Care Transitions Programs
A Review of Hospital-Based Programs Targeted to Reduce Readmissions

Dennis R. Delisle, MHSA, PMP

ABSTRACT
Purpose/Objectives: An emphasis on a value-based payment model is expected to provide motivation for developing effective care transitions programs. For such programs to succeed, organizations must adopt an evidence-based, financially feasible model that enables improved coordination with providers, alignment of incentives, and measurement of key performance metrics, both clinical and operational. Evidence of cost-effective care transitions programs is important for deploying successful models broadly.

Primary Practice Settings: Hospital-based programs.

Findings/Conclusions: Current literature on care transitions programs highlights different strategies, patient populations, settings, and outcomes; however, it lacks sufficient supporting financial evidence that these programs are operationally sustainable and cost-effective within current and projected reimbursement schemes.

Implications for Case Management Practice: Care transitions interventions need to be further studied in different settings with different patient populations to identify the optimal approach(es). An additional opportunity for future investigation lies in translation of interventional programs targeted at readmission diseases in line for penalty by Medicare.

Key words: care transitions, cost-effectiveness, financial implications, health care reform, readmissions

The U.S. health care system’s fragmented structure leads to inefficiencies and low quality at a high expense. An Institute of Medicine report, Crossing the Quality Chasm: A New Health System for the Twenty-first Century, insisted that providers across care settings integrated efforts to enhance outcomes, improve care coordination, and limit opportunities for medical errors (Coleman, Min, Chomiak, & Kramer, 2004). Progress in effective care transitions has been slow, mainly due to the current payment system which does not appropriately align incentives to coordinate care (Coleman et al., 2008). The Patient Protection and Affordable Care Act of 2010, aims to address this disconnect through the establishment of payment models that provide financial incentives for effective care transitions while penalizing those who achieve poor outcomes, namely readmissions, also referred to as rehospitalizations. On the basis of the payment structure of the current Medicare fee-for-service model, reimbursement is driven by volume as opposed to the value and quality of health outcomes (Thorpe & Ogden, 2010). Collaboration and coordination between providers is limited, setting the stage for errors and unnecessary care. Increases in healthcare expenditures and expected cuts in reimbursement for transition errors create the platform for needed change. In 2004, nearly one in five Medicare fee-for-service patients was readmitted within 30 days of index hospitalization, costing more than $17.4 billion (Osei-Anto et al., 2010). For the same population, one third of patients were rehospitalized after 60 days (Thorpe & Ogden, 2010). These patients, most of whom are chronically ill, may receive inadequate discharge or transition preparation regarding diet, medication regimen, or other posthospital instructions, leading to acute exacerbation (Peikes, Chen, Schore, & Brown, 2009). As a result of the inefficient delivery system, providers are not able to achieve optimal health outcomes for all those served. In addition, poorly managed transitions lead to dissatisfied patients and increased, inappropriate utilization of emergency, postacute, ambulatory, and hospital services (Coleman & Boul, 2007).

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Penalties related to readmissions do not address the major disconnect in the continuum of care. Without accountability tied to patient outcomes, providers will continue to operate in silos. Recognizing this severe limitation, Medicare will pilot bundled, value-based payments geared toward promoting coordination and accountability throughout the patient’s episode of care.

Because of the spiraling costs and concerns about the national debt, health care delivery and payment reform are inevitable. The Centers for Medicare & Medicaid Services is implementing a value-based reimbursement mechanism in fiscal year 2013, aiming to reduce payments for preventable risk-adjusted readmissions for heart failure, acute myocardial infarction, and pneumonia and hospital acquired conditions (Mulvany, 2010). The diagnosis list will be expanded in subsequent years, further pressuring health care providers to collaborate and cooperate to reduce costs. Through prospective payment reductions in 30-day readmissions alone, Medicare is projecting cost savings from 2013 to 2019 of nearly $188 billion (Thorpe & Ogden, 2010).

Penalties related to readmissions do not address the major disconnect in the continuum of care. Without accountability tied to patient outcomes, providers will continue to operate in silos. Recognizing this severe limitation, Medicare will pilot bundled, value-based payments geared toward promoting coordination and accountability throughout the patient’s episode of care (Thorpe & Ogden, 2010).

The pay-for-performance mechanism should reward and promote open collaboration between providers (Coleman et al., 2008). Facilitating and supporting successful care transitions hinge upon the ability to align incentives with desired behaviors.

