Disseminating Evidence-Based Care into Practice

Eric A. Coleman, MD, MPH, Susan A. Rosenbek, RN, MS, and Sarah P. Roman, MGS

Abstract

The Centers for Medicare and Medicaid Services (CMS) has launched the Partnership for Patients initiative, promising a 20% reduction in readmissions nationally across all payers by December 31, 2013. To address this ambitious goal, CMS has awarded grants to Hospital Engagement Networks, Pioneer Accountable Care Organizations, and the Community-based Care Transitions Program, as well as instituted new penalties for excessive readmission that began in October 2012. National efforts aimed at realizing this goal are predicated, in part, on our effectiveness in disseminating evidence-based care models into practice to improve outcomes and reduce costs. The Care Transitions Intervention (CTI) has been developed, tested, and disseminated to over 750 health care organizations in 40 states nationwide. Four factors promote wide-scale CTI dissemination. The first factor focuses on model fidelity whereby adopters are given insight into which elements of the intervention can be adapted and customized. The second factor concerns the selection of Transitions Coaches and reinforcement of their role through training and participation in a national peer learning network. The third factor relates to model execution with attention to integrating the intervention into existing workflows and fostering relationships with community stakeholders. The fourth factor involves cultivating the support to sustain or expand the intervention through continually making the business case in a changing health care landscape. The lessons learned through the dissemination and implementation of the CTI may be generalizable to the spread of a variety of evidence-based care models. (Population Health Management 2013;16:xxx-xxx)

Dissemination of Evidence-Based Care

THE CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS) has launched the Partnership for Patients initiative, promising a 20% reduction in readmissions nationally across all payers by December 31, 2013. To address this ambitious goal, CMS has awarded grants to Hospital Engagement Networks, Pioneer Accountable Care Organizations, and the Community-based Care Transitions Program, as well as instituted new penalties for excessive readmission that began in October 2012. National efforts aimed at realizing this goal are predicated, in part, on our effectiveness in disseminating evidence-based care into practice to improve outcomes and reduce costs. Closing the gap between innovation and practice is a goal shared by federal and philanthropic funding agencies, national quality improvement entities, and local health care leaders. An expanding literature identifies strategies to facilitate the translation of innovative health care programs into practice. Key steps to ensure dissemination include engaging both administrative and clinical leadership, effectively presenting process and outcome data, identifying an existing infrastructure that can support adoption, and articulating how the innovation responds to immediate and significant pressures in the practice environment. Dissemination is further supported by factors that include a reliable targeting strategy, rigorous attempts to ensure model fidelity while simultaneously identifying opportunities for adaptation and customization, provision of training, ongoing technical assistance, and consultation with model developers. 4–6

The Transition Out of the Hospital Is a Vulnerable Time

Persons with complex care needs are particularly vulnerable to serious quality and safety problems that occur during the transition out of the acute care hospital. Qualitative studies have consistently shown that patients do not feel that they have received adequate instruction to assume self-care of their acute and chronic conditions upon their return to home. Quantitative evidence indicates that 15%–45% of patients experience medication problems after discharge and are not receiving appropriate follow-up care. Following hospital discharge, patients frequently do not understand their discharge instructions, including how to take their medications. This lack of understanding has serious

consequences, resulting in a preventable decline in health and functional status, suboptimal chronic illness management, and harm related to adverse effects from medications. Poorly executed transitions contribute to preventable hospital readmissions at an estimated annual cost to the Medicare program of \$17 billion. ¹⁶

Description of the Care Transitions Intervention

The Care Transitions Intervention (CTI) was developed to address the challenges experienced by vulnerable older adults and the health care system at large with regard to transitions across acute and post-acute care settings. The CTI has been developed, tested, and disseminated by the Care Transitions Program, based in Colorado. This program's mission is to improve quality and safety at times of transitions or care "handoffs" across settings for individuals with complex care needs. A detailed description of the CTI is available at www caretransitions.org and in prior publications. ^{17–21}

In contrast to traditional case management and disease management approaches, the CTI is primarily framed around an explicit orientation on skill transfer and self-management. Persons with complex care needs frequently require care across different health care settings and are vulnerable to experiencing serious quality problems. Because of inadequate coordination and communication among practitioners, these patients and their family caregivers often are placed in the position of assuming a major role in their health care, yet they lack adequate skills, tools, or confidence to function effectively. Through the CTI, patients are prepared for how to respond to and anticipate common transition scenarios. In this way, the CTI builds the capacity of patients and family caregivers to become more proficient in managing their self-care needs to ensure successful current and future care transitions.

