Case report

How patient experience informed the SafeMed Program: Lessons learned during a Health Care Innovation Award to improve care for super-utilizers

Jill D. Nault Connors[a,*,1,2,3], Bonnie L. Binkley[b,1,3], J. Carolyn Graff[c,2,3], Satya Surbhi[d,1,2], James E. Bailey[e,1,2,3]

[a] Department of Emergency Medicine, Indiana University School of Medicine, Indianapolis, IN, United States
[b] Department of Medicine, Division of General Internal Medicine, University of Tennessee Health Science Center, Memphis, TN, United States
[c] Department of Health Promotion and Disease Prevention, University of Tennessee Health Science Center, Memphis, TN, United States
[d] Center for Health System Improvement, University of Tennessee Health Science Center, Memphis, TN, United States
[e] Departments of Medicine and Preventive Medicine, University of Tennessee Health Science Center, Memphis, TN, United States

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ABSTRACT

- Program theory of change must account for the lived experiences of medically and socially complex patients in order to affect dysfunctional patterns of acute care utilization.
- Mental and emotional health, access to self-management resources, and patient-provider communication are key issues of importance to super-utilizing patients.
- Transformation of didactic, patient education sessions to interactive, self-management support group sessions achieved success in improving patient engagement.
- Lack of collaboration and compliance-oriented healthcare culture are primary threats to successful implementation of innovative healthcare delivery programs.
- Linkage and navigation roles of healthcare staff are important in improving patient access to existing community resources, but further health system investments are required to effectively integrate community-based and social services into care delivery.
- Peer support interventions are underutilized but hold great promise for addressing behavioral health needs of medically and socially complex patients.

1. Background

In 2012, the Center for Medicare and Medicaid Innovation (CMMI) awarded 107 Health Care Innovation Awards (HCIA) across the country to test new ideas to deliver better health, improved care, and lower costs for high-risk Medicare and Medicaid populations.[1] Through the HCIA program, CMS sought to support rapid deployment of innovative care delivery models that could be operational within six months of a three-year project award. Unlike typical grant-funded projects, the co-operative agreement award mechanism used by CMMI required both self-monitoring and continuous planning for improved program performance during implementation. In July of 2012 the University of Tennessee Health Science Center in partnership with the Methodist Le Bonheur Healthcare system received support for Project SafeMed, a

care transitions program with an innovative focus on medication management.[2,3] Since medication errors, adverse events, and low adherence were identified as key issues contributing to system-wide readmission risk, the program placed primary emphasis on medication management using methods piloted in the Asheville model and PILL-CVD Project.[4–6] The enhanced medication management strategy included a comprehensive medication review prior to hospital discharge, in-home medication adherence monitoring and targeted medication therapy management interventions, group-based medication adherence and risk reduction workshops, and 90-day follow-up comprehensive medication reviews. In addition, the program incorporated outreach strategies for standard care transition elements such as symptom triage, self-management education, care coordination, and post-discharge follow-up (Fig. 1). Services were provided by hospital outpatient
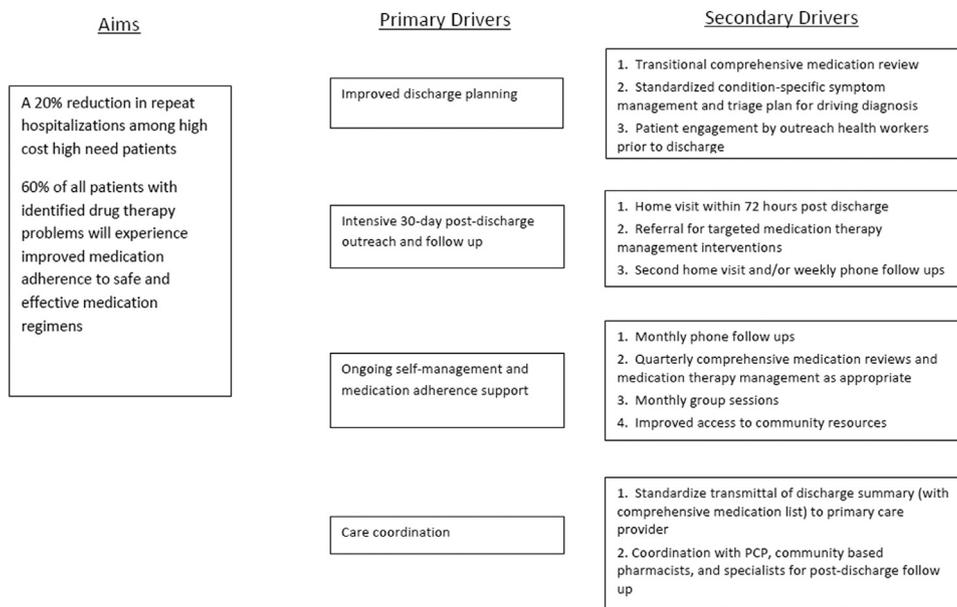
Project SafeMed Key Driver Diagram

Fig. 1. Driver Diagram.

center-based pharmacists, an advanced practice nurse, and outreach teams of pharmacy technicians and licensed practical nurses who served as professional extenders.