**Care Transitions**

Care coordination and care transitions are two distinct constructs that require a brief explanation. **Care coordination** is the organization of patient care activities between two or more parties, including the patient and family to achieve a desired health outcome (Coleman et al., 2008). **Care transitions** are defined as the movement of a patient between different locations (e.g., hospital to skilled nursing facility) or levels of care within the same location (e.g., primary care to specialty care, intensive care unit to step-down) (Coleman & Boulit, 2007; Coleman et al., 2008). Within the context of care transitions, patients experience numerous transfers to different providers, including physicians, nurses, case managers, technicians, pharmacists, among others and to different settings. As a critical component to successful care delivery, communication serves as a focal point in smooth and effective transitions.

**Care Transitions Interventions**

To be cost-effective, care transitions intervention programs need to address vulnerable patient populations, chiefly elderly, comorbid individuals. Although traditionally focused on hospital providers, care transitions encompass the entire health system, and as such, community and provider participation is essential in driving success. Interventions in various settings, with different diseases, and program structures need to be evaluated for demonstrated, sustainable, and cost-effective results.

**Evidence From the Literature**

The care transition interventions studied in this review focused on three key themes: (1) enhanced care support at transitions, (2) improved patient education and self-management support, and (3) multidisciplinary team management (Mulvany, 2010). Table 1 provides a matrix detailing individual components of the research studies reviewed.

As shown in Table 1, care transitions interventions have been deployed to address a multitude of issues and problems. Studies ranged from disease-specific to general populations, from a single setting to multiple provider settings. Early studies reviewed focused primarily on identifying patterns and risk factors as well as predictor variables associated with complicated transitions (Kind, Smith, Frytak, & Finch, 2007). The bandwidth of participants, settings, interventions, and results was large. Although the scope of participants, settings, interventions, and results was vast, the majority of published studies were generally on the elderly population, rehospitalizations from...
### TABLE 1
Study Comparisons

<table>
<thead>
<tr>
<th>Source</th>
<th>Study Duration</th>
<th>Number of Participants</th>
<th>Objective</th>
<th>Setting</th>
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<tbody>
<tr>
<td>Peikes et al. (2009)</td>
<td>Programs that volunteered to participate in 3-year window</td>
<td>15 programs studied, varied from N = 178 to 2,657</td>
<td>To determine whether care coordination programs reduced hospitalizations and Medicare expenditures and improved quality care for chronically ill Medicare beneficiaries</td>
<td>5 commercial disease management companies, 3 community hospitals, 3 AMCs, 1 integrated delivery system, 1 hospital, 1 long-term care facility, and 1 retirement community</td>
<td>Eligible Medicare FFS patients volunteered to participate</td>
<td>Interventions varied widely in all 15 sites</td>
<td>13 of 15 had no significant reduction in rehospitalizations; Mercy had 0.168 fewer rehospitalizations per person per year (17% less than control mean, p = .02); Charelstown had 0.118 more hospitalizations per person per year (19% more than control group, p = .04). 12 of 15 programs had large enough statistical power (65%–99%)</td>
<td>Viable care coordination programs without a strong transitional care component are unlikely to yield net Medicare savings</td>
</tr>
<tr>
<td>Parry et al. (2009)</td>
<td>1 y</td>
<td>Case (n = 44) Control (n = 42)</td>
<td>Apply and assess CTI in different setting</td>
<td>&gt;65 years, community resident, owning telephone, English-speaking, 1 of 11 diagnosis</td>
<td>Four pillars: (1) medication self-management system, (2) patient-centered record, (3) timely follow-up, and (4) list of “red flags”</td>
<td>Transition coach assigned to enrolled participants</td>
<td>Rehospitalization within xx days (case vs. control): 30 days (6.8%–16.7%, p = .15) 90 days (9.3%–31.0%, p = .01) 180 days (2.0%–38.1%, p = .08)</td>
<td>The CTI was designed to be an effective and relatively low-cost and low-intensity intervention</td>
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<tr>
<td>Dedhia et al. (2009)</td>
<td>Control period—5 months Intervention period—6 months</td>
<td>Case (n = 184) Control (n = 238)</td>
<td>To study the feasibility and effectiveness of a discharge planning intervention</td>
<td>&gt;65 years, admitted to hospitalist service, English-speaking, owning telephone</td>
<td>Safe STEPS (successful transition of elderly patients study): 5 core elements—(1) admission form with geriatric cues, (2) fax to PCP, (3) interdisciplinary worksheet to identify barriers to discharge, (4) pharmacist–physician collaborative medication reconciliation, and (5) predischarge planning appointments</td>
<td>Within 1 week: ED return visit or rehospitalization (case 3% vs. control 10%) Within 30 days postdischarge: ED return visit (case 14% vs. control 21%, p = .06) Rehospitalization (case 14% vs. control 22%)</td>
<td>Hospitalized elderly patients treated for specific needs; outcomes can improve. Cost-benefit analysis was not performed</td>
<td></td>
</tr>
<tr>
<td>Jack et al. (2009)</td>
<td>1.5 y</td>
<td>Case (n = 370) Control (n = 368)</td>
<td>To test the effects of an intervention designed to minimize hospital utilization after discharge</td>
<td>General med service at AMC</td>
<td>English-speaking hospitalized adults, owning telephone</td>
<td>Nurse discharge advocate; after hospital care plan; pharmacist follow-up call 2–4 days postdischarge</td>
<td>1-hospital utilization (case 15.1% vs. control 18.8%) More than 1 (case 6.5% vs. control 8.1%) Case had lower rate of hospital utilization (incidence ratio 0.695, p = .009)</td>
<td>A package of discharge services reduced hospital utilization within 30 days of discharge</td>
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### TABLE 1
Study Comparisons (Continued)

