



2020

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Recommended Citation

Elwy, A. Rani; Koppelman, Elisa; Parker, Victoria; and Louis, Chris (2020) "Addressing social disconnection among frequent users of community hospital emergency departments: A statewide implementation evaluation," *Patient Experience Journal*: Vol. 7 : Iss. 3 , Article 22.

DOI: [10.35680/2372-0247.1501](https://doi.org/10.35680/2372-0247.1501)

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Cover Page Footnote

This research was supported through a contract with the Massachusetts Health Policy Commission to Boston University School of Public Health to evaluate the CHART Phase 2 Investment Program. Principal Investigator: Chris Louis, PhD This article is associated with the Policy & Measurement lens of The Beryl Institute Experience Framework. (<http://bit.ly/ExperienceFramework>). You can access other resources related to this lens including additional PXJ articles here: http://bit.ly/PX_PolicyMeasure

Addressing social disconnection among frequent users of community hospital emergency departments: A statewide implementation evaluation

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Abstract

We conducted a qualitative exploration and implementation evaluation of a Massachusetts policy initiative, the Community Hospital Acceleration, Revitalization, and Transformation (CHART) investment program, to examine how CHART innovations aimed at reducing unnecessary emergency department (ED) visits also addressed patients' social disconnection problems according to a social connection framework (structural, functional, quality or multilevel). We performed interviews with 236 stakeholders (hospital managers, CHART providers, staff, and community partners) one-year post CHART implementation. Interviews were analyzed using a directed content analysis approach. Data were then mapped to levels of the social connection framework. Our results support that social disconnection, described as "loneliness" and "social isolation" by stakeholders, met the definition of a structural social connection problem according to our framework. These structural problems led patients to the ED for reasons not always related to their physical health. CHART innovations involving home visit programs, elder services interventions, work flow changes in the ED, and regular telephone follow-ups provided functional level emotional and tangible support to meet these structural problems. We did not find substantive support for mapping interview data to the quality and multi-level dimensions of the framework. Innovations to address high ED use, according to stakeholders, provided functional level emotional and tangible support to address structural level problems of social disconnection. Future work should examine the sustainability of innovations in a value-based healthcare climate, and the effectiveness of these programs on reducing ED utilization.

Keywords

Social disconnection, qualitative research, community hospitals, stakeholders, implementation evaluation

Introduction

Background

Social connection is crucial to human development, health, and survival, but has been largely ignored in the literature as a social determinant of health.^{1,2} Recent literature supports this relationship between social connection and health. In a systematic literature review of 126 studies focused on the relationship between older adults' (60 years or older) social relationships and their health care utilization, strong evidence was identified for the association between weaker social relationships and increased rates of readmission to hospital.³ In a cross-sectional study of frequent users of emergency services in a Canadian province, 37-49% identified as lonely, 14% had gone hungry in the preceding month, and 43% had financial difficulties. Further, 78% had mobility problems, 55% had difficulty with self-care, 87% experienced pain and discomfort, and 67% reported anxiety and depression.⁴

Social *dis*connection is defined as consisting of social isolation, low social integration, loneliness and relationship distress.^{1,5} Meta-analytic data show that multiple levels of social connection exist, and involve the interconnections among differing ties and roles in social networks (e.g., structural), support provided or perceived to be available via social relationships (e.g., functional), and perceptions of positive and negative aspects of social relationships (e.g., quality).^{6,7} Those who lack social connection at each of these structural, functional, or quality levels are at greatest risk for significant health events.¹ Previous research has also shown that a multilevel approach, combining structural, functional and/or quality levels, is often needed for both defining social disconnection and in determining how best to address it⁸ (Table 1).