The primary problem encountered during program implementation was an initial failure to fully recognize and address behavioral and health-related social needs among the target population. Inadequate consideration and responsiveness to patient priorities resulted in difficulty engaging the target population in program activities and poor initial program performance. Listening to patients became a key strategy to understanding patient needs and priorities and making care more patient-centered. The case study describes both barriers encountered and actions taken by project stakeholders to address behavioral and health-related social needs of patients served by the SafeMed Project.

2. Organizational context

Methodist Le Bonheur Healthcare is the largest health system in the Memphis metropolitan area, and its three largest hospitals serve the majority of the city's medically underserved and primary care shortage areas. However, Memphis has multiple competing hospital systems and predominantly independent and small primary care practices that are not well integrated with inpatient providers. As such, the greater Memphis area has very few accredited patient-centered medical homes, and few of its practices offer comprehensive primary care services including advanced components such as integrated behavioral health, social work, outreach, or disease management services. Hence, similar to many healthcare markets across the country, the Memphis area has a relatively immature infrastructure on the continuum of delivery system integration.

The project's targeted population included community-dwelling middle age and older adults residing in some of the city's most disadvantaged communities. Patients recruited for participation had high acute care utilization; multiple chronic conditions with two or more diagnoses of hypertension, diabetes, coronary artery disease, congestive heart failure, and chronic lung disease; Medicaid and/or Medicare insurance; and polypharmacy.[2,3,7] As shown in Table 1, levels of medical complexity were high in the eligible patient population. Some project team members anticipated that many patients would be socially

Table 1
Baseline Characteristics of SafeMed Participants.

Characteristics	SafeMed Participants (N = 285)
Age (mean, SD)	57.0 (15.3)
Female gender (%)	60.7
Race/Ethnicity (%)	
Non-Hispanic White	13.0
Non-Hispanic Black	75.4
Other/Hispanic	11.6
Insurance (%)	
Medicare Only	20.7
Medicaid Only	39.3
Dual eligible	40.0
Comorbidity (%)	
Hypertension	97.0
Diabetes	75.7
Congestive heart failure	77.3
Coronary artery disease	66.5
Asthma	48.7
Chronic obstructive pulmonary disease	55.9
Depression/anxiety	35.2
End-Stage Renal Disease	18.6
≥ 2 comorbidities	98.4
Charlson comorbidity index, mean (SD)	6.2 (3.1)

Characteristics of the SafeMed participants in the 2-year period prior to enrollment. Demographic variables were assessed using Medicare and Medicaid eligibility files. Comorbidities were measured using International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM codes] present on at least one inpatient, outpatient, or professional claim. Of 350 SafeMed participants, we found complete eligibility data for 285 (81.4%) patients.

complex as well; however, data documenting these needs were not available at project outset.

The initial organizational structure for the project was hierarchical (Fig. 2). The leadership team was headed by two co-principal investigators, including a clinician-researcher and a health system administrator. In addition, guidance and decision-making at the leadership level were provided by chief medical officers and their designees, academic faculty representing schools of pharmacy and nursing, and non-clinician researchers with expertise in areas such as health economics. Community stakeholders engaged at the start of the project
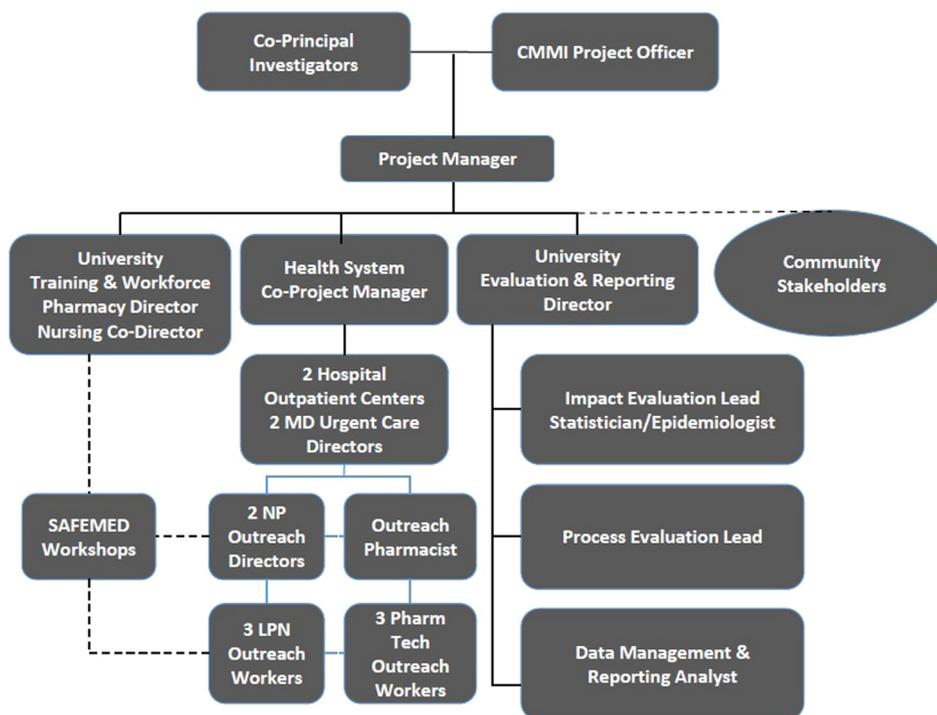
Fig. 2. Organizational Chart.