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<tbody>
<tr>
<td>Boutwell &amp; Hwu (2009)</td>
<td>NA</td>
<td>NA</td>
<td>St. Luke’s Hospital, Cedar Rapids, IA</td>
<td>Patients with heart failure diagnosis</td>
<td>4 core elements: (1) enhanced admission assessment for post-discharge needs, (2) enhanced teaching and learning, (3) patient- and family-centered handoff communication, and (4) early post-acute care follow-up</td>
<td>50% reduction in hospitalizations</td>
<td>TCAB for patients discharged from medical and surgical units within hospitals show promise in reducing readmissions</td>
</tr>
<tr>
<td>Kind et al. (2007)</td>
<td>NA</td>
<td>422 hospitals</td>
<td>South/eastern United States, 11 metropolitan regions</td>
<td>Medicare beneficiaries &gt;65 years, discharged for acute ischemic stroke from 1998 to 2000</td>
<td>Multivariate logistic regression on administrative data</td>
<td>20% of patients had at least one complicated transition</td>
<td>Sociodemographic factors and initial discharge site distinguish patients with multiple complicated transitions</td>
</tr>
<tr>
<td>Coleman et al. (2006)</td>
<td>1 y</td>
<td>Case (n = 360) Control (n = 352)</td>
<td>Large integrated delivery system in Colorado</td>
<td>&gt;65 years, community resident, owning telephone, English-speaking, 1 of 11 diagnoses</td>
<td>Intervention groups received (1) tools to promote cross-site communication, (2) encouragement to take a more active role in their care and to assert their preferences, and (3) continuity across settings with transitions coach</td>
<td>Rehospitalization within xx days (case vs. control): 30 days (8.3%–11.9%, p = .048), 90 days (16.7%–22.5%, p = .04), 180 days (25.6%–30.7%, p = .046)</td>
<td>Supporting patients and caregivers to take a more active role during care transitions appears promising for reducing rates of subsequent hospitalization.</td>
</tr>
<tr>
<td>Coleman, Smith, et al. (2004)</td>
<td>1 y</td>
<td>Case (n = 158) Control (n = 1,235)</td>
<td>A large integrated delivery system in Colorado</td>
<td>Community-dwelling adults &gt;65 y admitted to the study hospital with one of nine selected conditions</td>
<td>Intervention participants received tools to promote cross-site communication, encouragement to take a more active role in their care and assert their preferences, and continuity across settings and guidance from a transition coach</td>
<td>Rehospitalization odds ratio (% readmitted–case vs. control, p value): 30 days 0.523 (8.9%–13.4%, p = .092), 90 days 0.43 (13.5%–22.9%, p = .007), 180 days 0.57 (22.9%–32.0%, p = .033)</td>
<td>No formal cost-effectiveness analysis conducted, under traditional FFS Medicare, the hospital operates at high capacity may choose to invest in this intervention to reduce readmissions among complex older patients who would otherwise occupy beds that could be used to support patient care services generating higher revenue</td>
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<tr>
<td>Coleman, Min, et al. (2004)</td>
<td>NA</td>
<td>NA</td>
<td>To describe patterns of posthospital care transitions. Characterize these patterns as uncomplicated or complicated and identify those at greatest risk for complicated transitions</td>
<td>MCBS and Medicare claims data</td>
<td>Medicare beneficiaries who participated in MCBS and discharge from hospital in 1997–1998</td>
<td>NA</td>
<td>46 distinct care patterns were observed</td>
<td>Further testing may include more diverse populations and patients at risk for transitions who are not acutely ill</td>
</tr>
<tr>
<td>Naylor et al. (2004)</td>
<td>4 y</td>
<td>Case (n = 239) Control (n = 402)</td>
<td>To examine the effectiveness of a transitional care intervention delivered by APNs to elders hospitalized with heart failure</td>
<td>6 Philadelphia academic and community hospitals</td>
<td>&gt;65 years, hospitalized with heart failure</td>
<td>3-month APN-directed discharge planning and home follow-up protocol</td>
<td>Readmissions (case 104 vs. control 162, p = .047) Mean costs (case $7,636 vs. control $12,481, p = .002)</td>
<td>A comprehensive transitional care intervention for elders hospitalized with heart failure increased the length of time between hospital discharge and readmission or death, reduced total number of readmissions and decreased health care costs</td>
</tr>
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</table>