The CTI is a 4-week intervention composed of a hospital visit, a home visit, and 3 follow-up telephone calls. Older adults who are initially transferred to a short-term rehabilitation or skilled nursing facility begin the intervention upon discharge to their personal residence in the community. Through the 5 patient encounters, Transitions Coaches encourage patients to take a more active role in their care, assert their preferences, and anticipate care needs. The objective for the hospital visit is deliberately modest and emphasizes building rapport, explaining how the model may feel different from case management services or skilled home health care services, and scheduling a home visit. The agenda for the home visit is largely determined by the patient's selfidentified health goal. When asked to define a health-related goal, a common response among patients in general and older adults in particular is to express that "no one has ever asked me my goal before." Often the Transitions Coach may need to probe to elicit a goal and then further probe to have the patient consider initial steps for how to operationalize the goal. In our experience, patient goals are primarily oriented around quality of life and symptom control. Many patients approach the question from the standpoint of identifying a prior activity or hobby they hope to return to. Illustrative examples include resuming gardening, walking the dog, attending church services, or being present at a grandchild's sporting event. Patient-identified goals are often distinct from goals that professionals may have for them (eg, sodium intake, body mass index, hemoglobin A1c level).

In addition, Transitions Coaches model behavior related to "Four Pillars" of patient self-management that will help patients negotiate the most common transition-related challenges: medication self-management, use of a patient-centered personal health record (PHR), timely primary care follow-up, and identification and response to "red flags" that indicate a worsening in condition. A major emphasis of the medication self-management Pillar is to encourage the patient and family caregiver to engage with their hospital and community pharmacists as a valuable care partner and resource. The Transitions Coach uses a Patient Activation Assessment tool to track progress in activation across the Four Pillars and a Medication Discrepancy Tool to identify medication problems and errors and facilitate appropriate action.²²

During the CTI design phase, the study team ensured that the model would directly map to the Institute of Medicine's 6 domains of quality:²³ effectiveness (reducing preventable hospital readmissions), patient-centeredness (unique focus on engagement, self-management, and self-identified goal achievement), timeliness (home visits occur within 24–72 hours of discharge, the most vulnerable time frame upon return to community living), safety (the incorporation of the Medication Discrepancy Tool to identify and respond to medication errors or problems), efficiency (retooling of an existing workforce to become Transitions Coaches), and equity (dissemination across diverse patient populations).²⁴

Rigorous analyses of the CTI, including randomized controlled trials, have revealed that older patients who received the intervention were significantly less likely to be readmitted to the hospital within 30 days and benefits were sustained for at least 6 months, 18,19,21,25 suggesting that the investment in developing transition-specific selfmanagement skills pays dividends after the program ends. Patients who received this intervention also were more likely to achieve self-identified personal goals concerning symptom management and functional recovery. Costs of the intervention include salary and benefits for the Transitions Coach, cell phone charges, mileage, parking costs, and photocopying of the PHR. These costs vary depending on the professional background of the Transitions Coach but range from \$65,000 to \$85,000 annually. The anticipated annual net cost savings for a typical Coach panel of 350 chronically ill adults with an initial hospitalization is approximately \$300,000 (in 2006 dollars).19

Wide-Scale Adoption of the Care Transitions Intervention

To date, over 750 organizations in 40 states have adopted the CTI, suggesting that the model is particularly suited for wide-scale dissemination. Adoption is attributed to factors including easily replicable model features, pointed dissemination strategies, and the growing alignment of financial incentives within the broader health care environment. Key dissemination steps are summarized here and in Table 1. During the design phase, direct input was sought from 2 primary stakeholder groups: older adults and financial leaders of health care delivery organizations. This ensured that the resulting model was truly person-centered and able to be adopted in a variety of care settings and under different payment mechanisms. To reinforce the adoptability and foster the dissemination of the evidence-based model, the

EVIDENCE-BASED CARE 3

Table 1. Recommended Strategies to Enhance Adoption during the Design and Dissemination Phases of a New Intervention

Design elements to promoting dissemination

Identify an under-recognized gap in health care quality or safety.

Engage critical stakeholders in model design including end-adopters (financial leaders) and beneficiaries (older adults and family caregivers).