primarily represented primary care and payer organizations. Although representatives from the Medicare Quality Improvement Organization played a patient advocate role on the leadership team, there was no direct involvement of patients initially. Inadvertently, direct care staff who ultimately had the greatest interaction with patients were effectively at the bottom of the decision-making hierarchy in a top-down approach to decision-making.

The theory of change for the SafeMed program was influenced by political and financial interests of key partners during the HCIA application phase. Hospitals were under pressure to reduce readmissions or face potentially severe financial penalties under the Hospital Readmission Reduction Program. Hence, the bottom line goal for the hospital partner was to reduce readmissions. An early partnership between the hospital and a national pharmacy chain sparked interest in collaborative efforts around pharmacy interventions—such as bedside delivery of medications—to reduce readmissions. Even though pharmacy chain prioritization of market share over collaboration contributed to dissolution of the nascent hospital-industry partnership during the application process, pharmacy interventions remained a primary focus. Pharmacy expertise was sought from the academic partner who recommended scaling up medication therapy management (MTM) interventions. A strong evidence base for the impact of MTM on medication adherence existed. However, the evidence for effect on readmissions was not as strong. It was hypothesized that by extending MTM into the home that a reduction in readmissions via decreased drug therapy problems and increased medication adherence could be achieved.

3. Personal context

Four key leadership team members were convinced that a narrow MTM focus would be inadequate, particularly for medically and socially complex patients with high utilization. These individuals had extensive backgrounds in mental health, social sciences, and patient advocacy and operated from whole-person, bio ecological, or empowerment paradigms. As protagonists, their contributions to making care more patient-centered during planning stages included activities such as

challenging program theory, exploring emerging intervention strategies that were being tested in similar populations, and generating information about behavioral and health-related social needs to drive decision-making. Over the course of the project the protagonist group grew from a few team members to include two national technical assistance providers and multiple local community partners. During early to mid-implementation stages, technical assistance providers were key in gaining leadership and direct care staff buy-in for addressing behavioral and health-related social needs. During mid to late implementation, relationships were developed with community partners including local patient advocacy groups and providers of community-based services allowing the project greater traction in addressing these needs among patients.

4. Problem

The origins of initial failure to adequately address behavioral and health-related social needs of patients stemmed from two underlying factors, healthcare culture and lack of collaborative capacity within the project. Compliance-oriented rather than patient-centered care was a key hallmark of the dominant healthcare culture, and not limited solely to within the project. The problem with compliance-oriented care is that it puts the onus for health outcomes on patients without appreciation of barriers to self-management. Alternatively, patient-centered care is aligned with patients' lifestyles, family situations, culture, and values. The former was manifested in multiple interactions between patients and providers. At its most extreme form, expecting a patient who is homeless and has food insecurity to comply with a complicated variable insulin dosing regimen is clearly not patient-centered. However, less extreme manifestations of compliance orientation included frustration experienced by staff in getting patients to take their medications appropriately. For example, one staff member reported, "I've tried everything, I even took her phone and set an alarm to remind her to take her meds". Other examples of compliance-oriented care ranged from developing readmission risk interviews with simple 'yes' or 'no' questions to monitor compliance with diet and other lifestyle behaviors to suggestions that program staff look in patients' refrigerators

during home visits to assess compliance with dietary recommendations without regard to patient privacy concerns.

The adverse impact of the dominant healthcare culture was compounded by insufficient collaborative decision-making capacity. Major decisions were heavily influenced by individuals who were "squeaky wheels" and tended to dominate decision-making processes. Examples of their biases that influenced initial program strategies were notions that depression and anxiety have little effect on *simple* self-management behaviors like taking medications and that cost is not a barrier to medication adherence due to the availability of insurance coverage for medications and discounted drug programs in retail pharmacies.