Note: AMC = academic medical center; APN = advanced practice nurse; CTI = Care Transitions Intervention; ED = emergency department; FFS = fee-for-service; MCBS = Medicare Current Beneficiary Survey; NA = not applicable; PCP = primary care physician; TCAB = transforming care at the bedside
specific settings, implementation of specific interventions, and disease-specific interventions (Boutwell & Hwu, 2009). The foremost approach was providing the patient and family with the skills and education needed to self-manage treatment and medication protocols and processes postdischarge.

**Participants**

Care transitions studies have predominantly focused on hospital setting initiatives. Depending on the size and scope of the study, however, additional providers in the care process were included, such as long-term care facilities, integrated delivery systems, and commercial disease management companies. Some studies focused on a single provider (Boutwell, Griffin, Hwu, & Shannon, 2009; Jack et al., 2009; Parry, Min, Chugh, Chalmers, & Coleman, 2009), whereas others incorporated multiple academic medical centers and community hospitals (Coleman, Parry, Chalmers, & Min, 2006; Coleman, Smith, et al., 2004; Dedhia et al., 2009; Kind et al., 2007; Naylor et al., 2004; Peikes et al., 2009).

The majority of studies examined transitions of individuals 65 years of age or older, spoke English, owned a telephone, had a residence within the community, and were diagnosed with at least one of nine common diseases identified (e.g., heart failure, acute myocardial infarction, pneumonia, chronic obstructive pulmonary disease; Coleman et al., 2006; Coleman, Smith, et al., 2004; Dedhia et al., 2009; Kind et al., 2007; Naylor et al., 2004; Parry et al., 2009). Other studies looked at English-speaking adults (Jack et al., 2009), all Medicare fee-for-service patients (Peikes et al., 2009), and Medicare beneficiaries participating in Medicare Current Beneficiary Survey nationwide (Coleman, Min, et al., 2004), to specifically addressing eligible patients with heart failure (Boutwell et al., 2009). The focus on elderly, comorbid patients coincides with a growing body of science that indicates this patient population as highly vulnerable to complications during care transitions (Naylor et al., 2004).

**Interventions**

Interventions fell into broad categories summarized as follows: (1) patient self-management promotion, (2) improved communication between providers and patients/families, (3) facilitating postdischarge follow-up appointments, and (4) patient and family education (Boutwell & Hwu, 2009; Peikes et al., 2009). According to the literature, there are three key process points that providers should target for interventional strategies to improve care transitions: (1) during inpatient hospitalization, (2) at the point of discharge, (3) postdischarge (Osei-Anto et al., 2010).

**During Hospitalization**

During a hospital stay, communication between patients, their family/caregiver, and the multidisciplinary teams needs to start early and occur regularly. The number of encounters with various members of the care team provide ample opportunity for miscommunication and inefficient handoffs. A study in 2003 found that between 41.9% and 70% of Medicare patients received services from an average of 10 or more physicians during an inpatient stay (Coleman et al., 2008). Clear communication between providers is crucial to optimize patient safety, continuity in care, and targeted clinical outcomes.