Importance

Loneliness, a key aspect of social disconnection, is synonymous with perceived social isolation, and has been associated with a number of adverse health outcomes and increased healthcare utilization.⁹ Although only 27% of the

Table 1: Definitions of social connection levels

Social Connection Level	Definition
Structural	The existence and interconnections among differing social ties and roles, such as marital status, number of social contacts, social integration, social contact frequency, perceived social isolation
Functional	Functions provided or perceived to be available by social relationships, such as received or perceived support (emotional, tangible, informational)
Quality	Perceptions of positive and negative aspects of social relationships, including marital quality and relationship strain
Multilevel	Combined approach addressing structural, functional and/or quality levels

From Holt-Lundstadt, et al.¹

U.S. population lives alone, 20-43% report experiencing frequent or intense loneliness,¹⁰ with loneliness increasing in older age.^{11,12} Loneliness and weak social connections are associated with a reduction in lifespan similar to that caused by smoking 15 cigarettes a day and even greater than that associated with obesity.⁷ Loneliness is also associated with a greater risk of cardiovascular disease, dementia, depression, and anxiety.¹³⁻¹⁷ In a nationally representative sample of those aged 54 years and older, higher levels of loneliness were associated with more depressive symptoms, independent of other factors such as age, gender, ethnicity, education, income, marital status, social support and perceived stress.¹¹ In a paper examining the various components of social connectedness, loneliness was found to represent the most important component of social connectedness associated with depression severity, suicidality, and health-related behaviors.¹⁸ Mortality, examined over a seven-year period, was found to be significantly higher among socially isolated and more lonely participants in a longitudinal study of 6,500 men and women aged 52 years or older in the U.K.¹⁹ Similarly, a study of adults in Finland found that the risk of mortality increases as one becomes more lonely and isolated.²⁰ In terms of healthcare use, a recent study found that lonely older adults were more likely to have increased physician visits.²¹ Additional studies have found that loneliness is more common among those with increased urgent care and emergency department visits,²² and among older adults, 42% experienced loneliness, which was associated with increased rates of emergency hospitalizations.²³ Loneliness has been described as a public health epidemic,^{1,2,24} and recent survey data shows that there are no significant differences between genders and races when it comes to average loneliness scores.²⁵

Goals of this Investigation

In light of these mounting data about the detrimental effects of various components of social disconnection on health, we conducted a qualitative exploration,²⁶ that sets the stage for further work, to explore the role that social disconnection plays among frequent users of emergency departments (ED) in Massachusetts community hospitals, who were taking part in the state's Community Hospital

Acceleration, Revitalization, and Transformation (CHART) investment program.²⁸ Established through Massachusetts' cost containment law, Chapter 224 of the Acts of 2012,²⁸ the Massachusetts Health Policy Commission (HPC) developed the CHART program to make phased investments in community hospitals to enhance care for Massachusetts' most vulnerable patients, including patients with behavioral health needs,²⁹ reduce unnecessary hospital utilization, and to prepare for value-based care delivery.²⁷ Our team was competitively selected by the HPC to carry out an evaluation focused on Phase 2 of the CHART program, which provided investments to 27 community hospitals through single or joint hospital awards (Table 2).

Our evaluation objective was to examine how CHART hospitals met their Phase 2 goals, to 1) maximize appropriate hospital use, through reducing readmissions and emergency department (ED) visits, 2) enhance behavioral health care, and 3) improve hospital-wide (or system-wide) processes to reduce waste and improve quality and safety. However, through our interviews, a theme of social disconnection and loneliness among CHART hospital patients emerged, which our team explored further. Our objective is to report these findings in this paper: 1) how CHART hospital team members described social disconnection in their patient population, and 2) the levels of social connection that CHART innovations addressed, among this population of frequent ED users. Many patients have ongoing needs that are often not addressed during ED visits,³⁰ and which may be related to social disconnection. We used the social connection framework presented in Table 1 as an organizing construct for this paper, to examine the variety of ways that ED innovations can support patients and reduce unnecessary visits—through physical, behavioral, social-cognitive and emotional channels.¹

Methods

Study Design and Setting

The 27 community hospitals who received Phase 2 CHART investment awards (Table 2) met eligibility as

