health care, or costs)?</p>	<p>QUALITATIVE QUANTITATIVE</p>
<p>Theories of Change and of Action Which implementation activities are designed to activate the innovation's theories of change and of action?</p>	<p>QUALITATIVE</p>
<p>Reach Did the program meet its proposed target enrollments of patients and trainees (relevant to evaluability/sample size)? Did the program's rollout/implementation schedule stay on track or were there delays? Were any of the interventions redeployed or adopted beyond their original proposed uses?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS</p>
<p>Assistive Technology Complex/High-Risk: Was assistive technology utilized in the implementation of complex/high risk models? What role did assistive technology play in implementing the innovation?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS</p>
<p>Durable Medical Equipment Complex/High-Risk: What role did the use of durable medical equipment play in implementing the innovation?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS</p>
<p>PROGRAM EFFECTIVENESS</p>	
<p>Care Coordination & Utilization Measures To what extent do the models improve care coordination? To what extent have levels of utilization changed? To what extent are there unintended consequences for utilization? To what extent have levels of ED utilization and observation stays changed? To what extent has intensity of inpatient utilization changed (e.g., LOS, SNF vs. hospital days)? How do changes in utilization and improvements in care coordination vary among subgroups of patients?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE</p>
<p>Program Costs (IIB1) What are the one-time costs associated with program start-up? What are the costs associated with program operation? What are the anticipated new costs associated with program sustainability? Complex/High-Risk: Were aspects of the intervention or other services curtailed because of cost considerations? Were any curtailed because of regulations, anti-trust, or other policy-related considerations? What types of in-kind contributions to complex/high risk care occurred (e.g., informal caregiving and donated technology)?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS</p>

Core Research Questions	Main Analytic Approach
<p>Expenditures How are the models designed to reduce expenditures (e.g., changing the service the population utilizes, reducing the volume or utilization of services, changing the cost of services)? To what extent did the program change charges and expenditures for all care (including social supports) in the target population?</p>	QUALITATIVE QUANTITATIVE
<p>Health Outcomes To what extent does the intervention improve patient desired outcomes (satisfaction, support for patient’s priority goals, confidence in care system), reported directly or via proxy? Does the intervention result in any unanticipated negative health outcomes? Does the impact of the intervention vary by population subgroup, e.g., Medicare only/dual eligible; disability status; age; race or ethnicity, geographic location?</p>	QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE
<p>Causal Pathways for Interventions with Multiple Components Can we learn anything about causal pathways? In particular, for interventions with multiple components, which aspects of the intervention are primarily responsible for observed effects?</p>	QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE
<p>Timeliness of Services Complex/High-Risk: To what degree did the timeliness of services to complex/high risk patients in a community setting impact patient outcomes? Was there perceived delay in receipt of services? In availability of needed service? Which aspects of timeliness impacted delivery of services of this set of awardees in the community?</p>	QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE
<p>Satisfaction with Care How satisfied are patients with the care they receive?</p>	QUALITATIVE DESCRIPTIVE STATISTICS
<p>Safety Complex/High-Risk: Which measures of patient safety are available or can be developed for complex/high risk patients in community settings that are innovating?</p>	QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE
<p>Informal Caregiver Experience Complex/High-Risk: In what ways are aspects of the patient’s informal caregiver’s experience (e.g., access, perceived care coordination, provider-patient communication) enhanced or worsened by the intervention(s)? In what ways are aspects of informal caregivers’ experiencing face-to-face access, seamlessness of services, and provider communications affected by the interventions?</p>	QUALITATIVE DESCRIPTIVE STATISTICS
<p>WORKFORCE ISSUES</p>	
<p>To what extent do programs provide training for existing staff? To incorporate new staff effectively? How effective and efficient are the various training models? Complex/High-Risk: To what degree do awardees employ competency-based training? If they do, what is the impact of competency-based training techniques on well-being, function, HRQOL? On costs? What is awardee retention of trainees in workforce? Complex/High-Risk: What can be learned from modifications in trainee roles and tasks after training that may inform workforce transformation, regulation, and policy?</p>	QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE

Core Research Questions	Main Analytic Approach
IMPACT ON PRIORITY POPULATIONS	
<p>Does the intervention affect health outcomes that are most important to the target population? What contribution did the program make in reducing disparities in patient access to care? Complex/High-Risk: To what degree do the complex/high risk patient models serve non- Medicare and Medicaid populations? (e.g., non-beneficiary populations: uninsured or private pay)?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS QUANTITATIVE</p>
CONTEXT	
<p>Complex/High-Risk: What is the impact of community context on awardees' approaches to serving complex and high risk patients? What community supports enhance the interventions and which hinder implementation?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS</p>
<p>Leadership Was there a clearly designated champion/leader/point person(s) to oversee implementation? To what extent were "point-of-service" providers and/or patients involved in planning and implementing the innovation? How was the need for the innovation communicated to them? To what extent did senior management in the organization provide resources (e.g., staffing, time, funding) needed to implement the innovation? To what extent did implementation of the innovation involve coordination with outside stakeholders (e.g., units and/or organizations)?</p>	<p>QUALITATIVE</p>
<p>Team Science What were the key characteristics of the awardee team that would affect implementation of the innovation? Are providers given feedback on their own performance and relative to others?</p>	<p>QUALITATIVE DESCRIPTIVE STATISTICS</p>
<p>Organizational Features What were the unique characteristics of the awardee that affected the implementation and success of the innovation? What key assumptions are required concerning the host organizations' capacities? To what extent did organizational features support or conflict with implementation?</p>	<p>QUALITATIVE</p>
<p>Stakeholder Engagement To what extent did stakeholder engagement affect the relevance, transparency, or adoption of the innovation?</p>	<p>QUALITATIVE</p>
<p>Policy and Political Environment To what extent did the policy and political environment support or conflict with implementation?</p>	<p>QUALITATIVE</p>