Educating the patient and his or her family regarding diagnosis and reason for admission is essential in preparing them for postdischarge responsibilities and setting expectations. Qualitative studies have demonstrated that patients often feel underprepared or ill-equipped to self-manage once discharged because of lack of education regarding diagnosis, inability to access a provider for postdischarge advice and guidance on the plan of care, and/or general lack of inclusion during the course of inpatient care (Coleman et al., 2006). The case manager can play a key role in providing effective coordination of care and facilitating communication between the multidisciplinary
team and the receiving facility or provider, as well as in patient/family education.

**At Discharge**

Discharging a patient from the hospital marks a significant challenge. If successful education, appropriate and effective clinical care, and a completed discharge plan have been executed, the likelihood for posthospitalization complications declines. Part of most care transitions programs includes posthospital follow-up appointments, scheduled with the patient’s primary care physician or relevant specialist where applicable. The follow-up appointment ensures compliance with the discharge plan, monitoring of health status, and an opportunity for the outpatient provider to identify potential issues prior to acute symptoms arising.

Pharmacists can play a vital role in the medication reconciliation process at discharge. As described earlier, many patients who experience complicated transitions have comorbid conditions and as such, present upon admissions multiple medications. During the course of treatment, medications may be added, removed, or replaced. The reconciliation of drugs is deemed mandatory by The Joint Commission. Without proper reconciling of drugs prior to discharge, the risk of medication errors vastly increases. Medication errors due to under- or overdosing or harmful interactions account for $3.5 billion annually, 60% of which occurs at the point of transition (Coleman et al., 2008). Additional studies have indicated the dangers of poor transitions, including medical adverse events such as medication duplication and unnecessary diagnostic testing effects 49% of patients discharged (Dedhia et al., 2009). Along with medication reconciliation and patient education, accurate and timely information for posthospital providers is fundamental to successful handoffs.

**Postdischarge**

Early after transitioning from a hospital to another setting (e.g., skilled nursing facility, home), patients continue to be at risk. One in five patients discharged from a hospital to home experience an adverse event, a result of mismanagement of medication regimen or other ill effects not associated with the primary diagnosis, within 3 weeks of discharge (Snow et al., 2009). Care transitions interventions vary in the posthospitalization approach. Ranging from home visits to follow-up phone calls, most providers attempt to contact patients shortly after their discharge to remediate any potential medication discrepancies, clarify plan-of-care instructions, and ensure follow-up appointment attendance. Outcomes, determining success or lack thereof, primarily focus on health care utilization (emergency department visits) and readmissions within defined time frames (i.e., 30, 90, 180 days) (Coleman et al., 2008; Osei-Anto et al., 2010). Secondary outcome measures include patient perception of discharge process and health-related quality-of-life metrics.

As with settings and participants, there were a great variety of care transitions interventions. Four studies implemented the Care Transitions Intervention (Coleman, Smith, et al., 2004; Parry et al., 2009) or an iteration of it (Boutwell et al., 2009; Coleman et al., 2006). The Care Transitions Intervention is a four-component model with a focus on patient and family empowerment (Parry et al., 2009). The four pillars are defined as (1) medication self-management system, (2) patient-centered record, (3) timely follow-up postdischarge with primary care physician or specialist, and (4) list and knowledge of “red flag” issues to look for, and what to do if the patient encounters such problems (Coleman, Smith, et al., 2004). The studies emphasizing patient involvement used educational methods such as teach backs, instructional handouts, and key provider information. Throughout the patient’s stay, a transitions coach was assigned to assist in navigating the inpatient stay (Coleman et al., 2006; Coleman, Smith, et al., 2004; Parry et al., 2009). The transitions coach was responsible for delivering and ensuring diagnosis-specific education to the patient, facilitating a follow-up primary care physician or specialist appointment, and calling the patient postdischarge to address any outstanding medication issues or health problems (Coleman et al., 2006).

Two studies implemented an approach that integrated pharmacists during and after hospitalization (Jack et al., 2009; Naylor et al., 2004). Along with patient education from admission through discharge, the pharmacist was integral to the medication reconciliation process and provided a follow-up call to further ensure remediation of discrepancies. The operations of both studies did vary. The use of a nurse discharge advocate provided patients with access to a knowledgeable clinician who was responsible for optimizing the multidisciplinary care delivery and transition (Jack et al., 2009).