Table 2: MA Community Hospitals Participating in Phase 2 of the CHART Investment

MA Community Hospital	CHART Investment Award (\$)
Addison Gilbert Hospital	1,269,057
Anna Jacques Hospital	1,200,000
Baystate Franklin Medical Center	1,800,000
Baystate Noble Hospital	1,200,000
Baystate Wing Hospital	1,000,000
Berkshire Medical Center	3,000,000
Beth Israel Deaconess Medical Center-Milton	2,000,000
Beth Israel Deaconess Medical Center-Plymouth	3,700,000
Beverly Hospital	2,500,000
Emerson Hospital	1,200,000
Harrington Memorial Hospital	3,500,000
HealthAlliance Hospital	3,800,000
Holyoke Medical Center	3,900,000
Lawrence General Hospital	1,482,654
Lowell General Hospital	1,000,000
Mercy Medical Center	1,300,000
Milford Regional Medical Center	1,300,000
Signature Healthcare Brockton	3,500,000
Winchester Hospital	1,000,000
UMass Marlborough Hospital	1,200,000
*MA Joint Community Hospitals	CHART Investment Award (\$)
Addison, Beverly, Winchester and Lowell General Hospitals	4,800,000
Athol Memorial Hospital and Heywood Hospital	2,900,000
Baystate Franklin Medical Center, Baystate Noble Hospital, Baystate Wing Hospital	900,000
Hallmark Health System	2,500,000
Southcoast Hospitals Group	8,000,000

Data retrieved from the Massachusetts Health Policy Commission ²⁹

***CHART Phase 2 awards to two or more hospitals, or to a healthcare system**

defined by CHART investment program regulation 958 CMR 5.00: Administration of the Distressed Hospital Trust Fund: 1) those that are not a major teaching hospital, 2) those whose relative prices are lower than the statewide median relative prices, and 3) those that are non-profit.³¹ Implementation of CHART was staggered at each of the hospitals, with all hospitals beginning between September 2015 and February 2016. CHART implementation followed a year-long planning period which took place from October 2014 through September 2015. Interviews used in this study were conducted during the initial year of our evaluation activities and occurred between September and December 2016. Our qualitative exploration and evaluation were approved by the Boston University Medical Campus Institutional Review Board.

Selection of Participants

We conducted semi-structured interviews with key CHART stakeholders at each of the 27 hospitals. Stakeholders were identified through informal conversations with each hospital's CHART program managers, who described their investment program and the various components of the innovations. Emails inviting interview participation were then sent first to each hospital's CHART program point of contact, who then contacted the key stakeholders for that site, including external community partners (such as elder services and visiting nurse agencies) with whom the CHART program was collaborating on the innovation. Incentives for participation were not offered. One-hour interviews with each stakeholder were scheduled, and in-person hospital site visits were arranged to allow for these face-to-face

interviews. If a stakeholder was unexpectedly unavailable during the site visit, the interview was conducted by telephone at a later date. Two members of the study team attended each site visit to conduct between 7-10 interviews per site.

Semi-structured Interviews

Interview guides were developed based on the goals of the CHART investment program, and tailored toward the stakeholders we were interviewing: hospital managers (chief medical officers, chief operating officers, chief nursing officers, CHART program managers), CHART staff team members (physicians, social workers, registered nurses, licensed practical nurses, community health workers, information technology specialists, business office staff) and community partners (non-profit organizations, police departments, local health departments, and schools collaborating with the hospital to fulfill CHART goals). We first obtained verbal consent from each participant to record the interview. Once consent was obtained, we proceeded to ask questions pertaining to each participant's view of the reason for participating in the CHART program, how this aligned with hospitals' existing initiatives and missions, exploratory questions about patient populations, perceived barriers and facilitators to participating in CHART, examples of best practices, perceptions of the implementation process, beliefs about sustainability, and more. Questions were open-ended, designed to elicit as much information as possible from the participant's point of view (Table 3, See Appendix).

Qualitative Data Analysis

Our qualitative approach to this study is in line with established guidelines.³² Each interview was transcribed verbatim by an independent transcription company. We constructed an *a priori* framework of codes initially developed from the implementation, improvement and sustainability goals of the CHART program.²⁹ Using a directed content analysis approach³³, we used this *a priori* framework deductively, capturing data that matched with our coding frame. This approach, however, allows for the emergence of additional codes, not identified through the *a priori* coding framework, and identified through inductive methods. One of our emergent codes was that of social disconnection. Our team added this code to our coding framework. We then developed a second stage in our coding process to further explore the concept of social disconnection. Our team pulled all text from all interviews where social disconnection was identified, and then further analyzed these text segments according to the social connection framework.¹ Four evaluation team members initially coded four transcripts independently using this framework, using the same directed content analysis approach.³³ This team continued to meet weekly over the course of the early coding of the CHART interviews, to establish a reliable and valid coding framework through a

discussion and consensus process, including the emergent codes that were added through this inductive process. The framework was determined reliable and valid after each member of the team had coded 10 interviews independently. Qualitative data were entered into the NVivo 10 qualitative data analysis software package, for ease of reporting and organization of the data.³⁴ Data are presented below according to this social connection framework.

