# Care Transitions Intervention and Other Non-nursing Home Transitions Models

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## Background

A transition from one care site to another is a vulnerable time for all patients and especially for frail older adults. While the care transition from hospital to home or post-acute care facility has garnered most attention, the American Geriatrics Society (AGS) defines transitional care as "a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location" [1]. Thus, a comprehensive view of care transitions includes any site of care spanning hospital, outpatient clinic, home, skilled nursing facility, or any other type of domiciliary setting in which a patient receives care (Fig. 8.1).

This chapter broadly summarizes these core features of care transitions, including a description of various sites of care involved, discussion of patient and system-based factors contributing to adverse events, suggestion of minimum standards necessary for optimizing care transitions, delineation of the importance of medication management and accurate reconciliation, highlights of several evidence-based models shown to improve care transitions, demonstration of the role of health information technology in care transitions, and a summary of potential next steps in care transitions in light of Medicare rule changes regarding transitions.

Optimal transitional care, comprised of both the sending and the receiving features of the transfer, is essential for patients with complex care needs and is dependent upon a number of factors that are complimentary to the traditional roles of primary care, care coordination, discharge planning, and case management [2]. A national study of Medicare beneficiaries found that 22 % experience at least one care transition over the course of a year. Half of these transitions involved a single hospitalization followed by return to the original place of residence, but the remaining involved a complex sequence of transitions to varied sites of care. Few predominant transition patterns were present; most patterns were unique, which makes predicting (and accommodating) patients' care transitions difficult. The heterogeneity of transition patterns of older adults challenges approaches to improving transitions outcomes, as it becomes inefficient to plan for all possible care patterns [3].

Discharge from a hospital is just one example of a healthcare transition, but these transitions have gained heightened attention recently because of the focus on quality and financial imperatives for the U.S. healthcare system. Approximately 30 % of hospitalized older adults will experience more than one transfer across care settings within 30 days of a hospital discharge, with almost 13 % experiencing three or more transitions. In a 1997 sample of Medicare beneficiaries, 46 distinct care transition patterns were observed during the 30-day period following hospital discharge [4]. Hence, for many patients with multiple chronic comorbid conditions and geriatric syndromes, multiple healthcare transitions can be an overwhelming flurry of changes for the patients, their caregivers, and all of their healthcare providers involved across the continuum.

A widely utilized measure of hospitals' successful care transitions for patients is the 30-day readmission rate. A study of 2004 Medicare claims data revealed that nearly 20 % of discharged beneficiaries were rehospitalized within 30 days; 34 % were rehospitalized within 90 days. Half of patients discharged back to the community and rehospitalized within 30 days lacked a documented follow-up visit with their primary care physician (PCP) prior to rehospitalization. The authors estimated that the cost to Medicare for

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M.L. Malone et al. (eds.), *Geriatrics Models of Care: Bringing 'Best Practice' to an Aging America*,
DOI 10.1007/978-3-319-16068-9_8, 

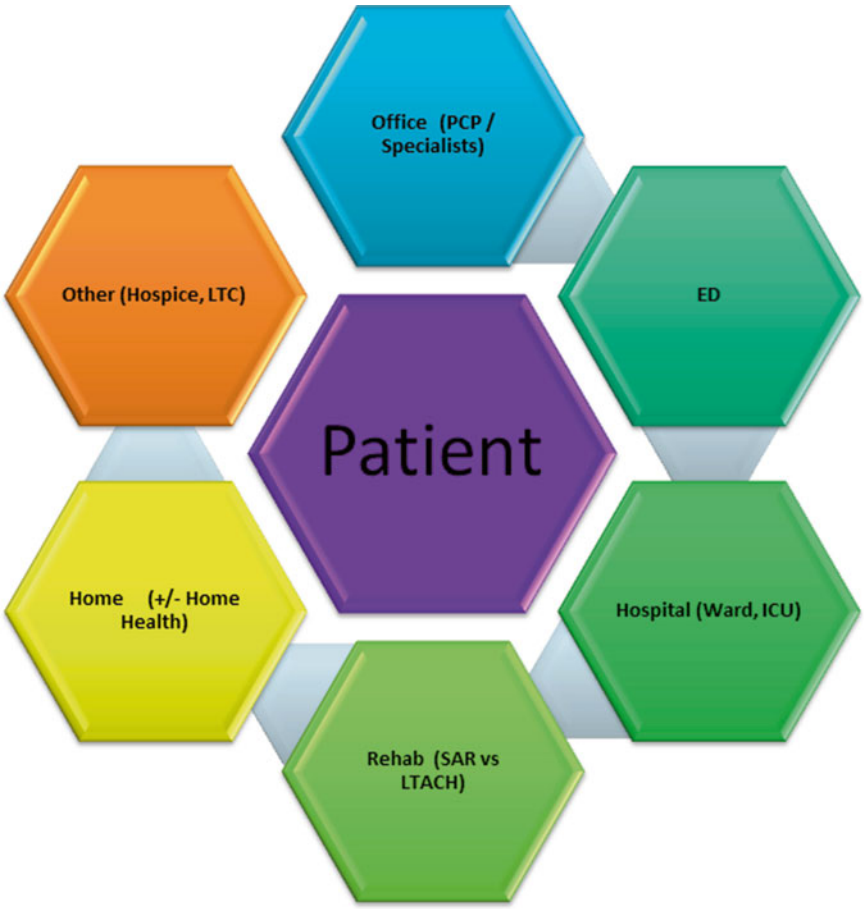



**Fig. 8.1** Sites of care transitions commonly experienced by older adults in the US healthcare system. *PCP* Primary Care Provider, *ED* Emergency Department, *ICU* Intensive Care Unit, *SAR* Sub-Acute Rehabilitation, *LTACH* Long Term Acute Care Hospital, *LTC* Long Term Care

these unplanned readmissions in 2004 was $17.4 billion [5]. Hospitals are now incurring financial penalties for excessive readmissions. The Center for Medicare and Medicaid Services (CMS) announced that in fiscal year (FY) 2014 hospitals had incurred $227 million in readmission penalties, and they anticipate that in FY 2015 the sum of readmission penalties will be much higher, approaching $530 million [6]. Due to this staggering cost to individual hospitals, health systems, and society, an obvious goal is to develop and disseminate clinical decision models to predict those who are at risk for a failed care transition, and then appropriately target this group for interventions to improve outcomes. However, predicting which patients are at risk for 30-day readmission has proven quite difficult. In which patient populations or clinical scenarios and environments is an unplanned readmission avoidable? This question remains a topic of investigation. A 2011 meta-analysis concluded that 23 % of 30-day readmissions were preventable, but that value ranged from 5 to 59 % across studies [7]. Many studies have attempted to identify risk factors for readmission and have largely focused on disease-based factors such as diagnoses and number of comorbidities. Kansagara et al. studied 26 unique models for predicting 30-day hospital readmission and found most performed poorly. The authors noted that most of the models included medical diagnoses as risk predictors, but few contained variables associated with overall health and function, illness severity, or the social determinants of health [8].