Convey how the prototype model design might integrate into current health care delivery workflow and not exacerbate existing workforce shortages (eg, retool existing professionals).

Incorporate model features that could be replicable in most health care organizations nationwide (eg, lower intensity and cost, short start-up period, modest investment in time and resources).

Conduct rigorous trials in generalizable health care organizations that serve diverse populations in different care settings

Develop a preliminary business case for why an organization might adopt such an intervention

Articulate how the new intervention responds to immediate or impending challenges faced by the health care organization (eg, financial incentives or penalties, regulations, public image)

Dissemination activities

Decide whether the model innovation team should be the same team that leads dissemination activities.

Weigh the pros and cons for placing the intervention and its accompanying materials in the public domain. Protect the materials from being used without the consent of the innovator by third parties, some of whom may do this for profit.

Develop a robust Web site, choosing terms that ensure it will be featured by major search engines.

Attempt to have the intervention featured by national quality initiatives offered by public and private organizations.

Consider the value of assessing an organization's capacity and readiness prior to implementation of the intervention. Target dissemination materials for both clinical and

administrative audiences.

Refine the business case in response to outcome evaluation and changes in the health care environment.

Determine whether the innovator or another entity will provide training on the intervention and how to offer this during the shortest period of time feasible.

Establish the minimum elements of the intervention and their execution necessary to ensure model fidelity.

Care Transitions Program made an explicit decision to place program materials in the public domain with no user fees (the Care Transitions Program retains all rights to the intellectual property). To handle the growing demand for information requests, the program tailored materials for administrative and clinical audiences and made them available on the program's Web site (www.caretransitions.org).

For those organizations that have demonstrated readiness for implementation, the program offers a variety of training options to meet the needs of both large and small organizations. In most cases, adopting organizations collaborate directly with the program for training. In other cases, the

program has partnered with national and regional public and private funders (eg, CMS, Administration on Aging, John A. Hartford Foundation, California Health Care Foundation, Community Health Foundation of Western and Central New York) to provide training. To increase the likelihood that adopting organizations can replicate the findings from the CTI research trials, the program has identified and articulated key elements of the model for which fidelity is essential (Table 2).

The current level of dissemination of the CTI model has been achieved in the absence of any formal marketing strategy, largely because of its alignment with current social and financial priorities related to health care. Because transitional care has become a recognized essential component of health care delivery—one that is further supported by recently introduced federal incentives to reduce hospital readmission rates—the Care Transitions Program has had to do very little in the way of marketing the model to potential adopters. Generally, interested organizations learn about the program from colleagues, national conference presentations, scientific publications, national quality agencies (eg, the CTI has been endorsed by the National Quality Forum as an effective model to improve care coordination and by the Agency for Healthcare Research and Quality Health Care Innovations Exchange), resource guides that focus on the broader topic of improving transitional care, Internet searches, and public and private funding agencies.

To date, adopting organizations have included hospitals, integrated delivery systems, health plans, independent practice associations, home care agencies, area Agencies on Aging, and parish nurse communities, all of which have demonstrated reductions in hospital readmissions. The model has been implemented under Medicare fee-for-service, Medicare Advantage, Medicaid, commercial insurance, and uninsured financing mechanisms. Adopting organizations have used the model with diverse populations including urban and rural residents, frail older adults, persons with low health literacy, homeless persons, Native Alaskans, African Americans, and Latino Americans.

Features of the model that facilitate implementation in numerous care settings, under a variety of payment structures and with diverse populations, include its low cost and low intensity; its focus on the previously under-recognized central role played by patients and family caregivers in their own care coordination; the evidence demonstrating that investing in self-care pays clinical quality and financial dividends downstream; a series of specifically designed CTI tools created to guide and foster real-time patient activation; an explicit emphasis on patient goal identification and achievement; and the fact that the model does not represent another layer of care but rather an opportunity to elevate the roles of the patient and family caregiver.

Implementation is facilitated via training and technical support offered by the Care Transitions Program from initial contact through later stages of program sustainability. In most cases, the time period from expressing interest in adoption to the first patient enrolled extends approximately 3 months. Prior to training, program team members meet with potential adopters to gauge their level of readiness and commitment. These discussions help potential adopters identify how the mission, goals, and incentives of their organization are aligned with the CTI, understand available resources and tools (specific or complementary to the CTI),

Table 2. Factors That Promote Implementation of the Care Transitions Intervention

Model fidelity

The home visit is essential for fostering meaningful and effective patient/family engagement; eliminating the visit is strongly discouraged.