Results

Characteristics of Study Subjects

We conducted 236 interviews with stakeholders involved in each CHART investment program, which included 114 hospital managers, 92 hospital team members and 30 external community partners. Most CHART stakeholder mentions of social disconnection problems appeared to be related to social isolation, low social integration or loneliness, which aligned with the structural level of the framework established by Holt-Lundstadt et al (2017).¹ Few mentions, if any, were made about patients' relationship distress or quality of relationships (e.g. quality level). Stakeholders' descriptions of their healthcare innovations to reduce ED visit frequency aligned with the functional level of the social connection framework to address these structural problems, with most appearing to provide emotional support through tangible functions such as home visits and participation in community programs. Below we present exemplar quotes illustrating these structural level social disconnection problems, and the functional level innovations addressing emotional and tangible support for these problems, described by these various CHART stakeholders across the 27 community hospitals. Table 4 provides more details on exemplar innovations implemented during this CHART Phase 2 evaluation.

Main Results

Defining Social Disconnection – Descriptions of Problems at the Structural Level

During interviews, many CHART stakeholders commented on their perceptions of the number of social contacts, social integration, social contact frequency, and perceived social isolation their patients in the CHART program likely had, and how these problems related to these patients' use of the ED. In addition to living alone, such patients generally lacked regular venues or mechanisms for interacting with others. One CHART interviewee noted that "we have some lonely, lonely patients." Another CHART staff member stated that [the team] had tried to provide education to CHART patients on how to use the ED, telling them that they "don't have to wait until your symptoms have worsened to go to the ED," but that "some of them definitely do take to the hospital as a way of getting interaction with people if

Table 4: Examples of Innovations Implemented in CHART Phase 2

Vulnerable Population	Health Delivery Challenge	Solution Implemented
Patients who are non-English speaking immigrants	Patients with limited English comprehension, and little access to public transportation, often return to the ED for care that could be provided in an outpatient setting	Social worker collaborates with local health departments to establish better transportation systems so that these patients can access more local health care providers and avoid returning to the ED
Patients who are homeless	Following discharge, hospitals sometimes lose contact with homeless or transient patients who have been given care plans	Instituted a Community Health Worker (CHW) role, supported by behavioral health-trained nurse and complex care coordinator, to help CHW feel comfortable with and empowered to find and engage with patients in the community
Patients with terminal illness	Access to patient-centered palliative and end-of-life care has been insufficient in many community settings across MA, leaving patients and families to handle the terminal illness of a family member on their own	Multiple CHART hospitals hired palliative care RNs and other staff members to intervene earlier in the process of care delivery, following diagnosis and during treatment. These care providers facilitate conversations with hospice and other agencies and work with patients' families to offer and implement palliative care services.

they're lonely at home." A CHART stakeholder stated that "we know that loneliness is a predictor of readmission, social isolation is a predictor, there is [sic] all these other components of people's lives that have nothing to do with medical conditions."

CHART stakeholders recognized that patients' ED use often occurred not only for physical and/or mental health problems but for issues related to social disconnection:

"[patients have] chronic severe medical conditions, but the primary [reason] is they're coming for things like social isolation, homeless, a lot, a lot of substance abuse, be it alcohol or the opiate epidemic, and then chronic mental illness. I guess, I was personally, was very surprised. I thought I was going to be dealing with a lot of COPD and things like that. And yes, we do have that, but it's more of the other issues, like the social issues that people are coming in for. So, that's our main core."

Another stakeholder stated that "Sometimes it's also just if it's someone who is elderly, maybe they're lonely, and when you go to the hospital you feel very safe and it's wonderful to have that connection."