One key aspect in determining factors contributing to avoidable readmission is better understanding of the reason for and timing of 30-day readmissions. Currently, the CMS metric for measuring care transitions is the 30-day readmission rate; this metric is not based on a clinical trial demonstrating that 30 days has a clinically meaningful outcome compared to any other time period. In a 2013 study, 30-day readmissions from Medicare beneficiaries from 2007 to 2009 were analyzed for three Diagnosis-Related Groups (DRGs) which represent approximately 15 % of all 30-day readmissions for older adults: heart failure (HF), acute myocardial infarction (AMI), and pneumonia. The proportion of patients readmitted within 30 days was 24.8 % for HF, 19.9 % for AMI, and 18.3 % for pneumonia. Only a minority of the reasons for readmission was for the same diagnosis as the index admission (HF 35 %, AMI 10 %, and pneumonia 22 %). The vast majority of these Medicare patients were readmitted for a problem different than the reason for the first hospitalization. Regarding timing of the readmission,

for each DRG over 60 % of the readmissions occurred within the first 15 days post-discharge (HF 61 %, AMI 68 %, pneumonia 63 %). Neither the reason for, nor timing of readmissions varied by patient age, gender, or race [9]. Thus, one opportunity for reducing unplanned 30-day readmissions may be through efforts that target the first 15 days post-hospital discharge. Additionally, care transitions interventions targeting only the admitting diagnoses may not be an effective means of reducing readmissions. Rather, the authors comment on the concept of "posthospitalization syndrome"; that is "a generalized vulnerability to illness among recently discharged patients, many of whom have developed new impairments both during and after hospitalization" [10]. These new impairments often include geriatric syndromes such as loss of function and mobility; hospital acquired delirium, malnutrition, and sleep deprivation; and alterations in medication regimens leading to polypharmacy and adverse drug events. The authors further note that "this heightened vulnerability to a diversity of illnesses may explain why interventions that are broadly applicable to many conditions with multiple components or are delivered by a multidisciplinary team are more likely to reduce readmissions" [9].

In a similar vein, a 2014 study of patients age 65 and over from 126 Veterans Affairs facilities evaluated two geriatric syndromes as predictors of readmissions: (1) frailty and (2) use of high-risk medications. These potential risk factors were chosen because they were known predictors of hospital admission for older adults, they were under-studied, and data regarding presence could be gathered from existing hospital records without requiring additional personnel for data collection. As a proxy marker for frailty, the authors utilized frailty-related diagnoses shown in the literature to be a frailty characteristic or associated with such in studies using the Fried model of frailty. These diagnoses were involuntary weight loss, coagulopathy, fluid and electrolyte imbalance, anemia, and fall or fracture. Amongst these older veterans, the 30-day readmission rate was 18.5 % for FY 2006. In a generalized linear model testing for patient, provider, and facility level variables, having one or more frailty-related diagnosis significantly increased the odds ratio for a 30-day readmission (1.15; 95 % confidence interval 1.11–1.19, $p<0.001$). Additional factors associated with significantly increased odds of readmission were exemption from copay (a proxy for poverty), increasing comorbidity burden, and Emergency Department (ED) visits or hospitalizations in the prior fiscal year. With the addition of frailty in the model, age was no longer a predictor for readmission. Protective against readmission was increased primary care visits in the previous fiscal year; the impact of this benefit increased with increasing number of primary care visits. Taking a high-risk medication was associated with a reduced risk of 30-day readmission (0.70, 95 % confidence interval 0.66–0.73, $p<0.001$). However, patients with chronic use of high-risk medications and a frailty diagnosis were not protected from readmission (1.08; 95 % CI 0.97–1.20) [11]. Given that many of the high-risk medications were for symptom management, such as pain control, it is possible that use of these medications resulted in better control of symptoms from chronic illness and therefore fewer readmissions. These recent studies signal that geriatric syndromes such as frailty may inform future readmission-risk models to improve their accuracy. Additionally, readmissions for frail patients may be amenable to reduction via increased primary care visits in the outpatient setting.

In 2009, the American College of Physicians (ACP), Society of Hospital Medicine (SHM), Society of General Internal Medicine, AGS, American College of Emergency Physicians, and the Society for Academic Emergency Medicine published a collaboratively developed Transitions of Care Consensus Policy Statement in an effort to address the well documented quality gaps in care during a transition between inpatient and outpatient settings. This policy statement summarized principles required for a quality care transition, including accountability, communication, timely information exchange, patient/family involvement, respecting the hub of care coordination, providing a medical home for all patients/caregivers, empowering patients to know who is responsible for their care at every transitional point, following national standards, and standardizing metrics to enable quality improvement and accountability. Based on these guiding principles, this consensus panel developed a set of standards describing necessary components for implementation that included coordinating clinicians, care plans/transition record, communication infrastructure, standard communication formats, transition responsibility, timeliness, community standards, and measurement [12].

## Sites of Post-hospitalization Care

Older adults may require varying levels of care before and after hospitalization. These sites of care include: (1) private homes with or without home health or hospice; (2) subacute rehabilitation in a skilled nursing facility (SNF); (3) acute inpatient rehabilitation; (4) long-term acute care hospitals (LTACHs); or (5) long-term care (LTC) in a facility (Table 8.1).

The appropriate site of care following a hospitalization is typically based on patient medical and intensity of caregiving needs. Facility and licensed caregiver services in the home require documentation of need, justification for level of care, a payer source, and in some settings, documentation of a timely face-to-face evaluation by the certifying physician. Thus, obtaining the appropriate intensity of services for every patient can often be cumbersome for a busy clinician to facilitate, hallmarking the benefit of implementing

**Table 8.1** Sites of care delivery

| Site | Care provided | Eligibility requirements | Financing |
|---|---|---|---|
| *Independent Living:*<br>• House or apartment<br>• Congregate care facilities (CCFs: senior living complex, independent living facility) | • Patients managing ADLs, IADLs, & medical care with or without home health or hospice<br>• CCFs often offer group activities; may provide higher level of services (meals, medication assist) for added $ | • Older age for admission to CCFs<br>• Home-bound status & need for skilled services for home health<br>• MD certified terminal diagnosis & anticipated life-expectancy of <6 months for hospice | • Self-pay or some LTC insurances cover CCFs, paid caregivers<br>• MCR Part A covers home health & hospice |
| *Assisted Living Facility (ALF)*<br>• Free standing or housed in LTC facility<br>• Specialty Care-Assisted Living Facility (SCALF) for patients with CI | • Services provided varies; most offer assist with meals, some ADLS, laundry, medications, housekeeping, & provide group activities & socialization | • Need for assistance with IADLs and/or ADLs<br>• Most require residents still be able to ambulate or self-propel wheelchair | • Self-pay or LTC insurances<br>• MCD waiver program available in some states<br>• MCR Part A covers home health |
| *Sub-acute Care/Skilled Nursing Facility (SNF)*<br>• Free standing facility or housed within hospital or long term care facility | • Skilled nursing or rehabilitation services such as IV medications, enteral tube feedings, wound care, or physical/occupational therapy | • Documented need for daily skilled care following a qualifying hospital stay of at least three inpatient days within the prior 30 days<br>• Some may provide higher levels of care such as trach/ventilator care | • MCR Part A covers up to 100 days (co-pay for days 21–100) |
| *Inpatient (Acute) Rehabilitation*<br>• Free standing facility or housed within hospital | • Licensed as an acute hospital<br>• Comprehensive rehabilitation services (physical, occupational, and speech) | • Need for MD supervision of care<br>• Approved diagnosis and able to tolerate and benefit from 3 h of therapy/day, 5 days/week OR, in certain cases, 15 h of therapy over a 7 day period<br>• Does not require preceding hospitalization | • MCR Part A payment based on CMS prospective payment system for rehabilitation diagnoses |
| *Long-Term Acute Care Hospital (LTACH)*<br>• Free standing facility or housed within hospital | • Licensed as an acute hospital<br>• Extended medical care requiring prolonged services (e.g., ventilator weaning, TPN, wound care, etc.) | • Need for daily MD and skilled care for patients who may improve with time<br>• Does not require preceding hospitalization | • MCR Part A |
| *Custodial Care/Long-Term Care (LTC)* | • Comprehensive medical, personal, & social services care | • Varies by state; in general for persons no longer able to live in community due to functional dependencies and/or chronic illness | • Self-pay, LTC insurance, or MCD<br>• MCR Part A covers MHB |

Modified from Bowman EH, Flood KL, Arbaje AI. Models of care to transition from hospital to home. In: Malone M, Capezuti E, Palmer RM, editors. Acute care for elders—a model for interdisciplinary care. New York, NY: Springer Science and Business Media; 2014:175–202 with permission

interdisciplinary teams comprised of members who can help execute these often difficult arrangements—as well as ensure that appropriate payer sources will be enacted.

