Professional Case Management
Vol. 14, No. 6, 282–293

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Implementation of the Care Transitions Intervention
Sustainability and Lessons Learned

Monique M. Parrish, DrPH, MPH, MSSW, Kate O'Malley, MS, RN, GNP, Rachel I. Adams, BS, Sara R. Adams, MPH, and Eric A. Coleman, MD, MPH

ABSTRACT

Purpose: During care transitions, the movement of patients from one healthcare practitioner or setting to another, patients are vulnerable to serious lapses in the quality and safety of their medical care. The Care Transitions Intervention (CTI), a 4-week, low-cost, low-intensity self-management program designed to provide patients discharged from the acute care setting with skills, tools, and the support of a transition coach to ensure that their health and self-management needs are met, was implemented in 10 hospital–community-based partnership sites in California over a 12-month period. Five of the partnerships were hospital-led sites, and 5 were county-led sites. The primary goal of the project was to identify factors that promote sustainability of the intervention by (1) assessing features of each site's implementation and the site's likelihood of continuing the program; (2) soliciting feedback from the sites; and (3) analyzing site and patient characteristic data and data from the CTI measurement instruments (the 3-item Care Transition Measure [CTM-3] and the Patient Activation Assessment [PAA] tool).

Primary practice setting(s): The CTI was implemented in 10 California hospital and community-based organizations that received training and technical support to implement the intervention.

Findings: Presence of leadership support was determined to be the critical factor for sites reporting interest in and capacity for long-term support of the CTI. Sites identified engaging hospital- and community-based leaders, providing additional transition coach training, and the assigning of consistent and dedicated (funded) transition coaches as valuable lessons learned. Key findings from the measurement instruments indicate that future CTI implementations should focus on medication management, patients with cardiovascular conditions and diabetes, patients older than 85 years, and African American and Latino patients. Mean PAA scores were moderately higher for patients from hospital-led sites than for patients from county-led sites and moderately higher for patients from sites with full plans for continuation than for patients from sites with partial or minor plans to continue the CTI.

Implications for case management practice: This implementation of the CTI, with its flexible design responsive to the diverse needs of patients, hospitals, and community organizations, provides a host of real-world lessons on how to improve and sustain effective patient transitions between care settings. Healthcare systems interested in improving care transitions have a compelling reason to explore the viability of implementing the intervention with attention to developing or addressing the following: strong care transitions leadership; collaborative hospital–community partnerships; the particular needs of diverse communities; patient-level medication reconciliation and management; and tailoring the model to the unique needs of patients with cardiovascular conditions and diabetes.

Key words: *case management, care transitions, leadership, model sustainability, transitions of care, translation into practice*

Care transitions refer to the movement of patients from one healthcare practitioner or setting to another because their conditions and care needs change. These may include transitions from hospitals or nursing homes to home, with or without skilled services. Patients and healthcare delivery systems alike are affected by poorly executed care transitions that are often associated with readmissions with increased complications (Medicare Payment Advisory Commission, 2007). Numerous studies have also documented medication errors, poor communication and coordination between providers from the inpatient to outpatient settings, and a rising incidence of preventable adverse events

The authors have no conflict of interest.

This work was supported by a grant from the Oakland-based California HealthCare Foundation (grant number 06-1478).

Address correspondence to Monique M. Parrish, DrPH, MPH, MSSW, LifeCourse Strategies, Orinda, CA 94563 (mparrish@lifecourse-strategies.com).

Nationally, the rate for hospital readmissions among Medicare beneficiaries within 30 days of discharge is 18%—a rate that suggests a potential underlying system failure and contributes to lower patient satisfaction and rising healthcare costs.

postdischarge (Bolton, Mira, Kennedy, & Lahra, 1998; Forster, Murff, Gandhi, & Bates, 2003; Gittell et al., 2000; Glintborg, Andersen, & Dalhoff, 2007; Moore, Wisnivesky, Williams, & McGinn, 2003; Pippins et al., 2008; Roy et al., 2005). Additional research has addressed the effects of fragmented care and rising readmission rates for certain diagnoses (Clarfield, Bergman, & Kane, 2001; Rich et al., 1995). Nationally, the rate for hospital readmissions among Medicare beneficiaries within 30 days of discharge is 18%—a rate that suggests a potential underlying system failure and contributes to lower patient satisfaction and rising healthcare costs (Jha, Orav, Zheng, & Epstein, 2008; Medicare Payment Advisory Commission, 2007). Although most healthcare delivery systems are aware of the ill effects of poor patient care transitions, they struggle with rising healthcare costs, limited resources, an expanding aging population with multiple chronic conditions, and a lack of collaboration with community providers.