Healthcare Innovations to Reduce ED Visits—Functional Level Support for Structural Problems

When describing hospitals' efforts to reduce ED visit frequency among high utilizers, many of the CHART stakeholders talked about the functional level emotional support that they seek to provide to patients, to address patients' social disconnection problems. Talking with

patients to understand their reasons for seeking care in the ED and building trust with patients through conversation so that patients can see that the healthcare system or hospital is trying to help them, were two main ways that CHART teams were attempting to address issues related to the structural level of social disconnection. Stakeholders discussed the functional level tangible support provided to patients, such as home visits, workflow changes in the ED to incorporate conversational care plans, and community resources, yet these appeared to be mechanisms for providing functional level emotional support through conversations and trust building.

Home visits or telephone check-ins were perceived as being emotionally supportive for people who are suffering from social isolation. For example, one interviewee stated that:

"the success we've had with [name of program] has been because we are providing visits to people who suffer from social isolation...it doesn't have to be somebody who has X number of letters after their name, but I think frail older adults that suffer from chronic illness and comorbidities, even if there was a home visitor kind of program, my guess is they would do better."

At times, this functional level emotional support could be provided when a patient returned to the ED. When getting to know frequent users of the ED through community hospitals' new focus on this population, one CHART stakeholder described a specific care plan created to address social disconnection:

“[a patient’s] biggest need is really, she really was very lonely. Right? And these [hospital staff] were two people that she really liked and spent a lot of time with. So our care plan was for those two to spend a lot more time with her, and to be called [when] she came into the emergency room to talk about things. You know, ‘you just swallowed two batteries, how come?’ You know? Without going ‘Oh my God, she swallowed two batteries!’”

Functional level emotional support was also described when trying to figure out how best to assist patients once they returned to the ED. One CHART staff member described this need for creating emotional support when talking with her colleagues about care plans that can incorporate conversations with CHART patients who return to the ED:

“you have to change your mindset around this ... you’re sitting with her to spend some time [trying] to figure out what’s going on with her, not just making an assumption about why the patient is there... Why don’t you stop a minute, and see what it is that the person is looking for? Because the thing that she identifies as the—her biggest need is really, she really was very lonely.”

Trust was described as critical to providing functional level emotional support, whether in the ED or when discussing the types of support available with patients. Eventually, once trust is built, functional level tangible support, such as a home visit or elder service intervention, can be provided. One interviewee stated that:

“there are lots of very lonely elderly people out there, so they count on—so what we’re trying to do is get them to trust us and if they don’t want to let us in their home, that’s okay. But you know what? Eventually, they do. Eventually, something happens that the calls [lead to], ‘yes, you can come over now’. So it’s kind of like you have to pass the test.”

Another CHART stakeholder also talked about their hospital’s elderly population and the need for this population to be able to trust hospital and community staff. Once trust is established through efforts at providing functional level emotional support, patients may then start to participate in functional level tangible support, such as in programs they can participate in, in their own communities. One stakeholder stated:

“if it’s someone who is elderly, maybe they’re lonely, and when you go to the hospital you feel very safe and it’s wonderful to have that connection. And also, being able to connect people then to being able to know, oh, there are great resources where you can go and have a day group where you can meet other people. I think that just being able to connect people to resources, but I think that trust part is huge.”

The concept of trust is yet again mentioned as a way for those who have experienced social disconnection to become connected to healthcare in a way that does not involve the ED—thus receiving functional tangible support once functional emotional support is provided. At one community hospital, a stakeholder described frequent ED users as experiencing the following:

“homeless, substance abuse, IV drug use, type of patient population where—or even just, like, lonely. Really, those type of patients, that really just don’t—either—I don’t want to say the system has failed them, but they either feel like the system has failed them, or don’t have faith in the system, and I think that the CHART social workers really do a great job of kind of aligning all the services that they need for them, and building that trust.”

Limitations

This study is not without limitations. Our interviews occurred at one point in time, approximately one year into each hospital’s CHART program implementation, and thus, we were unable to determine whether or not these programs were sustainable over time. Moreover, we have not linked innovations addressing social disconnection to actual changes in ED use, a key aspect of sustainability. Although many CHART stakeholders provided information on how their innovations appeared to increase trust and social connection, until these are linked to improvements in health care use, it is difficult to see how such programs will be sustained over time. Future research in this area must focus on determining this cost-effectiveness and specifically, the structural or functional level of each hospital or ED innovation for reducing social disconnection problems—here referred to by CHART stakeholders as social isolation and loneliness—over time.