## Factors Contributing to Adverse Events During Care Transitions

A care transition from a hospital to one of these sites of care represents a vulnerable time and exposes patients to risks for adverse clinical events, increased healthcare utilization, and preventable rehospitalizations [2]. In a 2003 prospective study of 400 patients discharged to home following hospitalization, Forster et al found 19 % of patients experienced an adverse event from care management during the care transition; 30 % of these events were deemed preventable and 31 % ameliorable. The authors identified key targets for improvement during a care transition, including: (1) recognition and communication of unresolved problems across care settings; (2) enhancing patient education and self-management of treatment plans; (3) post-discharge medication therapy monitoring; and (4) overall clinical condition monitoring during the care transition period [13]. A growing body of literature has also identified several additional patient and system-level risk factors among older adults for suboptimal care transitions (Table 8.2).

In addition to these risk factors, the traditional fee-for-service payment models in a fragmented healthcare environment may discourage providers from spending the time required to collaboratively develop an optimal care

**Table 8.2** Patient- and system-level factors associated with suboptimal care transitions or early readmission

| Patient-level factors | System-level factors |
|---|---|
| • Age >80 years<br>• Recent hospitalization (within 30 days)<br>• Longer hospital length of stay<br>• Increased number of comorbidities<br>• Functional disability<br>• Unmet functional needs<br>• Male gender[a]<br>• Member of racial/ethnic minority[a]<br>• Unmarried[a]<br>• Low income<br>• History of depression<br>• Living alone<br>• Lack of self-management ability<br>• Limited education<br>• History of substance abuse<br>• Lower self-reported health status | • Failure in implementation of plan of care (durable medical equipment, home health care, follow-up appointments, medications, tests)<br>• Communities with high hospital admission rates<br>• Patients having a usual place to receive health care<br>• Homelessness<br>• Lack of discharge education<br>• Insufficient communication across care settings |

Modified from Bowman EH, Flood KL, Arbaje AI. Models of care to transition from hospital to home. In: Malone M, Capezuti E, Palmer RM, editors. Acute care for elders—a model for interdisciplinary care. New York, NY: Springer Science and Business Media; 2014:175–202 with permission

[a]Mixed results in the literature

transition plan and therefore unintentionally contribute to adverse events experienced by the patients discharged to home [13]. Disease-based models of inpatient care and reimbursement rules increasingly bring about patients who are too frail to return home but who also no longer "qualify" for inpatient or rehabilitation settings. This ever-expanding group of patients is therefore at risk for vulnerable care transitions and unplanned readmissions. The uninsured have even fewer (or no) post-hospital care options.

## Common Themes in Optimal Care Transitions

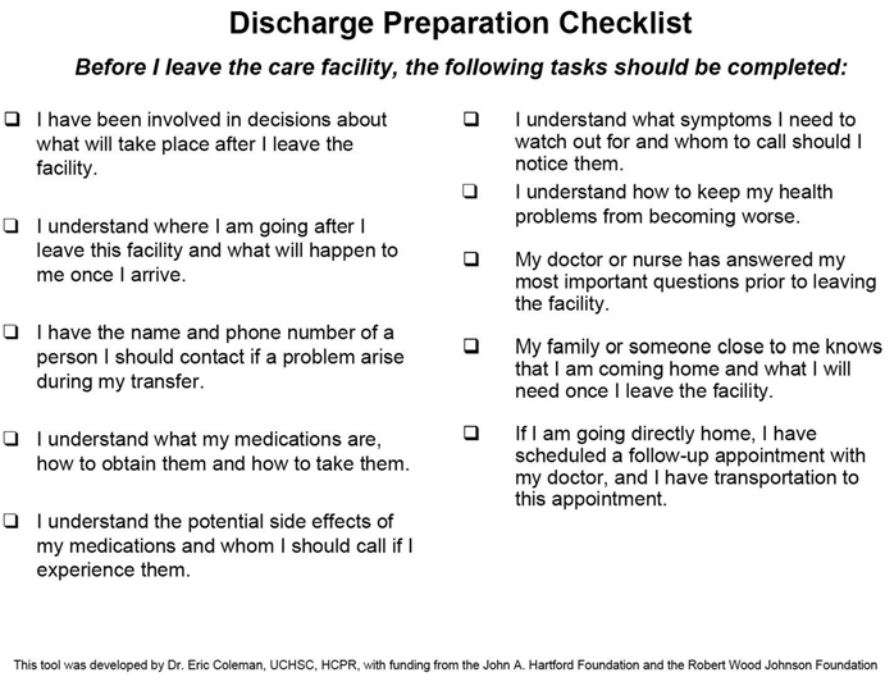
A well-documented and comprehensive plan of care and communication transfer, as well as the availability of healthcare providers trained in caring for patients with complex needs, is the central backbone of the care transition. Furthermore, the healthcare practitioner will ideally have some knowledge about (or take the time to elicit) the patient's goals of care, preferences, and current clinical status as well as baseline level of functioning. Finally, the care transition should also take into account the logistical arrangements, care coordination by all healthcare professionals involved in both sides of the transition, and also address the need to educate both patient and family or other involved caregivers. The ideal transition of care thus offers an interdisciplinary approach to address the patient's individualized care needs, provides accurate and timely medication reconciliation accounting for changes made during the transitional care event, engages patients and families throughout the transitional process using techniques to verify that instructions are understood, and emphasizes the *timely* and *accurate* provision of information to the providers at the receiving site of care. This process has been described as "the Discharge Transitions Bundle" [14].

### Communication Across Care Settings

A successful transition from hospital to a new care setting requires efficient, accurate, and timely communication of hospital discharge information from the sending to the receiving care providers. Many studies have revealed that delayed or incomplete transfer of clinical information to PCPs following a hospitalization is common and may contribute to medical errors and rehospitalizations. A systematic review of communication regarding a patient's hospitalization found that only 12–34 % of PCPs received a discharge summary by the time of the patient's first post-hospitalization follow up appointment. Additionally, hospital discharge summaries frequently lacked information essential to a safe care transition, including discharge medications, tests pending at discharge, and counseling provided to patients and families [15]. To address information transfer, many of the studied care transitions interventions utilize a brief personal health record with vital medical and hospitalization information that is transported by the patient across care settings. This will be described in more detail below.

### Patient/Caregiver Self-Management

Patient activation, or one's ability and willingness to manage his/her own medical problems and health care, is increasingly recognized as a factor impacting healthcare utilization, costs, and outcomes. According to a 2007 survey conducted by the Center for Studying Health System Change, only 41 % of US adults are highly activated in their health care [16]. This lack of self-management ability has been identified as a risk factor associated with early rehospitalization among Medicare beneficiaries [17]. During a care transition, the only person who is present at all points in time across all settings is the patient (and any existing involved caregivers). The concept of patient activation is optimized in many of the studied care transitions interventions through the use of "coaching" patients and caregivers. Various methods of patient coaching have been employed, including the use of personal nursing coaches or checklists that the patient can use to be reassured they are transitioning



**Discharge Preparation Checklist**

***Before I leave the care facility, the following tasks should be completed:***

- ❑ I have been involved in decisions about what will take place after I leave the facility.
- ❑ I understand where I am going after I leave this facility and what will happen to me once I arrive.
- ❑ I have the name and phone number of a person I should contact if a problem arise during my transfer.
- ❑ I understand what my medications are, how to obtain them and how to take them.
- ❑ I understand the potential side effects of my medications and whom I should call if I experience them.
- ❑ I understand what symptoms I need to watch out for and whom to call should I notice them.
- ❑ I understand how to keep my health problems from becoming worse.
- ❑ My doctor or nurse has answered my most important questions prior to leaving the facility.
- ❑ My family or someone close to me knows that I am coming home and what I will need once I leave the facility.
- ❑ If I am going directly home, I have scheduled a follow-up appointment with my doctor, and I have transportation to this appointment.

This tool was developed by Dr. Eric Coleman, UCHSC, HCPR, with funding from the John A. Hartford Foundation and the Robert Wood Johnson Foundation

**Fig. 8.2** Discharge preparation checklist®. (Courtesy of © Eric A. Coleman, MD, MPH—The Care Transitions Program®, Denver, Colorado. http://www.caretransitions.org/documents/checklist.pdf.)

with the critical information they need to accurately follow through with the next stage of their health care [18]. One of the most often used tools is Eric Coleman's Discharge Preparation Checklist® (Fig. 8.2) [19].