A growing number of healthcare organizations and associations are focusing on how to most effectively ensure safe and high-quality care transitions. These organizations include The Joint Commission, the Centers for Medicare & Medicaid Services and their accompanying quality improvement organizations, the Institute of Medicine, National Quality Forum, the Medicare Payment Advisory Commission, the National Transitions of Care Coalition, the American College of Physicians, the Society for General Medicine, and the Society for Hospital Medicine (Coleman & Williams, 2007). One early regulatory development that set the stage for addressing patient care transitions was the Centers for Medicare & Medicaid Services' § 482.43 Condition of participation: Discharge planning (1994). The regulation stipulates that hospitals must have a discharge planning process for all patients and that hospitals' discharge planning policies and procedures must be specified in writing. It further requires procedural standards for identifying patients in need of discharge planning. Equally important, hospitals must identify at an early stage of hospitalization all patients who are likely to suffer adverse health consequences upon discharge if there is no adequate discharge planning.

Recognizing that more needs to be done to regulate discharge planning and address care transitions, the Centers for Medicare & Medicaid Services (2004) introduced the discharge planning requirements of the Medicare statute (Chiplin, 2005). The statute requires that hospitals discuss with patients and their family members all post–hospital care needs. It further mandates that a post–hospital plan of care and services be developed before discharge, with particular attention given to whether the discharge plan identifies the services that are needed and how those services will be provided. Complementing this effort, the recent 2009 Joint Commission National Patient Safety Goals identify *handoff communications* as a critical goal area. Under the new goal guidelines, healthcare organizations are required to implement a standardized approach to handoff communications, including interactive communication that allows the opportunity for questioning between the giver and the receiver of patient information. Although comprehensive regulatory requirements in care transitions have been slow to develop, a growing body of research in this area, combined with the clinical experiences of practitioners, has led to the development of several intervention models focused on improving patient care transition experiences (Aliotta et al., 2008; Boyd et al., 2007; Coleman et al., 2004; Naylor, Brooten, & Campbell, 1999).

Despite the development of new healthcare interventions, including care transitions interventions, sustaining interventions in the absence of regulatory and financial incentives confound even those healthcare organizations and systems with the best of intentions. Adequate funding is central to the adoption of any best practice model; however, securing appropriate funding and promoting change in clinical practice and service delivery often involve other elements. O'Laughlin, Renaud, Richard, Sanchez Gomez, and Paradis (1998) explored factors related to the perceived sustainability of health promotion interventions. Four variables were independently associated with perceived sustainability:

1. Low-cost or no-cost, yet effective, interventions that require few or no resources from the host organization.
2. Interventions that underwent modification or customization during implementation.
3. The quality of the intervention—provider fit (i.e., interventions that fit well with the host organization's mission, objectives, and routines were more likely to remain viable than those that required adjustment within the organization).

...the results highlight several subgroups of patients with lower scores who may require additional assistance during care transitions including patients with cardiovascular and endocrine disorder/diabetes conditions: older adults (>85 years) and African Americans and Latinos.

4. The presence of a program champion who strongly advocated the continuation of the intervention.

Understanding core components of program sustainability in a world of shrinking healthcare dollars and competing priorities poses important questions on how to best translate research into practice.

On the basis of findings from a randomized controlled trial of the Care Transitions Intervention (CTI; Coleman, Parry, & Chalmers, 2006), a low-cost, low-intensity model developed by the Care Transitions Program (www.caretransitions.org), the California HealthCare Foundation sponsored a 12-month pilot of the intervention, the *Improving Care Transitions Project*. The CTI was designed to address potential threats to patient safety during care transitions by providing patients with the tools and support they need to understand and take a more active role in managing their healthcare needs and care transitions. The model was also designed to provide a framework for encouraging the transformation of larger systems, including improved clinical practice and cost savings attributable to reductions in hospital readmission. This paper highlights lessons learned from the implementation of the CTI, explores factors leading to its sustainability, and summarizes measurements of care transitions experiences.