The Transitions Coach focuses on skill transfer and modeling of behaviors that support patients in getting their needs met during current and future care transitions. The Transitions Coach does not have competing roles such as conducting assessments (beyond the Patient Activation Assessment), providing patient education, or performing skilled services.

After training, Transitions Coaches have time to practice with colleagues and receive focused feedback (eg, shadowing each other's home visits).

Selection of Transitions Coach and reinforcement of role
The Transitions Coach attended Care Transitions
Intervention training and participates in ongoing learning
community calls offered by the Care Transitions Program.
The patient–Transitions Coach relationship is continuous
over the duration of the 30-day intervention.
The Transitions Coach demonstrates a patient-centered
focus through eliciting the patient's goal, exhibiting
excellent communication skills, and resisting the urge to
control the agenda or complete patient tasks.
The Coach has a professional background in nursing,
social work, or related field. The Care Transitions Program
does not endorse the use of paid or volunteer layperson
Transitions Coaches.

Model execution

The adopting organization defines workflows for Transitions Coaches and other professionals from the time of admission to the end of the 30-day intervention. The adopting organization clearly defines goals and approach to targeting; articulates realistic time lines to all participating personnel; and ensures that the intervention is aligned with the organization's mission and values. The adopting organization convenes ongoing meetings that include all relevant stakeholders (eg, hospitals, primary care clinics, home health care agencies, community-based organizations) that provide an opportunity to problem solve operational issues, overcome barriers, and celebrate achieved goals.

Support to sustain the model

The adopting organization defines the criteria to sustain and/or expand the intervention.

The adopting organization creates a strategy for how results will be communicated both within the organization and externally.

The adopting organization plans for recruitment and training of additional Transitions Coaches.

The adopting organization continually refines the business case in response to the changing health care environment.

develop a strategy to either retool an existing workforce or hire new Transitions Coaches, and create a compelling business case. The decision as to whether to retool existing personnel or hire new staff to serve as Transitions Coaches is the primary driver of start-up costs. For the former, the primary costs involve attending the CTI training, whereas for the latter, new outlays may be involved for recruitment expenses and then salary and benefits for the new hire(s). During this readiness phase, the adopting organization is encouraged to articulate which patients will be targeted, how the intervention will interface with existing programs and services, and how they will alert and engage with key stakeholders in their community (eg, home health care agencies, community case management programs) prior to enrolling patients. This process may take 1 to 2 weeks. Organizations typically need another 1 to 2 weeks for the enrollment process to function smoothly.

Adopters are encouraged to address concerns of frontline staff, develop an internal and external communication plan to build awareness of the implementation initiative, and develop a strategy to measure and communicate results to senior leaders. From the very first encounter, adopters are encouraged to define their criteria for determining whether to sustain and/or expand the delivery of the intervention in their organization.

Another factor contributing to the successful dissemination of the CTI involves the training of Transitions Coaches to deliver the intervention. The Care Transitions Program team offers a state-of-the-art interdisciplinary training program that takes health care professionals (primarily nurses and social workers) through the paradigm shift from being a "doer" or problem solver to being a coach. This role transformation is initially achieved using an e-learning platform that provides the essential CTI content in a 2- to 3-hour online learning session followed by a 1-day face-to-face immersive experiential learning training session held near the Denver International Airport in Colorado. On-site training can be arranged for larger organizations or multiple communities.

The face-to-face training experience includes case-based simulations in an environment that promotes constructive feedback and reinforces model fidelity. The latter part of the face-to-face training experience is dedicated to discussions that address how the model can be adapted to fit existing workflows, overcoming implementation challenges, targeting, productivity expectations, communication strategies, and accompanying time lines for key outcomes. Transitions Coaches receive a certificate recognizing their completion of the Web-based and experiential training activities.

Transitions Coaches who have completed training are eligible to participate in a virtual (telephonic) learning community. This opportunity was designed to foster an ongoing peer-to-peer support network, serve as a forum for sharing new ideas and techniques, and provide an opportunity to consider how upcoming changes in health care financing may increase demand for services. Learning community interactions are facilitated by Care Transitions Program staff and incorporate agenda items submitted via e-mail from Coaches in the field. Topics include, but are not limited to, challenges and successes related to patient engagement, stakeholder communication, outcomes measurement, model fidelity, and model execution and expansion. The agenda is sent to all attendees prior to each learning community conference call.