How information is communicated to patients and families is important. Despite elders often reporting comprehension of discharge plans, many factors combine to hinder patient understanding and adherence, including cognitive impairment, functional illiteracy and low healthcare literacy, socioeconomic status (SES), multimorbidity, cultural barriers, absent caregivers, and physical limitations [20–22]. Research demonstrates many elders and caregivers misunderstand discharge instructions, lack appropriate follow-up care, and do not receive complete, accurate and legible medication lists at the time of hospital discharge. Healthcare professionals also increasingly recognize the crucial role that culture plays in the health care of patients and families, and the need to communicate in a culturally competent manner [23]. Various strategies and resources must therefore be employed when developing any transitional tool designed to engage the patient to assist in self-management during the care transition. Likewise, tools can be employed to help determine patient comprehension of instructions in a manner that is sensitive to all cultures, levels of education and healthcare literacy. One of these methods is the "teach back" concept, also known as the "show me" method or "closing the loop" in which the healthcare provider confirms that information has been explained to the patient in a way that is truly comprehended, regardless of education or literacy level (Fig. 8.3) [24]. Regardless of culture, SES, race, or literacy level, clarifying shared goals is not only important to all patients but critical to patient engagement and activation. Thus, it is vital that the healthcare system work to educate the workforce to master skills of effective communication with patients and caregivers from all economic and cultural backgrounds.

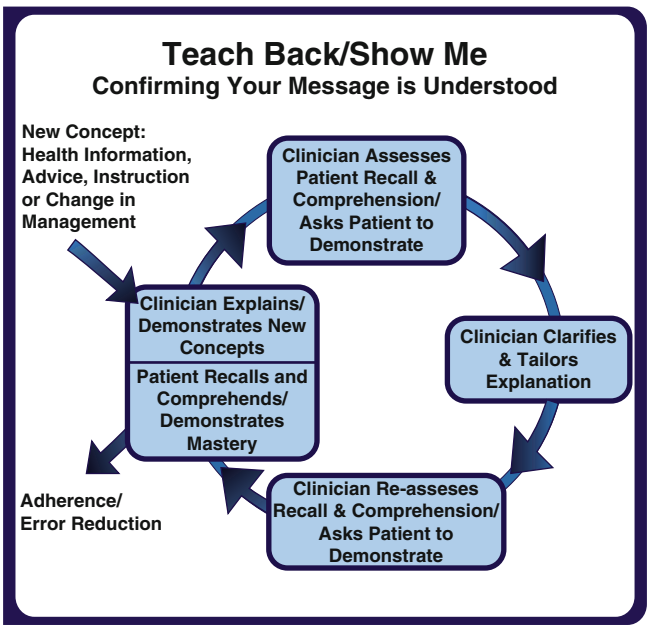



**Fig. 8.3** Teach back/show me method®. (Courtesy of Tony DiNuzzo, PhD, Program Director, East Texas Geriatric Education Center-Consortium—Acute Care of the Elderly Clinical Training Program: Improving Communication Skills between Health Professions Students and Older Patients)

## Medication Management and Medication Reconciliation in Care Transitions

Alterations in medication regimens during and after hospitalization are common and lends to another source of vulnerability for patients. Research demonstrates that medication-related care transitions adverse events are common. Forster and colleagues in their prospective study found that 66 % of adverse events from a hospital care transition were adverse drug events [13]. Moore and colleagues found medication continuity errors (discrepancy between hospital discharge medications and medications patient was taking at the time of first follow-up visit) were present in 42 % of patients within 2 months of a hospital discharge [25]. Recurring in the 2013 National Patient Safety Goals is the mandate for hospitals to "maintain and communicate accurate patient medication information." Incorporated in this goal are the following elements of performance: (1) obtain and document a reconciled medication list upon admission to the hospital; (2) provide the patient (or caregiver as needed) with written medication instructions at the time of hospital discharge; and (3) coach the patient (or caregiver) in key elements of medication management, such as the importance of keeping an updated list and taking this list to outpatient appointments [26]. Some key strategies for preparing a patient's discharge medication list include providing: (1) an indication for each medication, stop dates or tapering schedules as appropriate, and clear behavioral triggers for as-needed psychiatric medications; (2) tapering or discontinuation of medications added during the hospital stay (such as analgesics, proton pump inhibitors, or laxatives with as-needed orders); and (3) formal reconciliation of the discharge regimen with the preadmission regimen [27]. Reconciliation results in clear documentation of which medications on the discharge list are new (relative to the preadmission regimen), which of the preadmission medications have been stopped, and which dosages of continued medications have been changed (Fig. 8.4).

## Roles of Interdisciplinary Team Members, Patients, and Families in Care Transitions

The 2009 Transitions of Care Consensus Policy Statement comments on the "lack of a single clinician or clinical entity taking responsibility for coordination across the continuum" [12]. The roles of clinicians during care transitions remain poorly defined. A recent study described a conceptual framework summarizing clinicians' roles during care transitions to address this gap in the literature and found incongruence between clinicians' perceptions of their routine versus ideal roles during care transitions (e.g., routine: sending a discharge summary to the receiving clinician; ideal: calling the receiving clinician and discussing the patient's case). The investigators identified factors prompting clinicians to act closer to their ideal roles, such as personally knowing the receiving clinician or major decisions having been made in the hospital regarding goals of care. The conceptual framework highlights the continued ambiguity in accountability during transitions [28]. In addition to the physician role, newly published care transitions interventions emphasize use of all team members. In 2011, Naylor and colleagues published a systematic review of care transition intervention studies focusing on chronically ill adults transitioning from a hospital. Eighteen of the 21 of the RCTs included in the review utilized either a registered or advance practice nurse as the intervention leader or coordinator [2]. Social workers, pharmacists, and other disciplines have also been utilized in interventions. For example, an intervention developed at Rush University, the Enhanced Discharge Planning Program, employs master's-prepared social workers to intervene by phone with patients within 48 h of discharge to support the care plan, address unmet needs, and connect them with needed providers [29]. Several care transitions studies also include family members or caregivers in the intervention [2].

In May 2013, CMS issued new guidelines effective immediately regarding discharge planning for Condition of Participation (CoP) for hospitals. The new requirements are extensive in expanding the scope of "discharge planning" to "transition planning," and emphasize the goal to "consideration of transitions among multiple types of patient care settings that may be involved at various points in the treatment of a given patient." This new CoP requires that "a registered nurse, social worker, or other appropriately qualified personnel must develop, or supervise the development of, the evaluation" of care transition needs. The guidelines cite the benefits of an interdisciplinary team approach to hospital discharge planning, scheduling follow-up appointments and filling prescriptions prior to discharge, and follow-up phone calls within 24–72 h of discharge to ensure adherence to the care transition plan and identify any barriers [30]. These are functions that may be performed by non-physician team members, should be coordinated with patients and families, and are crucial components of a successful care transition.