Methods

The CTI is a 4-week intervention. Through visits and phone calls with a designated transition coach, typically a nurse, social worker, or community worker whose primary role is to "coach, not do," patients develop improved capacity in four conceptual domains or "pillars" (Coleman et al., 2004, 2006; Parry, Coleman, Smith, Frank, & Kramer, 2003):

1. medication self-management;
2. using a patient-centered health record;
3. making primary care provider/specialist appointments; and
4. knowledge of "red flags"—indicators that a health condition is worsening and how to respond.

The transition coach addresses the four pillars with the patient during the various stages of the intervention, which include a predischarge hospital visit; one home visit scheduled 24–72 hours postdischarge; and three follow-up phone calls to the patient (Coleman et al., 2006).

Ten sites were selected via a "request for proposal" process. Sites were required to work in a hospital (sender) and community-based organization (receiver) dyad—five were hospital-led sites and five were county-led sites. County-led organizations included county-affiliated hospital-based community programs, community case management organizations, and area agencies on aging. Each site's participating sender—receiver structure represented a unique partnership; however, all sites functioned similarly in their commitment to employ the CTI model and improve patient care transitions. Transition coaches received training on the CTI model designed to help them make the paradigm shift from being a "doer" who performs tasks for their patients to coaching their patients through skill transfer, building self-efficacy, and providing transition-specific self-care tools. Table 1 profiles the diverse hospital—community partnerships and targeted patient populations. Each site was expected to enroll 100 patients. The referral process, target patient population, and specific construction of the partnership, including the professional background of transition coaches, were the purview of each site.

All sites were required to use two intervention-specific tools with patients, the Personal Health Record (PHR) and the Medication Discrepancy Tool (MDT), along with two measurement instruments, the three-item Care Transition Measure (CTM-3) and the Patient Activation Assessment (PAA) tool (Coleman et al., 2004). The PHR is a paper booklet that patients use to record a core set of health information, including medical history, medications, and follow-up healthcare appointments. The PHR is introduced during the initial hospital visit and remains a central empowerment tool during and after the CTI. The MDT, designed to facilitate reconciliation of medication regimens across settings and prescribers, allows both the transition coach and the patient to address medication problems and discrepancies. The transition coach introduces the MDT at the home visit and uses the opportunity of an identified discrepancy to model the behavior for how the patient might address future discrepancies and medication questions with the patient's primary healthcare provider or pharmacist. Sites also used two additional CTI guides, the *Care Transitions Intervention Activities by Pillar and Stage of Intervention Table* and the *Intervention Activities Checklist*, which

TABLE 1
Care Transitions Project Site Table

	Hospital/ County Led	Primary Grantee	Collaborating Partner(s)	Target Population
A	Hospital	Northern California Hospital (hospital partner)	Skilled nursing facility and rehabilitation center (community partner)	Patients discharged from the hospital to various levels of healthcare in the community. The transition coaches are nursing students from a local university enrolled in their senior-level community/public health nursing rotation.
B	County	Northern California County Human Services Agency, Adult and Aging Division (community partner)	Northern California Hospital (hospital partner)	Patients 55 years or older with complex medical conditions (no severe cognitive deficits) who reside within 15 miles of the county seat.
C	County	County-based volunteer program for patients (community partner)	Northern California Hospital (hospital partner)	Frail, socially isolated individuals with chronic health conditions. Transition coaches are nursing students from local universities.
D	Hospital	Northern California homeless shelter (community partner)	County hospital (hospital partner)	Homeless patients discharged from the county hospital to the homeless shelter.
E	County	Northern California county hospital (hospital partner)[a]	County Aging and Adult Services (community partner)	(1) Adults enrolled in any county health plan program; (2) those who are likely to benefit from the program as determined by the program managers (e.g., who have multiple medical/social conditions); and (3) those who can either themselves or with a family member/advocate engage in the coaching process.
F	County	Northern California County Human Resources Agency (community partner)	Northern California Hospital (hospital partner)	Patients 60 years or older who meet low-income criteria of a specific program and have chronic medical conditions.
G	Hospital	Hospital-linked physician network (community partner)[a]	Northern California Hospital (hospital partner)	Patients with multiple long-term healthcare needs.
H	Hospital	Hospital-based community program for seniors (community partner)	Southern California Hospital (hospital partner)	Patients 65 years and older admitted to the hospital with a diagnosis of congestive heart failure.
I	Hospital	Southern California Hospital (hospital partner)	Home Health Services (community partner)	Patients with heart failure, pneumonia, or COPD who have community discharges and who are at high risk for readmission. Most clients have limited incomes and chronic medical conditions.
J	County	Southern California County Health System (community partner)[a]	Southern California Hospital (hospital partner)	Patients 65 years or older who are covered by the county health plan Medicaid program and who are admitted to the acute hospital with one or more chronic illnesses, such as congestive heart failure, COPD, coronary artery disease, diabetes, cerebrovascular accident, hip fracture, etc.