Protagonists working within this compliance-oriented culture needed and sought objective evidence to create a climate for culture change. The initial approach to gather evidence was a rudimentary attempt to screen for social risk factors. However, identifying and developing measures, adding screening burden during enrollment, and developing a database management system to capture screening data did not yield sufficient benefit. So, the key protagonists began to use qualitative techniques to collect information from patients regarding their experiences trying to get needs met within the healthcare and social service delivery systems.

Efforts to solicit patient experience throughout the project period included: 1) two initial focus groups with a total of 21 patients and ongoing reciprocal learning during monthly group-based sessions with an average of 11 participants; 2) quarterly interviews throughout the project period with staff to assess program challenges, opportunities, and successes; and 3) in-depth individual patient interviews used for intensive care planning in later stages of the project with five medically and socially complex patients who had continued patterns of high acute care utilization following enrollment. An experienced research team member led qualitative data collection and conducted the majority of interviews. Data were captured via transcribed digital recordings or field notes as appropriate. For example, initial focus group sessions were recorded but in later sessions main ideas from patients were captured on a flip chart for review of accuracy among participants during summarization of the session. Both flip chart written records and individual notes were taken by direct care staff as co-facilitators. Following group sessions, debriefing was conducted among co-facilitators. Furthermore, quarterly interviews with staff as a group on specific topics such as medication access were typically recorded but accounts of individual staff-patient interactions were more often captured in written notes. All in-depth patient interview results were captured through written notes and ecomaps completed with patients that documented quantity and quality of patient interactions with healthcare providers, social or community-based providers, and social networks. Patient experience data was regularly incorporated into various sections (e.g., planned activities for improved program performance, stories from the field, etc.) of quarterly reports to the funder and reviewed by direct care staff as well as members of the research team prior to submission. Of importance, knowledge generated was intended for quality improvement purposes rather than to produce transferrable knowledge for publication. Even so, trustworthiness of data was of great importance and ensured to the extent possible via prolonged engagement, creating an audit trail, and member checking.

Examples of patient experiences related to behavioral and health-related social needs are shown in Table 2. Pre-determined categories including housing, nutrition, transportation, and medications were used to solicit information about health-related social needs. Among patients served by the SafeMed program, resource inadequacy rather than absence of resources was a primary consideration. For example, chaotic or overcrowded households were reported as common barriers to continued recovery at home after discharge from the hospital. Interestingly, loss of transportation (i.e., driving privileges) and ability to secure adequate food intake was reported as a result of disability or chronic pain associated with medical complexity. Although patients were not directly asked about emotional and mental health; anxiety,

depression, and loneliness emerged as primary themes during the initial focus groups. These themes retained relevance across the broader population served throughout the project period as determined through inquiry during ongoing patient-provider interactions. In addition, throughout descriptions of interactions with providers across healthcare settings via both individual and group interviews, poor patient-provider communication emerged as another key issue of importance to getting overall health needs met (Table 3).

5. Solution

Solutions to the problem of addressing behavioral and health-related social needs varied at different stages of the project. During the initial six-month planning period, the leadership team discussed adopting components of emerging complex care management delivery models such as the Camden Coalition of Healthcare Providers.[8] These models differ from standard care transition delivery models because they also encompass components such as front loading of social services, integration of behavioral health services, and inclusion of social workers and community health workers in team-based care.[9] Initially, these ideas did not get sufficient traction due to not only low perceived importance, but also competing resource allocation for implementing medication management strategies throughout participating sites within the Methodist system and resistance to alter the research plan. Cognizant that the program was ill-equipped to serve some of the highest need patients (e.g., those with unsheltered homelessness, serious mental illness, or substance use disorders), exclusion criteria were established to limit program participation by those with the highest levels of social complexity. Despite exclusion criteria, mental health and health-related social needs (i.e., housing instability, food insecurity, and transportation) of eligible patients were underestimated.

In the first six months of program implementation, solutions were limited to minimal compromises in order to keep the project moving forward. The leadership team decided to test the original plan for the initial six-month implementation period and then to reevaluate the need for programmatic change. To assuage the concerns of protagonists regarding inadequate behavioral health and social services capacity, in-kind support from hospital-based case management was offered to assist in providing linkage to community-based service providers. At the end of this initial implementation period self-monitoring demonstrated that the SafeMed team was struggling to recruit and engage the target population. Furthermore, no apparent impact on key processes of care (e.g., primary care visits following hospital discharge) or outcomes (e.g. medication adherence or acute care utilization) were seen. Although recognition of behavioral and health-related social needs from patient experiences was growing, lack of results during this period provided an impetus for change.