## Interventions to Improve Care Transitions Post-hospitalization

Recently, developed innovative models of transitional care have targeted the previously identified processes in need of improvement during a care transition and have shown promise that specialized programs emphasizing certain key elements including patient and caregiver coaching, early transition planning, and meticulous medication reconciliation can improve outcomes. The majority of published studies regarding care transitions interventions have been in the

**Source of Medication Information:**

- ▫Patient self report / medication list
- ▫Family/caregiver
- ▫Prescription bottle labels
- ▫Electronic Medical Record
- ▫Pharmacy reconciliation
- ▫Outside facility
- ▫Prior Discharge medication list
- ▫Other

**Medication Allergies With Noted Reactions:**

1. _____
2. _____
3. _____

**Please STOP These Preadmission Medications:**

*(including prescription, over-the-counter, and natural/herbal medications)*

1. _____
2. _____
3. _____

**Please CONTINUE Only These Preadmission Medications:**

*(including prescription, over-the-counter, and natural/herbal medications)*

1. _____
2. _____
3. _____

**Please BEGIN These NEW Medications:**

*(including prescription, over-the-counter, and natural/herbal medications)*

1. _____
2. _____
3. _____

**Vaccinations Received During This Hospital Admission:**

1. _____
2. _____
3. _____

**Additional Information/Recommendations:**

1. _____
2. _____
3. _____

Pharmacy / Phone & Fax (If Known): _____

Medication history and reconciliation performed by: _____

Discharge medication counseling provided to patient by: _____

Patient given written and verbal information and verbalized understanding? _____

**Fig. 8.4** Medication reconciliation form template. Thorough medication reconciliation will guide the patient to understand which new medications to start, which old medications to continue or stop taking, assess patient comprehension of instructions, and offer contact information for future questions. (Modified from Bowman EH, Flood KL, Arbaje AI. Models of care to transition from hospital to home. In: Malone M, Capezuti E, Palmer RM, editors. Acute care for elders—a model for interdisciplinary care. New York, NY: Springer Science and Business Media; 2014:175–202 with permission.) *ADL* activities of daily living, *IADL* instrumental activities of daily living, *CI* cognitive impairment, *MCR* Medicare, *MCD* Medicaid, *CMS* Centers for Medicare & Medicaid Services, *TPN* total parenteral nutrition, *MHB* Medicare Hospice Benefit

last 10 years. In Naylor's 2011 systematic review, care transition RCTs were examined in terms of how results (positive or negative) can inform implementation of healthcare reform objectives. All but one study had at least one positive outcome; nine included beneficial outcomes related to hospital readmissions. Each of these nine studies impacting readmissions utilized a nurse as the intervention coordinator and six of the nine utilized home visits [2].

Based on results of prior research, four primary models of care transitions originating in the hospital setting have emerged: (1) Transitional Care Model (TCM); (2) Care Transition Intervention® (CTI); (3) Re-Engineered Discharge (Project RED); and (4) Better Outcomes for Older Adults Through Safe Transitions (BOOST). The first three of these four models will be discussed herein; BOOST will be described in a separate chapter (see Chap. 9). In addition, recent research of Acute Care for Elders (ACE) and Mobile ACE models of care has demonstrated promising impact on care transitions outcomes and will be briefly discussed below and more thoroughly elaborated upon in separate chapters (see Chaps. 1 and 4).

## Transitional Care Model

The TCM developed by Naylor and colleagues provides comprehensive, evidence-based transitional care coordination for chronically ill high-risk older adults [31, 32]. The heart of this model is the Transitional Care Nurse (TCN), an advanced practice nurse who follows enrolled patients from in-hospital planning meetings to home, focusing on caregiver and patient needs. The TCN conducts an initial hospital visit and assessment, followed by subsequent home visits focusing on medication management, coaching patients for follow-up visits and even accompanying them to the visits, and conducting follow-up phone calls during weeks without planned home visitation. In this fashion the TCN is available 7 days a week via both home visits as well as telephone access for 1–3 months of post-hospital follow-up. Findings from multi-site RCTs demonstrate reduced readmissions, total hospital days, and costs in addition to increased patient, caregiver, and provider satisfaction [32, 33].

## Care Transitions Intervention

The CTI developed by Coleman and colleagues is a 4-week program addressing four primary pillars of a successful care transition: (1) improved communication via a portable record (Personal Health Record) of essential health information the patient carries across care settings; (2) medication reconciliation and self-management training; (3) patient-scheduled follow-up appointments; and (4) improved patient knowledge regarding clinical symptoms signaling worsening status ("red-flags") and how to respond [34, 35]. These components are taught by a nurse Care Transitions Coach®, who provides individualized coaching by conducting an initial hospital visit and assessment, working with the patient to complete the Discharge Preparation Checklist®, coaching the patient how to utilize their own personal health records, and providing oversight of medication management. The Care Transitions Coach® follows the patient for 4 weeks post-discharge via home visits and three follow-up phone calls. A RCT of the CTI demonstrated significantly lower 30- and 90-day rehospitalizations, reduced mean hospital costs at 90 and 180 days, and improved patient disease self-management and increased confidence about their role during care transitions [36].

## Re-Engineered Discharge

Project RED developed out of a safety net hospital research group at Boston University Medical Center that develops and tests strategies to improve the hospital discharge processes through promoting patient safety and reducing rehospitalization [37, 38]. Project RED strives to minimize rehospitalizations by seeking to engage patients in disease self-management training, medication reconciliation, matching discharge plans with published clinical guidelines, improving communication through expedited transmission of discharge summaries, and transporting patient health records to all care settings. Patient coaching is again performed by a nurse; post-discharge phone calls by a pharmacist ensure medication reconciliation and reinforcement of the discharge plan. The RED Toolkit is founded on 12 discrete, mutually reinforcing components of a discharge, provides guidance to implement the RED processes for all patients, including those with limited English proficiency and from diverse cultural backgrounds, and helps hospitals reduce readmission rates by replicating the discharge process. In a randomized study, Project RED patients experienced a 30 % decrease in 30-day hospital utilization (combined emergency department visits and readmissions) compared to usual care. Project RED patients reported being more prepared for discharge and had significantly improved knowledge regarding their diagnosis and PCP name. They were also significantly more likely to follow-up with their PCP. The intervention was most effective in patients with a prior hospitalization within the last 6 months [39].

## ACE/Mobile ACE

Multiple published studies have demonstrated improved clinical outcomes and cost savings from the ACE Unit model of care. More recent studies have also pointed toward the

additional benefit of an ACE model on care transitions. Flood et al demonstrated lower costs and fewer all-cause rehospitalizations within 30 days for ACE Unit patients compared to similar patients cared for on a usual care unit [40]. Hung et al describe a Mobile Acute Care for Elders (MACE) service utilizing a mobile interdisciplinary team that seeks to decrease the hazards of hospitalization, facilitate transitions of care, and provide patient and family education. MACE service patients were less likely to experience adverse events, had shorter length of stay (LOS), and rated the quality of their care transition higher than matched general medicine patients [41]. Other studies have produced mixed results. Researchers at Johns Hopkins University pilot-tested a model that combined the strengths of inpatient geriatric evaluation, co-management, and transitional care in a cluster-randomized trial of 717 hospitalized older adults on four general medicine services. In the two treatment groups, a geriatrician–geriatric nurse practitioner dyad assessed patients co-managed geriatric syndromes, provided staff education, encouraged patient self-management, communicated with PCPs, and followed up with patients soon after discharge. The intervention was associated with greater patient satisfaction with inpatient care and slightly higher quality care transitions (though not statistically significant) [42]. In a 2012 published systemic review and meta-analysis of over 6,800 hospitalized elderly patients, Fox et al demonstrate that acute geriatric unit care based on all or part of the ACE model improves patient- and system-level outcomes, including fewer fall risks, less delirium, less functional decline at discharge from baseline 2-week pre-hospital admission status, shorter LOS, fewer discharges to nursing home, lower costs, and more discharges to home. There were no significant differences found in hospital readmissions, mortality, or post-hospitalization functional status compared with functional baseline before hospital admission [43].