Note. COPD= chronic obstructive pulmonary disease.
[a]Project teams operating within a capitated system.

highlight specific coaching activities and goals by stage and pillar (Coleman et al., 2006).

The primary goal of the project was to identify factors that promote sustainability of the intervention by:

1. Assessing features of each site's implementation and the site's likelihood of continuing the program;
2. Soliciting feedback from the sites; and
3. Analyzing site and patient characteristics and CTM-3 and PAA scores.

Achievement of the project goal was assessed through a combination of site exit interviews, final project narrative reports, data reports, and comparison

TABLE 2
Three-Item Care Transition Measure[a]

Items	Responses to All Items
1. The hospital staff took my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I left the hospital.	Strongly agree Agree Disagree Strongly disagree Don't know/don't remember/ not applicable)
2. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.	
3. When I left the hospital, I clearly understood the purpose for taking each of my medications.	

[a]The CTM-3 is available in the public domain with no user fees; however, the use of the tool requires permission from the Care Transitions Program. Interested users may visit www.caretransitions.org for instructions on accessing the tool.

of pre- and post–project sustainability plans. Sites were required to describe their sustainability plans in their initial project proposal and later in their final project report.

To understand the factors contributing to project sustainability, the project team comprising California Healthcare Foundation senior program officer, CTI project manager, statistical analysts, CTI technical advisor explored various attributes likely to influence sites' capacity to continue the project. On the basis of research findings on sustainability as well as the project team's observation of the challenges and successes of implementing the model over 12 months, the team developed an initial index of five characteristics identified as variables likely to influence sites' capacity to continue the project (Gatchell, Forsythe, & Thomas, 2005; Kilbourne, Neumann, Pincus, Bauer, & Stall, 2007; O'Laughlin et al., 1998). The initial characteristics included the following:

1. The presence of executive leadership support for the CTI or the presence of a CTI champion at either the sender or receiver organization, or both—signaling administration support for and commitment to the project.
2. Dedicated (funded) and consistent transition coaches—reflecting the need for stable transition coach staff, with adequate time available to perform the role of a coach.
3. Effective and strong project management leadership.
4. Site team commitment to the CTI—evidenced by participation in project trainings, meetings, and monthly conference calls.
5. A viable sustainability plan—realistic and feasible plans with adequate staffing and administration support.

After careful assessment of the five characteristics, the team subsequently concluded that (1) the presence of executive leadership support for the CTI or the presence of a CTI champion and (2) a strong project management leader effectively encompassed the others. That is, they had the greatest potential to influence sites' capacity to secure and fund adequate and consistent staff, inspire team commitment to the intervention, and continue the project. Consequently, at the conclusion of the project, the foundation project team assigned sites a score (on a 5-point Likert-type scale, with higher score indicating greater leadership) for each of the two leadership attributes. The two leadership scores (range = 1–5) were summed to create the total leadership score (range = 2–10).

Information regarding the quality of care transitions and the level of patient activation in the four pillar areas for patients was collected by grantees through the CTM-3 and the PAA. The CTM-3 (Table 2) is a three-item instrument endorsed by National Quality Forum designed to assess the quality of care transitions from the acute hospital to home or to another care setting (available in the public domain at http://www.caretransitions.org). Patients used a Likert scale (strongly disagree, disagree, agree, strongly agree, and don't know/don't remember/not applicable) to respond to the measure's following three statements:

1. The hospital staff took my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I left the hospital.
2. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.
3. When I left the hospital, I clearly understood the purpose for taking each of my medications.

The CTM-3 score ranges from 0 to 100. Patients completed the CTM-3 at the home visit. At the end of the intervention, transition coaches completed the PAA (Table 3), an instrument designed to assess the patient's competency level in the CTI's four pillar areas. Patients were assigned one point for each of

TABLE 3
Patient Activation Assessment

Medication Management	PHR	Medical Care Follow-Up	Red Flags
Demonstrates effective use of medication management system/medication organizer, flow chart, etc.) For each medication, understands the purpose, when and how to take, and possible side effects Demonstrates ability to accurately update medication list Agrees to confirm medication list with the PCP and/or the specialist	Understands the purpose of PHR and the importance of updating PHR Agrees to bring PHR to every health encounter	Can schedule and follow-through on appointment(s) Writes a list of questions for the PCP and/or the specialist and brings to appointment	Demonstrates an understanding of red flags, or warning signs, that condition may be worsening Reacts appropriately to red flags per education given (or understands how to react appropriately)

Note. PCP, primary care provider; PHR = Personal Health Record.