Inasmuch as there is value in describing factors that support adoption, there also is value in sharing approaches that were unsuccessful. In the early phases of dissemination, program staff interacted solely with whoever made the initial contact. Program staff wrongly assumed that this individual had the organizational authority to make implementation decisions and procure financial resources. In many cases, this

EVIDENCE-BASED CARE 5

individual had no such authority, which led to a series of false starts. Similarly, program staff also initially assumed that the professionals who had made the initial contact had a working knowledge of the model, which often proved to be incorrect. With respect to training, program staff initially allowed individuals who were undecided as to whether the Coach role was right for them to attend the training. This decision was made to allow flexibility but only served to dilute the value of the training experience for more committed participants. Program staff members have participated in several collaboratives that substituted layperson volunteers for professionals. These experiences largely have not achieved positive outcomes and the program no longer recommends this approach. These unsuccessful factors have influenced the incorporation of explicit discussion about organizational readiness, the requirement for completion of a "conditions of participation" agreement, and articulation of particular elements of the model that are essential to achieve the desired outcomes.

Maintaining the Integrity of the Care Transitions Intervention

The Care Transitions Program team recognizes that ensuring model fidelity is critical to maintaining the national reputation of the CTI. If health care organizations implement a model that is based only loosely on the CTI and, as a result, do not achieve the desired improvement in clinical and financial outcomes, it may be tempting to publicly denounce the effectiveness of the CTI, which could threaten the overall national implementation strategy. To this end, the Care Transitions Program team developed and implemented a "conditions of participation" agreement that clearly delineates CTI adopter responsibilities for training and for maintaining model fidelity. The agreement details the terms under which the model can be implemented, spread, and marketed. Specific elements of CTI model fidelity that are included in the agreement can be found in Table 2. The Care Transitions Program has further defined the minimal set of core CTI care processes, all of which must be followed to achieve the desired outcomes. Prior to receiving training, potential adopters are expected to conduct a self-assessment of organizational readiness using a Readiness Assessment Tool that is designed to foster a dialogue with senior administrative and clinical leaders with regard to the resources, workflow, and support required to sustain the model over time. Potential adopters are not invited to participate in Transitions Coach training until they are able to demonstrate organizational readiness adequately. Care Transitions Program staff work closely with each organization via a combination of telephone conferences and e-mail correspondence to develop a detailed implementation plan prior to engaging staff in the Transitions Coach training modules. Although adopting organizations and trained Coaches do not receive licensure or audits for compliance with the CTI model, this early engagement with Care Transitions Program staff allows for the identification of organizations that are not sufficiently prepared to implement the model. In this way, the program has been able to enhance model dissemination by preventing or delaying the engagement of unqualified entities. Potential adopters deemed unsuitable or unprepared are encouraged to further hone their organizational readiness plan according to the specific minimum requirements delineated in the Readiness Assessment Tool.

For those organizations that have demonstrated readiness for implementation, the Care Transitions Program provides guidance on how the CTI can be adapted to the unique needs of the adopting organization or the population(s) served. For example, although the Coach role was limited to nurse practitioners and registered nurses during the CTI testing phase, social workers, occupational therapists, and emergency medical technicians at adopting organizations have served in this role. Thus, rather than being limited by a specific discipline or degree, ideal Transitions Coaches include those individuals who are able to make the paradigm shift from fixing the patient's immediate problems to coaching patients on how they can respond to common transition-related challenges across current and future episodes of care. Additionally, CTI adopters have adapted the PHR. They use either paper or electronic approaches and have customized sections to be congruent with their organization's materials and patient population. Another customizable element is the hospital visit. Depending on the adopting organization's relationship with the hospital, Transitions Coaches may or may not have access to patients in the hospital prior to discharge. Based on a prior qualitative study that demonstrated that many patients who experienced the intervention did not feel the hospital visit was particularly valuable, the program does not see the inability to perform the hospital visit as detrimental to the execution of the model. Finally, the dissemination of the model has underscored the value of collaborating with adopters in the customization of CTI core elements and materials for diverse populations. This has required making adjustments in language and literacy to accommodate persons of diverse ethnic and cultural backgrounds, persons whose primary language is other than English, persons in rural and urban areas who have had relatively little exposure to formal education, and unique and challenging elements of geography.