Discussion

In our qualitative study of 236 stakeholder interviews, we found that community hospital managers, CHART staff team members, and community partners identified social disconnection problems among their patients, describing these primarily as social isolation and loneliness, as a factor related to their frequent use of the hospitals’ ED. These descriptions of social disconnection among CHART patients align with structural level problems of the social connection framework.¹

Stakeholders described providing a functional level of emotional support for these structural problems through conversations and trust building, and a functional level of tangible support such as home visits, telephone check-ins and community resource referrals and participation. Through hiring community health workers or partnering with social workers employed by community-based organizations, community hospitals were able to create

enhanced home visit programs and ED work role changes to involve care plans and more conversations that resulted in directly addressing patients' needs for greater social connection. These innovations were made possible through the grants awarded to community hospitals by the Massachusetts Health Policy Commission. Ideally, following the conclusion of the CHART program, Massachusetts community hospitals will continue to use the learnings from this investment program to align more closely with accountable care organizations (ACO) where vulnerable populations are the subject of care delivery efforts.

One example as to how this work can be continued is in the MassHealth ACO program. Massachusetts recently commenced its state-wide MassHealth (Medicaid) ACO program (via a 1115 Medicaid waiver) aimed at improving care and lowering costs for low-income patients.³⁵ Many CHART hospitals are participating in this program and will be providing services to patients where social disconnection is a primary issue. The MassHealth ACO program may allow for continuation and sustainability of targeted home visit programs and evolving work roles that address the social determinants of health and other health needs of these vulnerable patients. Our team is currently examining the sustainability of the CHART Phase 2 innovations, through follow-up interviews with a subset of the stakeholder participants in the current study. In these analyses, we will also explore whether social disconnection among patients continues to be an area that community hospitals are targeting, and how sustainable they perceive these efforts to be.

Within this discussion of social disconnection appeared the concept of trust, with stakeholders acknowledging that one reason frequent users of the ED return to the hospital is because they have established trust with key staff, and how some CHART innovations helped to create the trust patients needed outside of the hospital system. Such innovations offered alternative individuals and/or venues through which such trust could develop, such as home visits from nurses, or visits with community health workers who had been through similar experiences (e.g., addiction, homelessness). In previous research, a causal relationship has been shown to exist between trust beliefs and loneliness, mediated by social disengagement.³⁶ Thus, by engaging CHART patients in conversations about their care, and providing them with tangible support, CHART team members appear to have helped to improve trust among their patients.

Through our interviews with a range of critical stakeholders, we identified that social disconnection plays a large role in non-medical frequent uses of community hospital EDs, that social disconnection problems appear to be structural in nature, and that innovations designed to address these problems operated at functional levels of

social connection, to improve patients' ability to connect with trusted others. Hospital managers, CHART staff team members, and community partners working in collaboration to improve patient care, reduce hospital waste and set the groundwork for sustaining these innovations all recognized how social disconnection was impacting hospital resources, and together developed plans for addressing this. Future collaboration in new ACO models between academic medical centers and community hospitals (such as the MassHealth ACO program) should further explore whether and how these collaborations result in less waste of hospital services and improved patient social connections.

Acknowledgements

This research was supported through a contract with the Massachusetts Health Policy Commission to Boston University School of Public Health to evaluate the CHART Phase 2 Investment Program. Principal Investigator: Chris Louis, PhD