10 items met in the PAA (available in the public domain at http://www.caretransitions.org).

Demographic and clinical characteristics, including age, gender, race/ethnicity, discharge diagnosis, and status postdischarge, were summarized with counts and percentages. Means and standard deviations of the CTM-3 and the PAA were reported for the entire population and stratified by site-, hospital-, or county-led status, sustainability plans (full, partial, and minor) and leadership scores (>7, 7, <7), age, gender, race (African American, Latino, White, other), discharge diagnosis, and status postdischarge. To identify subgroups of interest for future research and implementation, *t* tests and *F* tests (two-sided, $\alpha = .05$) were conducted to determine statistically significant differences in mean CTM-3 and PAA scores. In addition, the project team analyzed responses to individual questions or domains in the CTM-3 and the PAA for trends. To be included in the data analyses, patients had to complete the intervention, indicated by having a valid PAA score.

Results

The demographic information yielded a profile of the average CTI patient: a white women aged 76–85 years, discharged home with a cardiovascular diagnosis (Table 4).

Mean CTM-3 and PAA scores are presented in Table 5 for the entire population stratified by site and patient characteristics, including sustainability plans and leadership scores. Mean CTM-3 and PAA

TABLE 4
Demographic Characteristics of Care Transitions Intervention Patients

	Count	%
Age, years (*N* = 791)		
18–65	242	30.6
66–75	184	23.3
76–85	254	32.1
86+	111	14.0
Gender (*N* = 791)		
Female	468	59.2
Male	323	40.8
Race/ethnicity (*N* = 790)		
African American	76	9.6
Latino	106	13.4
White	546	69.1
Other	62	7.8
Discharge diagnosis (*N* = 789)		
Cancer	40	5.1
Cardiovascular	284	36.0
Endocrine isorder/diabetes	66	8.4
Orthopedic	120	15.2
Respiratory/pulmonary	125	15.8
Other	154	19.5
Status postdischarge (*N* = 788)		
Home	720	91.4
Skilled nursing facility	15	1.9
Other	53	6.7

TABLE 5
CTM-3 and PAA Scores

	CTM-3				PAA			
	Count	Mean	SD	*p**	Count	Mean	SD	*p**
Total	775	64.2	21.0	NA	794	8.6	2.0	NA
By site								
A	54	74.3	24.2		55	9.0	1.3	
B	70	66.3	20.5		71	8.9	2.1	
C	96	60.7	19.8		96	8.7	2.3	
D	44	59.8	21.3		44	9.3	1.4	
E	50	64.7	17.5		50	8.8	2.1	
F	35	66.8	18.9		35	7.6	2.1	
G	253	62.0	18.8		262	8.9	2.0	
H	59	69.0	23.1		61	7.8	2.5	
I	18	63.0	27.7		21	8.5	2.6	
J	96	64.1	23.9	**.004**	99	8.1	1.6	**<.001**
By county- or hospital-led site								
County led	347	64.0	20.8		351	8.5	2.1	
Hospital led	428	64.3	21.2	.801	443	8.8	2.0	**.043**
By site plans for continuation/LS								
Full/LS > 7	357	64.2	19.9		367	8.9	1.9	
Partial/LS = 7	199	63.0	21.4		201	8.6	2.2	
Minor/LS < 7	219	65.1	22.3	.574	226	8.3	2.0	**.003**
By age, years								
18–65	238	61.9	21.7		242	8.7	2.2	
66–75	178	65.8	22.0		184	8.8	1.6	
76–85	247	64.8	20.1		254	8.6	2.0	
86+	109	64.8	19.7	.237	111	8.3	2.3	.159
By gender								
Female	457	64.9	20.1		468	8.6	2.0	
Male	315	63.1	22.3	.245	323	8.7	2.1	.615
By patient race/ethnicity								
African American	74	62.8	20.9		76	8.4	2.3	
Latino	104	63.6	23.8		106	8.2	2.1	
White	533	64.3	20.4		546	8.7	2.0	
Other	60	65.7	21.9	.863	62	8.9	2.1	.077
By patient discharge diagnosis								
Cancer	38	61.4	19.1		40	9.1	1.7	
Cardiovascular	274	63.3	22.6		284	8.4	2.3	
Endocrine disorder/ diabetes	66	63.6	21.8		66	8.6	2.0	
Orthopedic	117	66.4	18.7		120	9.2	1.6	
Respiratory/pulmonary	122	66.0	20.0		125	8.7	1.7	
Other	153	63.1	20.7	.577	154	8.5	2.1	**.013**
By patient status postdischarge								
Home	703	64.4	21.1		720	8.6	2.0	
Skilled nursing facility	15	62.2	18.2		15	8.5	2.4	
Other	51	61.7	20.5	.626	53	8.8	2.3	.750