Limitations

The authors' experience in disseminating the CTI has highlighted the fact that, however robust, no single approach is likely to bring about large-scale clinical transformation. Interventions like the CTI can be important elements of a broader strategic initiative to enhance person-centered care, strengthen partnerships among organizations across the health care continuum, and promote widespread advancement of health information technology. Transitions Coaches can increase their effectiveness by encouraging patients and families to develop longitudinal therapeutic relationships with community pharmacists and thereby benefit from their skills in reducing medication discrepancies and errors while con $currently \ improving \ chronic \ illness \ self-management.^{26-30}$ Choosing among professionals (ie, nurses, social workers, pharmacists) for Transitions Coaches may result in different up-front costs and clinical and financial returns in treatment outcomes and readmission.

Lessons Learned

Reflecting on the process of developing, testing, and disseminating the CTI has yielded insight into how to translate this particular model into practice as well as lessons that may

be generalizable to model developers more broadly. Some of these lessons serve to reinforce what are already recognized as best practices in the dissemination literature, while other lessons represent new contributions. With regard to the former, the program's efforts were influenced by the key principles of diffusion described by one of the pioneers in this field, Everett Rogers. These key principles include relative advantage (for the CTI, this includes lower intensity and cost, a short start-up period, and a modest investment in time and resources), compatibility (with existing workflow and existing employed professionals such as case managers, social workers, and home health care personnel, who require retraining), low complexity (program elements such as the home visit and follow-up telephone calls are both straightforward and familiar, and learning communities for Transitions Coaches facilitate best-practice sharing), "trial-ability" (organizations are encouraged to begin with a small-scale pilot on 1 hospital ward or with a specific subpopulation), and observability (the program has produced video clips available on the Web site, as well as an informational video that demonstrates the central elements of the model).

With regard to the latter, the program has identified 5 factors that promote dissemination of the CTI, which are summarized in Table 2 and discussed in detail in the following. These include the effectiveness of the model in reducing hospital readmissions, adherence to model fidelity, targeting strategies, indicators that provide feedback on the performance of Transitions Coaches, and customizing dissemination materials for clinical and administrative audiences with explicit reference to current and impending changes in health care organization and financing.

Nearly every organization that has adopted the CTI has identified the proven ability of the intervention to reduce hospital readmissions as the primary factor that influenced its decision. The closely related second factor focuses on the central importance of model fidelity for helping organizations achieve their desired outcomes while also preserving the reputation of the model. Adopters need guidance on which elements of an innovation should be preserved and which can be modified or customized. For example, dissemination of the CTI model has shown that the home visit is critical for fostering engagement and skill transfer. The third factor focuses on the selection of Transitions Coaches and strategies to reinforce their new professional role. In many respects this transformation from being a "doer" who fixes patient problems to one who can effectively coach the patient to assert a more active role in getting his or her needs met represents a rather dramatic paradigm shift. Health professionals often need modest "deprogramming" that is accomplished largely through the training offered by the Care Transitions Program. The fourth factor addresses the importance of model execution, which includes ensuring that adequate infrastructure and workflows are in place to support the model. The fifth factor focuses on supporting the organization to sustain or expand the model.

To elaborate further on the fifth factor, the California Health Care Foundation sponsored a collaborative whereby 10 hospital/community-based organization partnerships implemented the CTI in a wide variety of communities serving diverse populations. The collaborative included a planned evaluation designed to identify factors that promote sustainability of the CTI. The project team developed an in-

dex of 5 characteristics likely to influence sites' capacity to continue the project: the presence of executive leadership support for the CTI or the presence of a CTI champion; dedicated (funded) and consistent use of Transitions Coaches; strong and effective project management; commitment to the CTI, as evidenced by participation in training sessions, meetings, and monthly calls; and a viable sustainability plan. The presence of leadership support was determined to be the most 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 Transitions Coach training, and assigning consistent and dedicated (funded) Transitions Coaches as additional important lessons learned.³¹

Adopting organizations have employed a wide variety of targeting strategies to identify those patients who will benefit from receiving the CTI. In initial trials, the recruitment net was cast relatively wide by offering the intervention to individuals over the age of 65 who live in the community within a defined geographic area, and who were admitted with acute and chronic conditions associated with the use of post-acute care services. In practice, CTI partners have targeted patients who receive care on a particular hospital ward, or patients with discharge diagnoses whose rate of 30-day readmission are publicly reported on the CMS Hospital Compare Web site (www.hospitalcompare.hhs.gov). Other organizations administer internally or externally developed algorithms to identify patients who are at elevated risk for hospital readmission.