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Appendix

Table 3: Interview Guide and Probes Used in CHART Phase 2 Evaluation

Interview Question	Probes
1. Why has your organization decided to participate in the CHART program?	What was the impetus for the hospital to undertake this initiative? Is the CHART program an extension of previous work or is it a new initiative? What initiatives (e.g., Quality Improvement programs) existed prior to the implementation of the CHART program that set the stage for this program?
2. How does this project align with the overall mission and other ongoing initiatives at your organization?	Did your organization have prior experience with accountable care prior to CHART? (e.g., pay for performance, bundled payments, ACO contracts)? Is your organization (or its parent health system) in the insurance networks of most major insurers in the state (Medicare Advantage plans, Medicaid plans, commercial payers)?
3. Which patients are you targeting with your CHART project(s)?	Has (or is it anticipated that) the target population changed or expanded over time?
4. How and when (before or after discharge) are patients identified as being in the target population?	How (and by who) are patients enrolled in the program? How are patients identified on subsequent return visits?
5. Where does your organization currently stand in its implementation of the CHART Phase 2 program?	Who leads the CHART program at your organization? Where is this person in the organizational chart? How involved has senior leadership been in the oversight of implementation activities? Have significant changes in your CHART project hindered implementation effort?
6. Can you tell me about any activities your organization needed to make in redesigning care for the CHART program?	What types of staff are involved in delivering (internally or externally) this care to patients? Were other programs, tools, or curricula (e.g., LEAN) adopted from other sources for this CHART program? Are these positions supported by the CHART Investment program? Were new people hired specifically for the CHART program? How has this changed over time?
7. How do program staff at your organization work with patients (e.g., what is the nature of the intervention)?	Patient education, regular check-ins (phone or in-person), group or “peer support” sessions, coordination with other care providers or community services, care team meetings?
8. How are transitions in care from the hospital setting to other care providers and community services handled?	What information is shared between care providers? Who is ultimately responsible for the transition of patient care?
9. How were staff trained to deliver services and perform their role as part of the CHART program?	How was this training developed? Who developed this training and has it been revised since its initial use?
10. How are IT systems used as part of the CHART program at your organization?	How is IT used to identify patients in the target population? How are IT systems used to facilitate communications among internal and external care providers? If they are used, how are “alerts” used to notify care providers that a CHART patient is receiving services (at your organization or another).
11. What data are tracked over time about individual program enrollees or aggregate program results?	What specific quality, financial and/or utilization measures are tracked? By which managers and/or committees? How does the tracking system trigger any actions from care providers or other staff? If so, what specific actions are triggered? What tracking system do you use and how was this decided? How are data aggregated and summarized for program evaluation and/or monitoring? Who is responsible for data analytics, development of dashboards, etc. at your organization?
12. How are community partners involved with CHART program patients that receive care at your hospital? (Please provide for titles and organizations for community partners, where applicable.)	What role(s) do these community partners play? How were community partners involved in the care redesign phase? Please describe any barriers your hospital faced in getting these community partners “on-board.” How is data shared with community partners? Are there any formal/contractual agreements with partners?

Appendix (Cont'd.)

Table 3: Interview Guide and Probes Used in CHART Phase 2 Evaluation

Interview Question	Probes
13. Who is involved in any of the CHART calls, Technical Assistance, or other interactions with Health Policy Commission staff?	Are any hospital leaders involved? Why or why not?
14. Which components of the CHART program do you believe to be the most effective? Ineffective?	Patient identification, enrollment of patients, care transitions, patient education and engagement, tracking patients over time? How are you leveraging or learning from these experiences?
15. What is your early data showing you in terms of program impact?	Utilization, quality of care, patient engagement and/or satisfaction, employee satisfaction? If utilization has declined, to what extent has this impacted hospital revenue?
16. What impacts has the CHART program had on non-participating health care providers in your community?	Changing referral patterns, similar programs implemented at different hospitals, etc.? Increased or decreased volumes in the target patient population? Or, are patients in the target population receiving more services at your hospital than in the past?
17. What have been the greatest challenges your organization has faced with the CHART program?	Staff recruitment and/or retention, training, patient identification, patient enrollment, patient engagement, patient compliance, IT, leadership support, finding and/or maintaining community partnerships? What resources (staff, IT, financial, etc.) is your organization lacking to maximize the potential benefits from the CHART program? What other internal or external barriers may be affecting the implementation of the CHART program at your organization?
18. What have been the greatest accomplishments your organization has experienced with the CHART program?	Staff recruitment and/or retention, training, patient identification, patient enrollment, patient engagement, patient compliance, IT, leadership support, finding and/or maintaining community partnerships, internal collaboration between departments? What resources (staff, IT, financial, etc.) has your hospital gotten the most benefit from?
19. Looking forward, which components of the program do you think will survive the CHART Phase 2 program?	Staff hired as part of the CHART program, information sharing with community providers, care transitions and follow-up care? How do you plan to find the resources to sustain program components?
20. How will your participation in the CHART program help you participate in new delivery system/payment reform efforts in Massachusetts?	Please explain whether you believe your hospital will attain new Accountable Care Organization (ACO) or managed care contracts based on its participation in the CHART program.