Note. 3-CTM, three-item Care Transition Measure; LS = leadership score; PAA = Patient Activation Assessment; NA, not applicable.
*p values are reported for tests of differences in means within each stratification category (t tests were used for the county- or hospital-led and gender categories and F tests for all other stratification categories). Significant values at the .05 level are in bold.

In reviewing responses to individual CTM-3 and PAA items, the project team observed that managing medications was a prominent challenge in the care transition process. More than a quarter of the patients disagreed or strongly disagreed with the statement "When I left the hospital, I clearly understood the purpose for taking each of my medications" on the CTM-3.

scores were statistically significantly different by site. Mean PAA scores were moderately higher for hospital-led sites than for county-led sites (8.8 and 8.5, respectively, $p = .043$) and higher for sites with full plans for continuation (8.9) than for sites with partial or minor plans to continue the program (8.6 and 8.3, respectively, $p = .003$). The only patient category with a statistically significant difference in mean PAA scores was the discharge diagnosis—cardiovascular, "other" diagnoses, and endocrine disorder/diabetes—scored lowest (8.4, 8.5, and 8.6, respectively). Although the differences in means for several of the patient characteristics were not statistically significant, the results highlight several subgroups of patients with lower scores who may require additional assistance during care transitions, including patients with cardiovascular and endocrine disorder/diabetes, older adults (>85 years), and African Americans and Latinos.

In reviewing responses to individual CTM-3 and PAA items, the project team observed that managing medications was a prominent challenge in the care transition process. More than a quarter of the patients *disagreed* or *strongly disagreed* with the statement "When I left the hospital, I clearly understood the purpose for taking each of my medications" on the CTM-3. In addition, two of the three PAA items that received more than 20% negative responses (i.e., patient did not demonstrate competence) concerned medications.

At project conclusion, three sites (Sites A, E, and G) reported plans to *fully* sustain the model going forward. Three additional sites (Sites C, D, and H) indicated plans to *partially* continue the intervention, defined as continuing with two or more of the pillars with, possibly, some transition coaching. The remaining four sites (Sites B, F, I, and J) reported no formal sustainability plans but did indicate that they would encourage their respective organizations to employ, in a *minor* fashion, one or more of the four pillars into their daily workflow. The project team compared these results to the sites' preproject sustainability plans and determined that the initial project proposals of the three sites reporting *full* CTI continuation plans had only slightly more developed plans for project sustainability than the proposals of the other sites.

Site plans for sustainability were also compared with the total leadership scores. The three project sites with *full* sustainability plans (Sites A, E, and G) received the highest total leadership scores (8, 8, and 9, respectively). The three sites indicating *partial* plans to continue with the project (Sites C, D, and H) all scored similarly, with lower total leadership scores (7/10). Of the four indicating *minor* plans to continue with the project (Sites B, F, I, and J), the presence of external (executive leadership) and internal (project management leadership) support for the project was less developed, and accordingly, total leadership indicator scores were lower (6, 5, 5, and 6, respectively). These sites reported resource limitations as the primary reason the CTI was not continued; however, sites did not report whether there was a causal relationship between the lack of funding and the limited executive leadership support for the intervention.

Meeting the primary project goal of identifying factors that promote sustainability, including assessing features of each site's implementation and soliciting site feedback, yielded important project information as well as some valuable lessons learned. Site teams reflected considerable diversity in their partnership arrangements, targeted patient populations, and transition coaches. Transition coaches were nurses (including student nurses), social workers, trained layperson volunteers, and experienced community workers. One team leader using student nurses commented, "We created a new student placement opportunity and expanded the concept of patient management and advocacy for this group of professionals-in-training." The unique sender—receiver relationships highlighted the model's potential to reach communities often overlooked by traditional targeted health interventions. The program director of the homeless shelter noted, "Simply put, our clients are transformed—they begin to understand their conditions and are empowered to move onto something better for themselves." Project sites noted, however, that future CTI programs would benefit from an even more developed focus on outreach to diverse communities.