## Care Transition Intervention Targeting Patients Experiencing Low Socioeconomic Status

Data regarding care transitions interventions specifically targeting lower socioeconomic status patients are limited. Challenges seen in this patient cohort may include lack of social support, a higher prevalence of mental health and substance abuse disorders, and barriers to accessing healthcare. A 2014 trial developed and tested a Care Transition Innovation (C-Train) specifically designed for socioeconomically disadvantaged adults. In this cluster randomized controlled trial, 382 community-dwelling hospitalized adults without mental illness who were either uninsured or had public insurance and were admitted to a general medicine or cardiology service were randomized to the intervention or usual care transition planning. The C-Train intervention consisted of: (1) a care transition coach who engaged the patient at the time of admission and conducted post-discharge follow-up phone calls; (2) home visits for highest risk patients; (3) medication reconciliation and oversight by a pharmacist including guidance to the patient's PCP to use low-cost medications and provision of 30 days of medications post-discharge for patient unable to afford medications; (4) arrangement of PCP follow-up; and (5) monthly continuous quality improvement meetings with the goal to continuously improve the intervention. The C-Train intervention did not reduce 30-day readmissions (14.4 % vs. 16.1 %, $p=0.644$) or ED visits (24.4 % vs. 19.6 %, $p=0.271$). Based on the 3-item Care Transitions Measure, the intervention did lead to a significant improvement in the quality of the care transition experience compared to usual care (OR 2.17, 95 % CI 1.30–3.64). Intervention patients also had a lower unadjusted mortality rate within 30 days of discharge (0 % vs. 3 %, $p=0.02$) [44]. One possibility is that improved access to care afforded by the C-Train intervention actually reduces mortality by increasing access to hospitalization. This study cohort consisted of 60 % males, over half of whom were uninsured, over 75 % of whom lacked a usual source for routine primary care, and over 40 % of whom had a history of illicit drug use. Thus, this patient population will likely require a different approach than patient populations without these extenuating circumstances, and the degree to which readmissions are preventable at least in this population remains to be determined.

## Outpatient-Based Models Shown to Reduce Unnecessary Hospitalizations/Readmissions

One method of reducing unplanned readmissions in older adults is to prevent an unnecessary initial hospitalization. Several interventions that are outpatient-based follow the principles of Guided Care (also see Chap. 11) and have demonstrated comprehensive geriatric care while preventing unnecessary hospitalization and/or readmissions. These include Palliative Care Programs for patients with life-limiting illness/injury, Geriatric Resources for Assessment and Care of Elders (GRACE), Hospital at Home®, and Program for All-Inclusive Care for Elders (PACE). These are briefly summarized below and thoroughly developed in Chaps. 6, 10, 14, and 24, respectively.

Guided Care (GC) is an outpatient-based interdisciplinary team model of care led by a specially trained registered nurse in partnership with PCPs and caregivers to support a practice's most complex patients by assessing the patient and primary caregiver at home, creating an evidence-based care plan for providers and an action plan for patients and caregivers, promoting patient self-management, monthly monitoring of patients' conditions, coordinating efforts of care

providers in all settings, smoothing transitions between sites of care, educating and supporting family caregivers, and facilitating access to community resources. Studies suggest implementing GC is feasible and improves patient, caregiver, and provider satisfaction as well as patient ratings of the quality of chronic care. In a clustered RCT, GC patients tended to utilize fewer home health services but there was no difference in hospital, emergency department (ED), and SNF services or 30-day readmission rates compared to usual care patients [45]. However, this trial targeted patients known to be high risk for healthcare utilization based on predictive models. A lower or moderate risk target population may have benefited more from GC in terms of reducing healthcare utilization.

Other models of care coordination that have been shown to impact care transitions use principles found within GC. Hospital at Home® provides hospital-level care for an acute illness in-home for patients meeting medical eligibility criteria, thereby avoiding admission to an acute care facility. Necessary medical equipment (oxygen, infusions, lab, and radiology testing) is provided. Patients receive nurse and physician visits daily, with additional visits as needed [46]. Hospital at Home® programs demonstrate improved patient and caregiver satisfaction and reduced costs with comparable or improved clinical outcomes compared to traditional hospital admission [47, 48]. The PACE Program is a capitated Medicare and Medicaid community-based managed care program that provides interdisciplinary team care to frail adults. Persons age 55 and over are eligible for PACE if they live in a PACE catchment area and meet state Medicaid criteria for nursing home eligibility. PACE enables frail elders to continue community living via an interdisciplinary team with development of comprehensive, individualized medical, psychosocial, and functional care plans [49]. PACE is associated with improved survival, quality of life, functional status, patient satisfaction, and reduced hospitalizations and nursing home placement [50]. Similar in concept, GRACE helps frail community-dwelling elders age in place by incorporating in-home geriatric assessment of patient and caregiver(s) through a geriatric nurse practitioner and social worker team in conjunction with the PCP. Individualized care plans addressing geriatric syndromes developed by the GRACE team (geriatrician, pharmacist, mental health liaison, nurse practitioner/medical social worker dyad) are approved by the PCP prior to implementation. GRACE has demonstrated improved patient-centered care transitions and reduced hospital readmissions and nursing home placement [51].

Patients with chronic or life-limiting illnesses have many complex post-discharge needs that often do not include the common discharge destination of a rehabilitation facility; therefore this patient population is at risk of readmission due to unmet symptomatic needs. For patients not yet meeting the guidelines for Medicare Hospice Benefit, a palliative care (PC) approach focusing on patient-centered goals of care is often more appropriate. The National Consensus Project (NCP) defines PC as care that is focused on "seriously ill patients and those with advanced disease, who are unlikely to be cured, recover, or stabilize, and their caregivers" [52]. PC focuses on aggressive symptom management as well as providing interdisciplinary support for patients and families with the goal of improving quality of life when cure might not be possible. PC is not exclusively end of life care, should be provided at any stage of illness that symptom burden occurs, and should be offered in conjunction with all other appropriate forms of medical treatment, including curative therapies. The NCP offers a means by which PC can be operationalized through eight different domains to effectively manage pain and other distressing symptoms, while also incorporating psychosocial and spiritual care with consideration of patient/family needs, preferences, values, beliefs, and cultures. These eight domains include: (1) structure and processes of care; (2) physical aspects of care; (3) psychological and psychiatric aspects of care; (4) social aspects of care; (5) spiritual, religious and existential aspects of care; (6) cultural aspects of care; (7) care of the imminently dying patient; and (8) ethical and legal aspects of care. PC is provided by an interdisciplinary team and can be delivered in all care settings. The Medicare Hospice Benefit, just one component of PC, can be activated when the patient's life expectancy is anticipated to be 6 months or less. Research reveals patients receiving PC experience improved symptom control and satisfaction, reduced ED visits and hospitalizations, reduced costs, and greater likelihood of dying at home compared to those receiving conventional care [53, 54].

## Other Sites of Care Transitions

The ED is another site for care transitions. Older adults have a higher risk of return ED visit or hospitalization within 30 days of ED discharge compared to younger adults. Preliminary studies have investigated the roles of screening tools and geriatric assessments in the ED to target elders at risk for poor care transitions. The most studied screening tools for identification of high-risk elder ED patients are the Identification of Seniors At Risk Tool (ISAR) tool and the Triage Risk Stratification Tool (TRST) [55, 56]. These brief screens are designed to be completed within a few minutes by ED staff and assess for geriatric syndromes such as cognitive, functional, and visual impairments; difficulties with medication management; and prior history of ED visits or hospitalizations. The TRST also allows for ED staff to include any concerns for patient safety. To date, these tools have demonstrated moderate predictability for identifying elders at risk for return ED visit or hospital admission

following ED discharge [56, 57]. Preliminary studies have examined use of screening and targeted geriatric assessment in the ED. In 2001, Mion et al describe the implementation of the Systematic Intervention for a Geriatric Network of Evaluation and Treatment (SIGNET) program, using the TRST to identify elders discharging from ED to home who are at risk of poor outcomes or readmission to receive a geriatric assessment by a geriatric clinical nurse specialist (GCNS). The GCNS coordinates patient and caregiver education and needed referrals to community agencies, PCPs, and/or outpatient geriatric assessment. In a feasibility study, SIGNET significantly reduced the proportion of elders with return ED visits within 30 days and significantly increased the number of referrals to community agencies [58]. The Discharge of Elderly from the Emergency Department (DEED) program does not use a screening tool for targeting patients, but instead utilizes comprehensive geriatric assessment (CGA) performed by a nurse for patients aged 75 and older who are discharged from the ED to home. Based on the CGA findings, an interdisciplinary team develops a care plan, in coordination with the patient, caregivers, PCP, and community resources, and follows the patient for 4 weeks, including home visits. In a RCT, the DEED II study demonstrated a significantly reduced rate of hospitalization within the first 30 days and reduced rate of ED admission for 18 months following index ED visit. Intervention patients also experienced a significantly longer time to the first repeat ED visit [59].