The key turning point for engaging leadership in the change process was the provision of national technical assistance by HealthInsight during a site visit. Using concepts such as 'mental mapping' and 'choice architecture' created buy-in for incorporating patient perspectives into program structure and activities. Support from HealthInsight reinforced CMMI expectation for continual improvement in program performance. Among direct care staff, exposure to patient-centered approaches to care was provided by national technical assistance from the Camden Coalition of Heathcare Providers. After attending a 'super-utilizer' boot camp, staff entered a 'readiness' stage for change. Having leadership and staff on board provided the critical mass to overcome resistance to change. A collaborative environment developed among direct care staff, leadership, and research/administrative support staff in which continued information from patients was used to generate discussions about how the program could better meet needs of patients. As a result, the prior hierarchical structure of decision-making was replaced by a process of achieving group consensus on changes to program strategies. Because continuous learning and feedback to facilitate performance improvement were a burden on staff, change activities were negotiated

Table 2
Behavioral and health-related social needs among patients enrolled in SafeMed.

Theme	Patient and Staff Comments[a]
Depression & Anxiety	• *"I don't want to be bothered with no medicines…there are times when I just don't want to be bothered with anyone or anything."* [Patient] • *"I can't really talk to my sister, she's got her own problems…when I get really down I call the number on the back of my blue and white card…the nurse is like, oh it's you again Mr…"* [Patient]
Loneliness	• *"It's hard to talk to family members about what's going on. They don't understand what I'm going through."* [Patient] • *"She [daughter] ain't come to see me, [tearfully] no one really cares about me."* [Patient]
Housing	• *"He was doing so good then last week he was back with two broken arms after getting jumped walking in his neighborhood. I went to visit him after he was discharged and couldn't find him. I finally found out that his landlord had moved him for safety reasons. When we visited the new boarding home, the conditions were unfit for living."* [Staff] • *"After I get out [of the hospital] sometimes I check into [extended stay hotel] or stay with my cousin in [different state] because I just can't deal with everything going on when I don't feel good."* [Patient]
Nutrition	• *"I'm not gonna lie, sometimes the food budget gets a little tight…I love fish, sometimes I'll go fishing and it helps to stretch the food a little farther. But when my pancreas flares up it's like my whole life stops. The pain is so great, everything is on hold."* [Patient] • *"When we went to his house there were canned goods lined up on a shelf in his room above everyone's reach so they couldn't steal them…a stick was propped against the refrigerator door to keep it closed but bugs could still get in."* [Staff]
Transportation	• *"He has no one to pick up his meds … Last time he gave the money to some dude who just took it and never brought them."* [Staff] • *"Ever since they did surgery [lower extremity bypass] my leg hasn't been right. They've done it twice now. I don't know why they did it again if it didn't work the first time. I don't think it healed right. It still hurts but he said there's nothing else he can do. I can't get even across the street before the light changes. Last time the car spun me right around.* [Patient no longer able to drive]
Medications	• *"He was experiencing a hard time getting the rest of his medicines so we transferred his prescriptions to [Pharmacy A] who has a discounted drug plan that included two of his nebulizer solutions. Although he didn't get them on his insurance, he was able to pay $8 for both of them which came to a total of $16 for a month's supply and he was able to afford that in comparison to over $100 that [Pharmacy B] was going to charge him."* • *"He has limited vision and was confused about which insurance card actually provided his drug coverage so he handed me three insurance cards … I made several phone calls to Medicare drug programs, his pharmacy, and the Social Security Administration to gather information about the Extra Help program and his eligibility. We called the Medicare Extra Help program together to make sure he understood what the representatives on the phone were telling him."*

[a] Data were collected through a combination of patient and program staff interviews by academic qualitative researchers providing program support.

Table 3
Unproductive patient-provider interactions reported by patients participating in SafeMed.

Theme	Patient and Staff Comments[a]
Lack of shared information for decision-making	• *"My [gastrointestinal] doctor wanted me to have surgery on my pancreas and everyone was on board except for my kidney doctor, he warned me that it would not be a good outcome. … he saved my life."* [Patient]
Scare tactics	• *"He's been in the emergency room several times now. He has a new girlfriend and is worried because it [implantable cardioverter-defibrillator] fires when he has sex…she [outpatient provider] told him to stop having sex or he'll be digging up daisies."* [Staff]
Stigma	• *"I had a prescription for pain and it helped a little. I started walking more but my knees still hurt. When I went back he told me he wouldn't give me anything else, treated me like I was just trying to get drugs. I've tried everything, the ibuprofen and heating pads don't work…he don't know me and how I feel."* [Patient]
Blaming	• *"Something happened when they put the stent in, the chest pain worsened and I had to go back. The doctors all acted like they were mad at me or something."* [Patient]

[a] Data were collected through a combination of patient and program staff interviews by academic qualitative researchers providing program support.

on an ongoing basis. In addition to increased collaborative capacity, there was a shift in healthcare culture as project stakeholders began to see patients in a different light.