One in five patients discharged from a hospital to home experience an adverse event, a result of mismanagement of medication regimen or other ill effects not associated with the primary diagnosis, within 3 weeks of discharge.
The use of a transitions coach or advocate was pervasive; however, one study operationalized the resource much differently. An advanced practice nurse for the care transitions program was assigned to enrolled patients throughout the inpatient stay and for the subsequent 3 months (Naylor et al., 2004). Guided by a home follow-up protocol, the advanced practice nurse would make frequent home visits in addition to regular phone calls. This approach to transitions coaches or advocates was much more labor and resource intensive.

COMPARISONS

Measurements varied across all studies, consistent with the observed variation in approach and deployment of intervention strategy. The primary measurement or indicator was rehospitalization. The array of key measures included overall readmissions (Boutwell et al., 2009; Kind et al., 2007; Naylor et al., 2004; Peikes et al., 2009), 30-day readmissions (Coleman et al., 2006; Coleman, Min, et al., 2004; Coleman, Smith, et al., 2004; Dedhia et al., 2009; Jack et al., 2009; Parry et al., 2009), 60-day readmissions (Coleman, Smith, et al., 2004), 90-day readmissions (Coleman et al., 2006; Coleman, Smith, et al., 2004; Parry et al., 2009), and 180-day readmissions (Coleman et al., 2006; Parry et al., 2009). Secondary measures included utilization by way of Medicare expenditures (Peikes et al., 2009) and emergency department return visits (Dedhia et al., 2009; Jack et al., 2009) and patient satisfaction with the discharge process (Boutwell et al., 2009; Dedhia et al., 2009; Naylor et al., 2004; Peikes et al., 2009).

OUTCOMES

Approach, including duration and operations, had a high degree of variability, and as such, it is difficult to adequately compare results in terms of highest impact and degree of success. Many studies were able to reduce the overall readmission rate within the intervention group (Boutwell et al., 2009; Coleman, Smith, et al., 2004; Dedhia et al., 2009; Naylor et al., 2004; Parry et al., 2009) and decrease readmissions specifically at 30-day (Coleman et al., 2006; Parry et al., 2009), 90-day (Coleman et al., 2006; Parry et al., 2009), and 180-day intervals (Parry et al., 2009).

Cost-effectiveness analysis was not in the purview of any study reviewed; however, extrapolations and estimates demonstrated project cost savings due to decreased utilization and improved efficiency (Coleman et al., 2006; Jack et al., 2009; Naylor et al., 2004; Parry et al., 2009). In a 15-program study conducted, only two programs demonstrated significant differences in hospitalizations; but no program generated net savings (Peikes et al., 2009). Additional success was demonstrated through reduced emergency department utilization (Dedhia et al., 2009), longer time to first readmission (Naylor et al., 2004), reduction in complicated transitions (Kind et al., 2007), and improved patient satisfaction with the quality of the discharge process (Dedhia et al., 2009). A more detailed description of individual studies can be seen in Table 1.

STUDY DESIGN

The most popular study design within the reviewed articles was the randomized, controlled trial (Boutwell et al., 2009; Coleman et al., 2006; Jack et al., 2009; Naylor et al., 2004; Parry et al., 2009). Timing of the study varied from a few months to several years. Two studies were conducted through quasi-experimental designs (Coleman, Smith, et al., 2004; Dedhia et al., 2009), whereas another study conducted a retrospective analysis of administrative data (Kind et al., 2007). Inclusion and exclusion criteria varied widely, as did assignment into cases and controls.

The studies reviewed contained many limitations to interpretation of results within the context of the particular study and translation in broader persons, settings, or interventions. Lack of generalizability was the predominant study limitation because of a single-setting focus (Coleman et al., 2006; Jack et al., 2009; Parry et al., 2009) or participant selection method (Coleman, Min, et al., 2004; Coleman, Smith, et al., 2004; Kind et al., 2007). Insufficient statistical power (Parry et al., 2009; Peikes et al., 2009), variation in operations (Peikes et al., 2009), study design (Dedhia et al., 2009), and duration of study also limited findings (Coleman, Min, et al., 2004; Dedhia et al., 2009). There were many limitations presented because of participation selection, voluntary participation (Coleman, Smith, et al., 2004; Peikes et al., 2009), and significant differences between cases and controls (Coleman, Smith, et al., 2004; Dedhia et al., 2009).