## Health Information Technology as a Tool to Assist with Care Transitions

### Electronic Health Record and Discharge Summaries

Advances in health information technology and increasing use of electronic medical records (EMRs) provide opportunities to improve timeliness of information transfer following hospitalization. Kripalani and colleagues note in their review that discharge summaries generated electronically (information systems merging administrative and clinical information) tended to result in more complete and timely information transfer from a hospitalization to the PCP compared to dictated summaries. The authors concluded that hospitals should use information technology to populate discharge summaries with required clinical information such as medications, diagnoses, and test results (and pending tests) wherever possible and that discharge summaries should be sent or be available for direct access by the PCP on the day of discharge [15]. In keeping with the crucial theme of timely and accurate information transfer, the SHM's Hospital Quality and Patient Safety Committee assembled an expert consensus panel to develop the Ideal Discharge of the Elderly Patient Checklist. This checklist focuses on the key transition safety elements of patient status (including function, cognition, and resuscitation status), medication reconciliation, patient education, and follow-up (including pending tests) that should be included in discharge summaries. This checklist has been formally endorsed by the SHM [60]. Additionally, in 2009 a collaborative working group consisting of members from the American Board of Internal Medicine Foundation, ACP, SHM, and the Physician Consortium for Performance Improvement® (PCPI) published the Care Transitions Performance Measurements (CTPM) [61]. The working group defined six process measures that have since been endorsed by the National Quality Forum and should be incorporated into continuous quality improvement efforts to improve care transition outcomes. These process measures are:

- Measure 1: Reconciled medication list received by discharged patients.
- Measure 2: Transition record with specified elements received by discharge patients.
- Measure 3: Timely transition of transition record (to facility or PCP for follow-up care).
- Measure 4: Transition record with specified elements received by discharged patients for ED discharges.
- Measure 5: Discharge planning/post-discharge support for heart failure patients.
- Measure 6: Promote improved patient understanding of and adherence to treatment plans via addition of appropriate questions to patient satisfaction measures.

This set of process measures were chosen because they are linked to the following identified indicators of success in improving care transitions:

1. Reduction in adverse drug events.
2. Reduction in patient harm related to care transition medical errors.
3. Reduction in unnecessary healthcare utilization (e.g., hospital readmissions).
4. Reduction in redundant tests/procedures.
5. Achievement of patient goals, including functional status, comfort care measures, etc.
6. Improved patient understanding of and adherence to the treatment plan.

A list of the SHM endorsed minimal key data elements that should be included in all discharge summaries and the corresponding process measure is summarized in Table 8.3.

### ACE Tracker

To address the barriers in dissemination of the ACE Unit model of care, Malone and colleagues from the Aurora Health Care System developed the software program ACE

**Table 8.3** Crosswalk summarizing minimal key data elements for: (1) inclusion in all discharge summaries for next site of care/provider; and (2) related care transition process measures

| Data element | SHM endorsed key elements to be included in discharge summaries [ref] | Care transition process measure [ref] |
|---|---|---|
| *Transition record of hospitalization or ED visit* | | |
| • Problem that precipitated hospitalization or chief complaint | X | 2,4 |
| • Brief hospital/ED course with key events/findings, consultant recommendations, and anticipated problems and suggested interventions | X | 2 |
| • Results of key tests/procedures | X | 2,4 |
| • Discharge diagnoses | X | 2,4 |
| • Condition at discharge, including status of geriatric syndromes such as function and cognition | X | |
| • Discharge destination | X | |
| • Transition record transmitted to facility, PCP, or other provider designated for follow-up care within 24 h of discharge | | 3 |
| *Medication reconciliation* | | |
| • Discharge medication list reconciled with patients' list of medicines prior to hospitalization (medications to be continued, medications not to be continued, new medications added) | X | 1,2,4 |
| • Discharge medication doses, frequencies, instructions, and stop dates (if applicable) included for each continued and new medication | X | 1 |
| • Medication cautions (allergies, adverse reactions) | X | 1 |
| *Follow-up information* | | |
| • Follow-up care needed, including appointments made or needed, provider name(s), contact information, and date of appointment | X | 2,4 |
| • Tests/studies pending at discharge and contact information for obtaining results | X | 2 |
| • 24/7 call back number for questions or new problems related to hospitalization | X | 2 |
| *Patient/caregiver teaching* | | |
| • Patient education/instructions provided | X | 2,4 |
| • Documentation of patient/caregiver level of understanding | X | |
| *Advance care planning* | | |
| • Summary of goals of care discussions including but not limited to code status, advance directives, surrogate decision maker | X | 2 |

*X* required element, *SHM* Society of Hospital Medicine, *ED* emergency department, *PCP* primary care physician. (Modified from Bowman EH, Flood KL, Arbaje AI. Models of care to transition from hospital to home. In: Malone M, Capezuti E, Palmer RM, editors. Acute care for elders—a model for interdisciplinary care. New York, NY: Springer Science and Business Media; 2014:175–202 with permission)

Tracker for use in several EMR systems. The ACE Tracker program collects existing data from a patient's EMR in real time to generate an individual patient level summary of geriatric clinical data and a unit-based summary spreadsheet of key geriatric risk factors in all hospitalized patients age 65 and older. These items include information such LOS to date, total number and potentially inappropriate medications prescribed, risk of falls and skin breakdown based on nursing assessment screens, use of urinary catheters, and formal consultation to disciplines such as physical and occupational therapy and social services. In 2010, Malone and colleagues published a descriptive pilot study using ACE Tracker as a means of disseminating the ACE model of care to hospitals and units that did not have consistent access to a geriatrician. Units using ACE Tracker experienced significant reductions in use of urinary catheters and significant increase in early physical therapy assessments. While this preliminary study did not demonstrate changes in LOS or 30-day readmissions, this was not the primary objective of this study and the use of this novel health information technology in improving care transitions remains an area for further research [62].

## Telehealth and Readmissions

The high cost of caring for many patients with certain chronic diseases such as congestive heart failure (CHF) is due largely to frequent rehospitalization for exacerbations. Some studies have looked at disease-specific populations to examine the effect of home-based interventions on readmission rates; results have been mixed. In an attempt to compare the effectiveness of discharging patients hospitalized

with CHF exacerbations home with usual outpatient care, nurse telephone calls, and home telecare delivered via a 2-way video-conference device with an integrated electronic stethoscope, a small 1-year randomized trial of 37 patients demonstrated a significant 86 % decrease in CHF-related readmissions in those receiving telecare, as well as an 84 % decreased rehospitalization in those receiving post-discharge phone calls. However, the difference between the groups was not statistically significant, implying that in this small study population, home telecare did not offer incremental benefit beyond telephonic follow-up which can also be done at a significantly lower cost burden [63].

In another study evaluating the efficacy of a telehealth-facilitated post-hospitalization support program in reducing resource use in patients with CHF, patients from the Department of Veterans Affairs were randomized to telephone, videophone, or usual care for follow-up care after hospitalization for CHF exacerbation. The intervention resulted in a significantly longer time to readmission, but had no effect on readmission rates, mortality, hospital days, or urgent care clinic use. Thus, rigorous evaluation is needed to determine whether any target patient population will benefit from specific telehealth applications, as well as identify which technologies are the most cost-effective [64].

## Medicare Rule Changes Regarding Care Transitions and Impact on Hospitals

In a fee-for-service payment model, interventions that decrease rehospitalizations have not been financially rewarded in the past due to the time required by providers to coordinate care transitions. However, the Patient Protection and Affordable Care Act (PPACA), commonly called the Affordable Care Act (ACA), was signed into law in 2010 and instituted new quality-based Medicare rules encouraging hospitals and providers to improve care transitions [65]. The support for adoption of evidence-based care transition models that improve outcomes and lower costs is an area of focus as hospitals anticipate increasing numbers of elders.