Throughout the mid to late phases of implementation, substantial efforts were made to make existing strategies more patient-centered and implement new strategies for addressing behavioral and health-related social needs. However, planned improvement beginning in the second year of a three-year project period required consideration of realistic opportunities for improvement. Collaborative activities focused on engaging local community partners in: 1) self-management and peer support group sessions, 2) mental health support, 3) access to community resources, and 4) patient-provider communication between direct care staff and patients.

5.1. Group sessions

Program faculty originally developed a series of 90-min didactic medication adherence and risk reduction workshops to be delivered in a group setting to enrolled patients. Observation of the didactic workshops during early phases of implementation revealed that patients were not highly engaged, and session leaders curtailed natural supportive interaction among patients at the 'start' of information dissemination. The initial didactic education sessions were re-framed as interactive self-management support group sessions that provided opportunities for both real-time, reciprocal learning between patients and

providers as well as peer support. These sessions started with patients talking about self-management challenges and successes experienced related to topics such as diet, medications, symptom monitoring and management, and interactions within provider and social networks. The key change for providers was to prioritize listening and validating patient experiences rather than overloading patients with information irrelevant to their current challenges. The format helped patients to generate self-management ideas based on other patients' successes as well as requested input from individuals with knowledge expertise. In addition to all direct care staff, community guests were also regularly invited to participate in the interactive discussions on patient-driven topics such as, *Improving quality of life with wearable and implantable cardioverter defibrillator devices*. In this context, strategies for self-management were more aligned with patient priorities, lifestyles, and preferences. In addition, patients were able to play a powerful role in providing emotional support to each other as exemplified by the patient quote, "It's [group session] like an AA meeting…everyone can say what we need and be in peace at home."

These sessions were also used to engage local community partners through a process of beginning with a simple request to provide information and resources during group sessions and in some cases, progressing to deeper commitment and ongoing collaborative efforts. Local community partnerships to address emotional and mental health needs of patients gained the greatest traction.

5.2. Improving mental health support

Several additional approaches were taken to provide support for emotional and mental health of participants. Based on an audit of problem lists in the medical record, nearly half of all patients enrolled had a pre-existing diagnosis of anxiety and/or depression at program enrollment. This led to attempts to implement the Screening, Brief Intervention, Referral, & Treatment (SBIRT) model to identify symptoms of depression and anxiety as well as improve care coordination for mental health needs of patients.[10] However, these efforts required a high level of staff skills to screen accurately, engage patients in discussions about readiness for change, and explore preferences for treatment options based on knowledge of the mental health system. Furthermore, the utility of standardized screening was questionable for identifying relapses of depression and/or anxiety among patients during condition exacerbations. Due to the high burden associated with effective implementation of an SBIRT model, strategies were revised to coordinate with Alliance Health, an outpatient mental health service provider contracted by the hospital, to assess and triage patients who expressed emotional distress and were agreeable to talking with someone.

Efforts to incorporate formal peer recovery support within the program were also undertaken. Initially, a certified peer recovery specialist (CPRS) from the local National Alliance on Mental Illness affiliate was invited to a support group session to facilitate sharing of experiences managing physical health with depression and anxiety during a group session. This relationship led to improved access to the evidence-based Bridges™ recovery support class[11] among patients with behavioral health challenges or an interest in becoming a CPRS. In addition, the relationship led to joint efforts with the State Department of Mental Health and Substance Abuse Services, Office of Consumer Affairs and Peer Recovery Services to identify, train, and incorporate certified peer recovery specialists into program services to lead on-site support group classes, engage hard-to-reach patients in care, and support targeted patients in developing and achieving their own recovery plans.

5.3. Improving access to community resources

Although attempts were made to streamline access to various community services that address health-related social needs, time was the primary barrier to developing relationships and collaborative capacity with community agencies providing services related to housing, food insecurity, and transportation. However, a dedicated social worker in a navigator role was hired to address patient health-related social needs such as housing, food, and transportation. The leadership team saw this as a better alternative compared to relying on an already over-burdened hospital case management department to link patients with community resources. The dedicated program social worker succeeded in meeting the needs of many more program participants on a case-by-case basis. Efforts were also made to coordinate with the existing hospital community benefit program to directly address health-related social needs, but these activities were limited to the single most impoverished zip code in Memphis.

Great gains were also made in reducing out-of-pocket costs for medications among patients. Pharmacy staff assisted patients in pharmacy shopping to get all meds filled by one pharmacy with the lowest overall cost and matching patients with transportation challenges to pharmacies offering home delivery services. In addition, hospital pharmacy staff listed medications in priority order for program participants on discharge so that the most expensive medications would be covered first under Medicaid formularies. Through group sessions, a representative of the local Area Agency on Aging was invited to help patients understand and navigate Medicare Part D pharmacy benefits and demonstrate existing tools for predicting out-of-pocket medication expenses. An ongoing relationship was also established for assistance referrals of individual patients.