CONCLUSIONS

The variety of intervention programs produced myriad results. A significant proportion of Medicare beneficiaries experience complication post-index hospitalization, justifying the participation selection to primarily include this demographic (Coleman, Min, et al., 2004). It was demonstrated that through focused efforts, increased attention to and incorporation of patient and family needs and improved communication
between providers, readmissions and overall health service utilization rates can decline (Boutwell et al., 2009; Coleman, Smith, et al., 2004; Dedhia et al., 2009; Naylor et al., 2004; Parry et al., 2009). No formal cost-effectiveness analysis was conducted in any of the reviewed studies. Potential cost savings and benefits were estimated through cost-avoidance and lower utilization, promoting hospitals that operate at a high census to invest resources in interventions geared toward reducing readmissions of the elderly patient population, therefore freeing up hospital beds, enabling increased volume and potentially revenue (Coleman et al., 2006).

The variations in definitions, methods, design, settings, and participants make translation of results difficult (Vest, Gamm, Oxford, Gonzalez, & Slawson, 2010). Many promising approaches prove efforts specific to identified populations can decrease readmissions and utilization over time. The focus on the care continuum requires providers to view themselves as a component throughout a series of activities that defines the patient's episode of care. The highest opportunity for improvement likely lies within disease/diagnosis-specific approaches (Vest et al., 2010).

Current available research lacks thorough care transitions program cost-effectiveness and cost-benefit analysis. Most studies are limited to particular disease states. Although some interventions have proven success in reducing readmissions and utilization, the sustainability and generalizability have not been determined. Care transitions interventions need to be further studied in different settings with different patient populations to identify the optimal approach(es). An additional opportunity for future investigation lies in translation of interventional programs targeted at readmission diseases in line for penalty by Medicare in 2015 (Mulvany, 2010).

LIMITATIONS

There are limitations to the literature review that warrant acknowledgment. Although intentions were to collect, review, and analyze relevant literature regarding hospital-based care transitions interventions, there is a possibility that not all pertinent literature was included. In addition, the search was limited to U.S.- and English-only literature. The search parameters, including search engines used, make it possible to have missed other relevant and supporting literature. A focus on hospital-based intervention programs also narrows the scope of review and findings, not including skilled nursing facilities, community programs, or long-term care transitions programs.

DISCUSSION

Readmissions, specifically avoidable readmissions, should be viewed as a system failure between the many levels, processes, and structures within. There admissions rate, at a macro level, serves as an indicator of overall health care system effectiveness and capability (Vest et al., 2010). Coordination and accountability, leveraged by an aligned reimbursement structure, are critical in order to drive improvements in outcomes and reductions in costs. Providers, the community, and payers need to collaborate and partner to improve the health care delivery system.

Developing performance indicators to measure care transitions programs will provide an opportunity to link performance and pay for providers (Coleman & Boult, 2007). The measures, guidelines, and standards need to address gaps between providers through (1) establishing accountability; (2) improving communication; (3) providing accurate, timely information; (4) patient-centered care, family inclusion, and education; and (5) standardized metrics to draw meaningful comparisons (Snow et al., 2009). Measurement remains difficult because of gaps in the ability to distinguish between avoidable and unavoidable readmissions. As the Centers for Medicare & Medicaid Services model currently stands, hospitals receive penalties for all-cause readmissions despite the fact that the reason for a readmission could be completely unrelated to the index stay (e.g., patient with pneumonia readmitted for a car accident–related injury 12 days after index hospitalization discharge).

Evidence studied in the review, among other resources (Johnson, 2009; Parrish, O’Malley, Adams, Adams, & Coleman, 2009; Turner, Fleming, Ownsworth, & Cornwell, 2008; Vos, Duckers, Wagner, & van Merode, 2010; Yam et al., 2010), demonstrate the ability of organizations to reduce the rate of rehospitalizations through increased efforts concentrating on improved communication and coordination across the patient’s episode of care (Boutwell et al., 2009). There is promise in the smaller, single-setting studies; however, larger, more rigorously designed trials need to be conducted to better assess the impact of programs and identify opportunities for translation and learning (Peikes et al., 2009). With the pending reform looming in the near future, organizations must become flexible and proactive. Changes in reimbursement models will lead to the evolution of care delivery from an operational and consumer perspective. The paradigm shift from volume to value challenges all stakeholders to deliver high quality care at lower costs. The need to identify and cultivate a cost-effective care transitions program is evident.
REFERENCES


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