An additional lesson from the dissemination experience is that organizations implementing CTI benefit from monitoring a series of indicators that provide feedback on the performance of Transitions Coaches. Some of these indicators relate to the structure of the intervention such as the duration of the home visit (which ideally should not be less than 45 minutes or more than 70 minutes) and the Coach's panel size (generally between 24–28 patients at any given time). Other process-oriented indicators include the percentage of patients identified as experiencing 1 or more medication discrepancies (benchmark is 40%–45%), and whether the patient schedules and attends a post-hospital follow-up visit. Adopting organizations also benefit from monitoring indicators related to outcomes, including improvement in activation as measured by the Patient Activation Assessment and whether the patient has achieved his or her stated 30-day health-related goal.

Lastly, the dissemination process has highlighted the importance of engaging both clinical and administrative leaders during early discussions of adoption and preparing them for their respective roles in ensuring effective translation. Clinical leaders need time to understand what is unique about the CTI and how it may potentially complement other clinical programs and services. Administrative leaders may require assistance in quantifying the financial and nonfinancial returns on investment. This support extends from the decision to adopt the model to initial implementation to the subsequent process of sustaining the model. Specifically, the Care Transitions Program team helps administrative leaders articulate the business case from the program's inception and then revisits the business case in response to changes in health care policy promulgated by organizations such as the Administration on Aging, Aging and Disability Resource

EVIDENCE-BASED CARE 7

Centers,³² extension of the CMS Quality Improvement Organizations national care transitions theme into the 10th statement of work,²⁵ and pilot programs exploring new payment approaches for transitional care through the Community-Based Care Transitions Program, patient-centered medical homes, bundled and episode-based payment, and accountable care organizations.³³ In addition to helping organizations react to changes in financial incentives, the Care Transitions Program team has moved beyond the more traditional roles of model developer and disseminator to embrace the opportunity to influence the larger health care landscape with regard to the spread of evidence-based transitional care.³³

Author Disclosure Statement

The authors received financial support for the research, authorship, and/or publication of this article from The Gordon and Betty Moore Foundation and the John A. Hartford Foundation. Dr. Coleman, Ms. Rosenbek, and Ms. Roman declared no conflicts of interest with regard to the research, authorship, and/or publication of this article.

References

- 1. Boult C, Coleman EA. Diffusing our innovations. J Am Geriatr Soc 2003;51:127–128.
- Inouye S, Baker D, Fugal P, Bradley E. Dissemination of the hospital elder life program: Implementation, adaptation, and successes. J Am Geriatr Soc 2006;54:1492–1499.
- 3. Bradley E, Webster T, Baker D, Schlesinger M, Inouye S. After adoption: Sustaining the innovation—A case study of disseminating the hospital elder life program. J Am Geriatr Soc 2005;53:1455–1461.
- Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: Systematic review and recommendations. Milbank Q 2004;82:581–629.
- Bradley E, Schlesinger M, Webster T, Baker D, Inouye S. Translating research into clinical practice: Making change happen. J Am Geriatr Soc 2004;52:1875–1882.
- Rogers E. Diffusion of Innovations. 4th ed. New York: The Free Press; 1995.
- Moore C, Wisnevesky J, Williams S, McGinn T. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. J Gen Intern Med 2003;18:646–651.
- 8. Forster A, Murff H, Peterson J, Gandhi T, Bates D. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med 2003;138: 161–167.
- 9. vom Eigen K, Walker J, Edgman-Levitan S, Cleary P, Delbanco T. Carepartner experiences with hospital care. Med Care 1999;37:33–38.
- Coleman EA, Smith J, Frank JC, Eilertsen TB, Thiare JN, Kramer AM. Development and testing of a measure designed to assess the quality of care transitions. Int J Integrated Care 2002;2:e02.
- Flacker J, Park W, Sims A. Discharge information and older patients: Do they get what they need? J Hosp Med 2007;2:291–296.
- 12. Misky GJ, Wald HL, Coleman EA. Post-hospitalization transitions: Examining the effects of timing on primary care provider follow-up. J Hosp Med 2010;5:392–397.
- Beers M, Sliwkowski J, Brooks J. Compliance with medication orders among the elderly after hospital discharge. Hosp Formul 1992;27:720–724.