5.4. Improving patient-provider communication

Training in motivational interviewing (MI) was the primary strategy used to improve patient-provider communication. Although patients reported unproductive patient-provider interactions in multiple settings, the program primarily invested in improving communication styles of internal direct care staff. Initial staff training prior to program implementation incorporated a high-level overview of the MI approach, but it was not in-depth enough to produce changes in communication skills. Hence, the program engaged a local health coach consultant to provide more intensive training in beginning MI skills using open-ended questions, affirmation, reflective listening, and summarization (OARS) communication techniques.[12] The goal of the training was to incorporate these skills throughout patient interactions during key program processes (e.g., enrollment interview, targeted medication therapy management sessions, readmission interviews, home visits, and group sessions). Methods of training included integrating role play into didactic introduction of MI principles, modeling MI adherent communication, and simulating patient conversations with facilitators. In addition, staff were encouraged to independently practice in pairs and to reflect on skill growth during integration into patient interactions.

In the beginning, staff demonstrated difficulty using these skills, regardless of educational background or prior training in MI. Over time, all staff developed greater competencies in communicating with patients. This achievement was critical to the transition of outreach workers (i.e., pharmacy technicians and licensed practical nurses) to the role of community health workers. Table 4 highlights examples of differences in communication strategies during simulated patient conversations. After training ended, feedback was generally supportive. However, staff felt they needed more experience to increase confidence in using the skills.

"I feel pretty comfortable using the skills we learned…I think the more I do it, the easier it will get."

"My goal is to rely less on telling patients what they should be doing and try to help patients set realistic goals instead."

"It's kinda different but it's pretty cool… I can see how it works with patients, I just don't think I'm very good at it."

"I didn't realize how important the patient relationship is."

"I guess I'll have to start believing that my patients can change."

"I think this is just a lot of extra work and I'm not sure it's going to change my patients' compliance."

Furthermore, staff feedback for improved training included alleviating 'production pressures' associated with program targets for enrollment and service delivery during training, using more direct modeling of MI adherent interactions, and incorporating empathy skills training as a pre-cursor to MI training.

Additional strategies to improve patient-provider communication included using AHRQ's Questions are the Answer toolkit[13] during a self-management support group session designed to explore patient-

Table 4
Examples of SafeMed program staff communication before and after training in motivational interviewing.

Non-MI adherent (pre-training)	MI adherent (post training)
Asking questions during readmission interview	
Do you eat a lot of foods that are high in calories, fat, or sodium? (closed-ended)	How do the foods you eat affect your weight/ blood sugar/blood pressure? (open-ended)
Affirming patient responses during education session	
Do you know how much fat and sodium are in the cheeseburger meal?	That's a great step, you went from eating Big Mac meals several times a week to eating a cheese burger meal only once a week.
Use of reflective listening during home visit in response to:	
"You wanna know what you can do to keep me out of the hospital? You can get everyone outta my house!"	
I'm sorry, I can't really do anything about that.	Sounds like it can get pretty crazy around here and that makes it hard to feel better when you get home from the hospital. If I understand what you're saying, peace while you're trying to recover is important to you?
Summarizing a brief conversation during an individual follow up contact	
Why haven't you called your doctor if it's still bothering you?	So you feel like you have a good relationship with your doctor but since the last visit you aren't taking the medicine prescribed for your hip because you're worried about your ulcer, you're not sure what the x-rays showed, and you're not sure whether you have an appointment for follow-up. You also said it's probably time to follow-up by calling your doctor's office since it's been about 3 weeks. That sounds like a really good idea.

provider interactions within the healthcare system. Patients also received individual assistance to prepare for primary care follow-up appointments during outreach visits with program staff. If needed, SafeMed community health workers also attended provider follow-up visits with patients to improve the quality of information exchange between patients and providers.

6. Unresolved questions and lessons for the field

This case study demonstrates the need to move from a compliance-oriented mentality of *'if you build it, they will come'* towards engaging patients in the beginning of quality improvement efforts to ensure care is patient-centered. In the SafeMed experience, gaining patient perspective was critical to recognizing and addressing the behavioral and health-related social needs of vulnerable super-utilizing patients. Despite the trials and tribulations experienced by the SafeMed Program, the project was ultimately successful in engaging patients (Fig. A3-A), increasing participation in program activities (Fig. A3-B), and improving post-hospitalization follow-up with primary care providers (Fig. A3-C). Furthermore, preliminary data suggest that the program reduced acute care utilization and costs among SafeMed participants.[2,3,14] Data analysis showing impact to emergency visits, hospitalizations, 30-day readmissions, and overall costs in participants compared with controls will be publicly available in the final outcomes paper.