Grantees participated in shared learning opportunities through preproject transition coach training, monthly conference calls, and meetings. Monthly conference calls addressed topics such as transition

Sites also recognized the value of obtaining more intensive preproject transition coach training to assist them in their capacity to move away from the more familiar "doing" and "teaching" dynamic to one of coaching, which encourages true patient empowerment.

coach responsibilities and challenges; data collection; patient enrollment and referral; and research and evaluation. At the conclusion of the project, sites identified the following recommendations for future CTI program efforts:

- engage hospital and community-based leaders, early and often;
- develop CTI champions;
- provide more preproject transition coach training and simulation; and
- assign consistent and dedicated (funded) transition coaches with nurses and social workers working in tandem, supported by a strong project manager.

These real-world lessons echoed many of the project team's originally selected characteristics identified as likely to influence sites' capacity to continue the project. Through the challenges of implementing the model, sites found that they needed the support of administrative leaders in both the hospital (physicians, chief executive officers, etc.) and community-based organization (county department directors, agency executive directors, etc.) to champion the intervention and keep it from becoming a well-intentioned, but easily forgotten, initiative. Sites also recognized the value of obtaining more intensive preproject transition coach training to assist them in their capacity to move away from the more familiar "doing" and "teaching" dynamics to one of coaching, which encourages true patient empowerment. Finally, consistent and dedicated transition coaches, supported by a strong project manager, powerfully underscored the model's need for funding and hands-on project management to encourage institutionalization.

Discussion

At present, there are no formal payment mechanisms to support self-management programs (with the exception of diabetes self-management) or case management programs. All the sites struggled to find ways to sustain the program. Even sites operating within a capitated framework, ostensibly with greater incentive to integrate an effective Care Transitions Program, reported difficulty identifying resources to support the CTI. Despite financial barriers, 6 of the 10 sites reported sustainability plans, some more developed than others, and the 4 remaining sites with less-developed sustainability plans indicated intent to incorporate one or more of the intervention's pillars into existing patient services and programs. Presence of leadership support, both project management and administration, appears to be the critical factor for project sites reporting interest in, and capacity for, long-term support of the CTI.

Leadership, its characteristics and benefits, has been well studied both in and outside of healthcare. Kotter (2007) identified the essence of leadership as coping with change: He indicated that leaders set a direction, with an accompanying vision for the future and strategies to produce change, and then focus on aligning people, communicating the new direction to those who can create coalitions, understand the vision, and are committed to its achievement. Lukas et al. (2007) identified five critical interactive elements to successful change transformation, one of which was leadership commitment to quality and change. To understand how organizations move from short-term performance improvements to sustained, organization-wide patient care improvements, the authors conducted comparative case studies in 12 healthcare systems. They found that senior leaders steered change through the organization's structures and processes to maintain urgency, set a consistent direction, reinforced expectations, and provided resources and accountability to support change while demonstrating authentic passion for, and commitment to, quality.

By project end, the presence of leadership proved a compelling characteristic of project sustainability. Sites with full model post—project sustainability plans appeared to more fully embrace the leadership principles illuminated by Kotter (2007) and Lukas et al. (2007). They scored the highest on the leadership score, followed by sites with plans for nearly full implementation. Although the association between leadership scores and sustainability plans is exploratory and potentially subjective, the presence of leadership support appears to be an essential ingredient for effective change transformation and project sustainability. This finding was underscored in the recommendations that sites identified for future CTI program efforts—to develop CTI champions and secure strong project management support.

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From the final analyses of the collected data from the CTM-3 and PAA instruments, several important factors emerged. First, medication management (e.g., knowing what medications to take, when and how to take them, their purpose, and possible adverse effects) was identified as a challenge for patients. Future CTI implementations may want to focus on developing a more robust relationship with both CTI patients and hospital clinical staff prior to discharge and with community pharmacists to address discharge concerns as they relate to medication issues.