### New Financial Rules

Beginning January 1, 2013, CMS implemented new Transitional Care Management codes for PCPs to receive compensation for time spent in the outpatient setting seeing patients who require moderate or high complexity decision making following discharge from an acute care setting (hospital, psychiatric hospital, inpatient rehabilitation, LTACH), SNF, community mental health center, or observation status in a hospital to a community living setting (home, domiciliary, rest home, ALF living) [66]. The goal of the new codes is to improve care coordination through incentives for care transition management in the outpatient care setting rather than risk hospital readmission. Along these same lines, in January 2015 providers will begin receiving monthly stipend from Medicare for coordinating the care of complex patients with two or more chronic conditions [67]. This new federal payment policy is aimed at compensating providers for care coordination, thus recognizing the time and effort involved for integrated patient care tasks that have been largely unreimbursed until now. This provision also is intended to help keep patients with multiple chronic conditions out of the hospital, through encouraging providers to assess patients' social and psychological as well as medical needs when devising a comprehensive plan of care. This new policy will operate by paying providers a $42 monthly stipend per Medicare patient, and will be offered regardless of whether the provider is a physician or a mid-level provider such as a physician assistant or nurse practitioner. Approximately 20 % of the monthly $42 stipend (an expense similar to what is already spent on physician services) will ultimately come from the patient. Care management services can be provided only if the patient agrees to it in writing. In turn, the patient will benefit through the requirement that their PCP must offer 24/7 care for any urgent care needs, in addition to the improved comprehensive care coordination that is inherent to the policy. The very act of providing separate payments to providers for chronic care management represents a significant policy change, and the theory behind it is that the improved care coordination intended to result could pay for itself by keeping these complex patients out of the hospital.

Another provision of the ACA designed to reduce costs related to unplanned readmissions is the Hospital Readmission Reduction Program (HRRP) [68]. Under this program, hospitals with above average 30-day readmission rates for three diagnoses (acute myocardial infarction, heart failure, and community acquired pneumonia) began incurring financial penalties in the form of reduced reimbursements in 2013. The number of conditions and the amount of the financial penalties is anticipated to increase annually in the coming years. The readmission rates for specific conditions are publically reported on the Medicare Hospital Compare website. These new financial rules may be contributing to recent slight downward trends in readmissions as hospitals prepared for the penalty phase of the HRRP. From 2006 to 2011, the all-cause 30-day readmission rates declined from 16.0 % to 15.3 % for Medicare patients. Also in 2011, 12.3 % of Medicare beneficiaries experienced a potentially preventable readmission (PPR), a decrease from 13.4 % in 2006. These 2011 PPR rates ranged from 9.9 % in the highest performing hospitals to 15.3 % in lowest performing hospitals [69].

The ACA also includes the Bundled Payments for Care Improvement Initiative with the goal to reduce fragmentation of care by aligning acute care and post-acute care settings and

providers through "bundling" payments that require financial and performance accountability. Participants in these new bundled payment models began testing their programs in 2013 [70]. Additionally, the Community-Based Care Transitions Program provides up to $500 million in funding from 2011 to 2015 to community-based organizations partnering with hospitals to improve care transitions services while reducing costs [2, 71]. Finally, the ACA calls for the development of Accountable Care Organizations (ACOs). The new ACOs will be groups of care providers and hospitals that develop a collaborative partnership with the goal to improve coordination of care to ensure patients are receiving the right care at the right time, especially for the chronically ill and complex patient population [72]. Updates on new funding opportunities and the stage of development of ACOs and all of the new ACA care coordination initiatives can be found on the CMS Innovation Center website [73].

### New Process Rules

In addition to financial rules, CMS is also addressing the quality of transitions through new process mandates. The 2013 CMS CoP guidelines holds hospitals accountable for four primary phases of care transition planning: (1) developing a formal care transition plan for every inpatient, or screening to identify patients at risk for adverse transitions outcomes; (2) evaluating the post-discharge needs of high-risk patients, or any patient upon patient or physician request; (3) developing an individualized care transition plan; and (4) initiating the care transition plan prior to discharge. To achieve these mandates hospitals are expected to assess the patients' functional and cognitive abilities, types of post-hospital care that will be needed, and the patient's caregiver/support system in order to determine the patient's capacity for self-care (or need for care providers) and needs for appropriate post-hospitalization care setting. Encouraged is the development of collaborative relationships between hospitals and facilities and providers who care for discharged patients [30].

## Future/Next Steps in Care Transitions

A consensus document by the National Transitions of Care Coalition outlines 3 perspectives from which information needs to be obtained in order to fully address optimal care coordination and transitions: (1) patient/family; (2) healthcare professional; and (3) healthcare system [74]. Ongoing culture change driven by this diverse group of stakeholders will likely be required to continue to improve care transitions at the patient, caregiver, provider, system, and community levels [75]. Broader thinking represents moving beyond targeting diagnosis-specific readmission rates (e.g., CHF), because individual patients are diverse and diagnoses alone do not define risk. Focusing excessively on one targeted outcome as opposed to a holistic methodology may have unintended consequences. Reducing readmissions has been a prioritized outcome due to related risk to patients and costs to the healthcare system. However, a hospital readmission may not represent poor quality and may in fact result in improved outcomes for some patients. For example, hospitals with higher readmission rates for CHF have lower CHF mortality rates, highlighting that these patients are living longer and therefore will require hospitalizations. Furthermore, some studies have indicated that as care coordination improves, patients may experience more hospitalizations as their overall access to health care improves [76]. Also, there is a complex relationship between patients' socioeconomic status and risk for readmission. A hospital's share of low-income patients is a strong predictor of 30-day readmissions, and hospitals with large shares of low-income patients tend to have higher readmission rates. Policy makers must guard against deterring hospitals from caring for poor patient populations while also not accepting lower quality standards for hospitals with a larger proportion of low-income patients.

In a 2013 publication, a modified Delphi consensus technique was used to identify five key measurable outcomes of quality of a care transitions: (1) readmission within 30 days of discharge; (2) seeing a primary care physician within 7 days of discharge for high-risk patients; (3) medication reconciliation completed upon hospital admission and repeated prior to discharge; (4) readmission within 72 h of discharge; and (5) time from hospital discharge to first visit by home care nurses [77]. Additional work is also essential in standardized measurement of patient and family needs and experiences during a care transition. One metric used for the purpose of assessing the quality of care transitions is either the 3- or 15-item Care Transitions Measure (CTM) [78]. This questionnaire can be administered over the phone or by mail to patients recently discharged from the hospital. The CTM has been endorsed by the National Quality Forum. Like many survey tools, the CTM may be difficult for patients with cognitive impairment to understand. While the 15-item version can be administered to caregivers in place of the patient, the 3-item version cannot.

While results of care transition studies to date are promising, the number of RCTs is small, and many have an intervention sample size of less than 100 patients or other study limitations [79]. The June 2013 Medicare Payment Advisory Committee Report to Congress recommends a broader research plan that includes the association of readmissions and mortality, health literacy, and patient frailty as well as expansion of research and policy to additional groups such as observation patients and post-acute providers [69]. Additional research is also needed regarding care transitions

from EDs and SNFs and the use of information technology. Finally, the healthcare workforce, including informal care providers, will require additional training in care transitions. Currently, this training is not required in healthcare provider licensure and certification processes [2].

## Conclusions

To date, published transitional care interventions incorporate common themes, including information transfer strategies, patient/caregiver coaching for self-management, aggressive medication reconciliation, and portable health records. Next-generation interventions may incorporate additional use of health information technology and telemedicine as well as additional sites of care. Ultimately, the "perfect" hospital transitional care program will provide a comprehensive set of key elements that providers and systems are charged with developing and incorporating into their daily practice and will result in improved adherence with discharge instructions, timely outpatient follow-up, and improved patient functioning and satisfaction with reduced adverse medical events, readmissions, costs, and caregiver burden [80]. Given the declining number of geriatricians, exemplary models of care will also provide the means of educating trainees and providers across all disciplines to work as interprofessional teams across the care continuum.

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