From the implementation science perspective, collaboration among stakeholders and creating awareness of biases associated with compliance-orientated care were two key elements of program infrastructure that contributed to making care more patient-centered. Perhaps the greatest achievement of the SafeMed Program was moving the dial on healthcare culture away from focusing primarily on patient compliance with provider-centric care toward developing supportive environments for optimal self-management aligned with care that is tailored to patients' lifestyles, family situations, culture, and values. There must be greater inclusion of the implementation science discipline in any healthcare innovation to scale evidence-based care to real world settings.

Ongoing challenges to improving care transition efforts include improving awareness that all readmissions are not equal. Although traditional care transition programs may be effective in reducing readmissions among a general patient population, they are likely insufficient to impact repeated readmissions among medically and socially complex patient populations. While new models of chronic care management are emerging, infrastructure of health systems must also be developed to address behavioral and health-related social needs of this patient population. Currently, the Accountable Health Communities (AHC) demonstration project through CMMI is testing the effect of health system investments to integrate existing community-based and social services into care delivery.[15] Using AHC model terminology, needed investments involve "alignment" activities that require additional time and collaboration with providers of community-based services. Furthermore, given finite mental health resources, innovative ideas to incorporate patient preferences into addressing unmet areas of need in this patient population are essential. For example, formal peer support groups may be an effective alternative to cognitive behavioral therapy in mitigating depression and anxiety for many patients with multiple chronic conditions.[16] Continued learning from the challenges as well as successes of these and future efforts to innovate healthcare is of great importance.
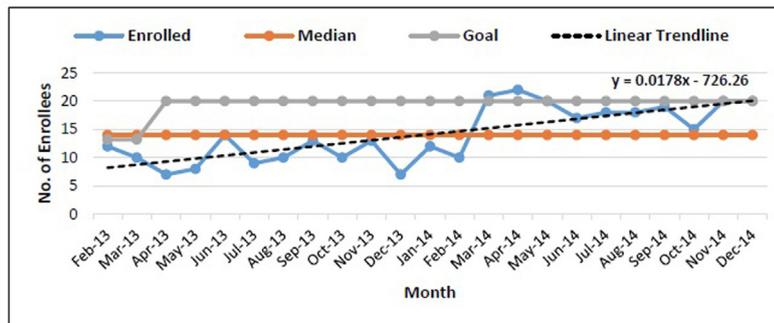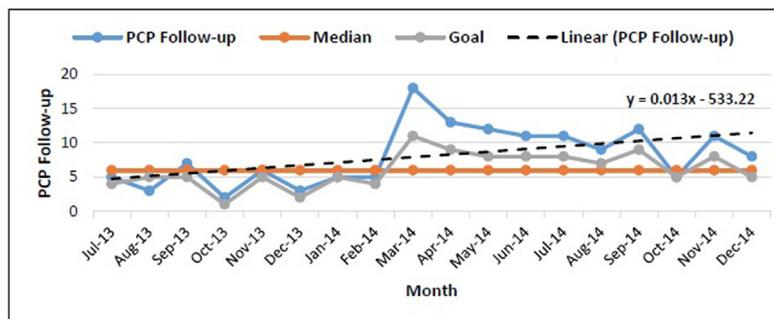
Appendix A

See Fig. A3

A: SafeMed program enrollment
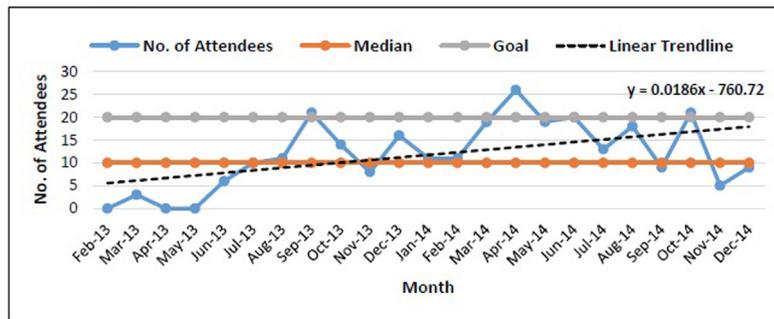
B: SafeMed support group session attendance

C. SafeMed 30-Day primary care provider (PCP) follow-up after hospital discharge. Please note that the number of patients with PCP follow up visits within 30 days of discharge was falsely deflated from February to June, 2013 due to missing data and has been omitted.

Fig. A3. Trend Charts. Fig. 3: Key Project SafeMed process improvement measures tracked for ongoing program improvement, including: A) SafeMed program enrollment, B) SafeMed support group session attendance, C) 30-day primary care provider (PCP) follow-up after hospital discharge. Note: Total number of eligible patients = 458. Total number of patients enrolled = 325.

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