Second, mean PAA scores for participating patients stratified by site and patient characteristics, including site sustainability plans and leadership scores, demonstrated several interesting trends that may benefit from future research and analysis. The downward trend in mean PAA scores for patients managing with cardiovascular and diabetes diagnoses, patients older than 85 years, and Latino and African American patients signals that these groups might benefit from increased attention during care transitions. No statistical differences were found between county-led and hospital-led teams for the CTM-3 scores; however, for the PAA scores, the hospital-led group reported slightly higher means than those by the county-led sites. One possible explanation for this finding is that CTI patients of hospital-led teams may have felt that the intervention was more directly associated with their medical providers, contributing to the perception that their care was part of a coordinated continuum. Finally, moderately higher PAA means for sites with full plans for continuation than for sites with partial or minor plans to continue the program may reflect greater engagement in, and leadership support for, the model by sites expressing an interest in continuing the project.

Limitations and Challenges

Several limitations associated with the implementation of the pilot project and its findings merit consideration. First, the diverse implementation approaches used by sites (e.g., the selection of transition coaches), along with the widespread geographic distribution of the 10 sites, challenged the foundation project team's efforts to monitor model fidelity. Second, although the CTM-3 is a valid and reliable instrument and the PAA has been widely used in the field, the leadership score and its association to project site's reports of sustainability were subjective in nature, determined by the project team assessment. Finally, some measure of selection bias, patients open and willing to participate in a patient empowerment program to improve self-management healthcare skills, may have been present, potentially limiting generalizability of both the CTM-3 and PAA findings. Despite these limitations, the pilot project was applied in a real-world manner—in different settings with different population groups, providing important implementation and sustainability findings.

Funding is a key consideration in the adoption of any new model of care. Currently, care coordination and transitional care services are not covered for benefits under Medicare fee-for-service financing. However, to date, more than 150 leading healthcare organizations nationwide have adopted the CTI and have determined how to cover the costs of the program. Within the context of capitated payment as with a Medicare Advantage program, the financial incentives for making an investment to reduce hospital readmission are well aligned and the net cost savings more than pay for the transition coaches. Given the national priority to reduce hospital readmissions through greater alignment of financial incentives as articulated by Medicare Payment Advisory Commission, the Obama Administration, and the Congress, hospitals will likely be interested in investing in evidence-based approaches to improve care. Hospitals are also recognizing that improving quality and safety during handoffs benefits their community image, facilitates passing The Joint Commission accreditation, may improve their relationships with community physicians, and may reduce potential litigation. Home healthcare agencies may see investing in the CTI as a "loss leader" that could appropriately help generate a greater volume of referrals for those recently discharged patients who were otherwise eligible for skilled home care services but not initially referred. Large ambulatory clinics might consider investing in the model to facilitate meeting requirements for designation as a primary care medical home. Finally, in some states, advanced practice nurses and licensed social workers

may be able to directly bill for the home visit. It is important to note, however, that independent of the approach used to financially support or clinically implement the CTI, effective transition coaches, whether they be nurses, social workers, emergency medical technicians, pharmacy technicians, or former health plan case managers/care managers, must function in a dedicated transition coach role.

Conclusion

This implementation of the CTI, with its flexible design responsive to the diverse needs of patients, hospitals, and community organizations, provides a host of real-world lessons on how to improve and sustain effective patient transitions between care settings. Healthcare systems with the capacity for and interest in improving care transitions have a compelling reason to explore the viability of implementing the intervention with attention to developing or addressing the following: strong care transitions leadership; collaborative hospital–community partnerships; the particular needs of diverse communities; patient-level medication reconciliation and management; and tailoring the model to the unique needs of patients with cardiovascular conditions and diabetes.

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Monique M. Parrish, DrPH, MPH, MSSW, is Director of LifeCourse Strategies, Orinda, California, a consulting firm specializing in strategic planning, community-based research, program development, and policy analysis for the aging and long-term care field.

Kate O'Malley, MS, RN, GNP, is a senior program officer with the Oakland-based California HealthCare Foundation's Better Chronic Disease Care program, which focuses on improving the quality of care for Californians with chronic diseases.

Rachel I. Adams, BS, is a doctoral student in the Department of Biology at Stanford University, Palo Alto, California.

Sara R. Adams, MPH, is a statistical analyst who has worked at ICON Clinical Research and Cal/EPA Office of Environmental Health Hazard Assessment, Oakland, California.

Eric A. Coleman, MD, MPH, is Professor of Medicine within the Division of Health Care Policy and Research at the University of Colorado at Denver and Director of the Care Transitions Program, aimed at improving quality and safety during times of care "handoffs."

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