 Dudas V, Bookwalter T, Kerr KM, Pantilat SZ. The impact of follow-up telephone calls to patients after hospitalization. Am J Med 2001;111:26S–30S.

- Kripalani S, Price M, Vigil V, Epstein K. Frequency and predictors of prescription-related issues after hospital discharge. J Hosp Med 2008;3:12–19.
- Jencks S, Williams M, Coleman EA. Rehospitalization among patients in the Medicare fee-for-service program. N Engl J Med 2009;360:1418–1428.
- 17. Parry C, Coleman EA, Smith JD, Frank J, Kramer AM. The care transitions intervention: A patient-centered approach to ensuring effective transfers between sites of geriatric care. Home Health Care Serv Q 2003;22:1–17.
- Coleman EA, Smith J, Frank J, Min S, Parry C, Kramer A. Preparing patients and caregivers to participate in care delivered across settings: The care transitions intervention. J Am Geriatr Soc 2004;52:1817–1825.
- 19. Coleman EA, Parry C, Chalmers S, Min S. The care transitions intervention: Results of a randomized controlled trial. Arch Intern Med 2006;166:1822–1828.
- Parry C, Kramer H, Coleman EA. A qualitative exploration of a patient-centered coaching intervention to improve care transitions in chronically ill older adults. Home Health Care Serv Q 2006;25:39–53.
- 21. Parry C, Min S, Chugh A, Chalmers S, Coleman EA. Further application of the care transitions intervention: Results of a randomized controlled trial conducted in a fee-for-service setting. Home Health Care Serv Q 2009;28:84–99.
- Coleman EA, Smith J, Raha D, Min S. Posthospital medication discrepancies: Prevalence and contributing factors. Arch Intern Med 2005;165:1842–1847.
- 23. Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, D.C.: National Academies Press; 2001.
- 24. Institute of Medicine. *Retooling for an Aging America: Building the Health Care Workforce.* Washington, DC: The National Academies Press; 2008.
- 25. Brock J, Jencks S. CMS targets readmission through payment, audits; 'coaching' model reduces rates. Available at: http://www.compassionandsupport.org/pdfs/about/Report_on_Medicare_Compliance_063008.pdf. Accessed October 22, 2012.
- National Transitions of Care Coalition. Improving Transitions of Care. The Vision of the National Transitions of Care Coalition. Available at: http://www.ntocc.org/Portals/0/PDF/ Resources/PolicyPaper.pdf. Accessed September 24, 2012.
- Chisholm-Burns MA. US pharmacists' effect as team members on patient care: systematic review and meta-analyses. Med Care 2010;48:923–933.
- Kripalani S, Jackson AT, Schnipper JL, Coleman EA. Promoting effective transitions of care at hospital discharge: A review of key issues for hospitalists. J Hosp Med 2007;2:314–323.
- 29. Novak CJ, Hastanan S, Moradi M, Terry DF. Reducing unnecessary hospital readmissions: The pharmacist's role in care transitions. Consult Pharm 2012;27:174–179.
- Bayley BK, Savitz LA, Maddalone T, Stoner SE, Hunt JS, Wells R. Evaluation of patient care interventions and recommendations by a transitional care pharmacist. Ther Clin Risk Manag 2007:3;695–703.
- 31. Parrish MM, O'Malley K, Adams RI, Adams SR, Coleman EA. Implementation of the care transitions intervention: Sustainability and lessons learned. Prof Case Manag 2009; 14:282–293.
- 32. Administration on Aging. Aging and Disability Resource Center Technical Assistance Exchange. Care Transitions.

Available at: http://www.adrc-tae.org/tiki-searchresults.php? words=care+transitions&x=0&y=0. Accessed October 22, 2012.

33. The Patient Protection and Affordable Care Act of 2010 (HR3590). Available at: http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf. Accessed October 22, 2012.

Address correspondence to: Eric A. Coleman, MD, MPH Division of Health Care Policy and Research 13199 East Montview Blvd, Suite 400 Aurora CO 80045

E-mail: Eric.Coleman@ucdenver.edu