# Exploring Transitional Care: Evidence-Based Strategies for Improving Provider Communication and Reducing Readmissions

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## INTRODUCTION

Transferring a patient from one care setting (e.g., a hospital, nursing facility, primary care physician, long-term care, home health care, or specialist care) to another is termed "transition of care" by the Centers for Medicare and Medicaid Services (CMS). The coordination of care across the health care continuum is crucial to the implementation, management, and evaluation of a patient's treatment plan. The transfer and receipt of patient information between different levels of care and locations ensure continuity and promote successful treatment. Unfortunately, breakdowns in these processes, as well as the ineffective handoff of information between care providers, can lead to poor transitions and miscommunication among providers. This, in turn, can cause confusion regarding treatment plans, duplicative testing, discrepancies in medications, and missed physician follow-up, ultimately leading to fragmented care and patient dissatisfaction.<sup>2</sup> Moreover, hospital readmissions may result from failures in communication as well as from poor coordination of services, incomplete treatment, incomplete discharge planning, and/or inadequate access to care.3

Inefficient transition of care can also contribute to burgeoning health care costs. In 2011, approximately 3.3 million adult 30-day all-cause readmissions took place in the U.S., with an associated \$41.3 billion in hospital costs.<sup>4</sup> Hospital readmissions can be particularly costly for Medicare patients. Each year, Medicare payments for unplanned rehospitalizations are estimated to total more than \$17 billion, or nearly 20% of Medicare payments to hospitals.<sup>5</sup>

Under the Patient Protection and Affordable Care Act (PPACA), the CMS established a program that reduces payments to hospitals for certain readmissions occurring after October 1, 2012. The CMS defines an unacceptable readmission as one that takes place within 30 days after discharge from either the same or another institution for any of three measures endorsed by the National Quality Forum: congestive heart failure (CHF), pneumonia, and acute myocardial infarction (MI). These three disorders account for a large portion

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of the economic burden on health care in the U.S., with CHF, pneumonia, and acute MI racking up \$1.7 billion, \$1.1 billion, and \$693 million, respectively, in total costs in 2011. Because of these significant expenditures, the CMS penalized hospitals with excess readmissions beyond a risk-adjusted average rate of 1% of base operating payments in fiscal year (FY) 2013; the CMS increased this penalty to 3% in FY 2014. In 2015, the CMS plans to finalize its proposal to add two new readmission measures: hip/knee arthroplasty and chronic obstructive pulmonary disease (COPD).

A major challenge in ensuring continuity of care across health care settings is the effective communication of information between care providers and institutions. This includes advising care providers of the patient's home medications upon his or her admission to the new institution, as well as reconciling the patient's medications upon discharge, ensuring that the patient has access to medications and medical supplies at home, using health information technology (HIT) to ensure that providers have access to complete care plans, and providing adequate patient education. Failures in these key areas can lead to negative outcomes and disrupt the patient's health care journey.

In summary, more-effective handoff and improved provider communication can have a positive effect on hospital readmissions, quality of care, and patient satisfaction, ultimately reducing overall health care costs while potentially avoiding CMS penalties for excessive rehospitalization rates. In this article, we discuss evidence-based strategies for improving provider communication and reducing readmissions.

# **EFFECTIVE PROVIDER COMMUNICATION**

Direct provider communication is essential for a patient's smooth transition between health care settings. Incomplete health information and the lack of a universally accessible electronic health record (EHR) limit the acute care provider's ability to access records from the ambulatory care and community pharmacy records, particularly if the inpatient provider is someone other than the primary care provider. Miscommunication may be perpetuated after discharge from the acute care setting because the primary care provider may not receive complete documentation of the patient's diagnostic tests, procedures, and medication changes during hospitalization. Hospital discharge summaries have been recognized as primary sources of communication errors.<sup>7,8</sup>

A meta-analysis found that only 12% to 34% of discharge summaries had reached outpatient care teams by the time the patient saw a physician.<sup>7</sup> In a recent study, community

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pharmacists were asked what would be on their "wish list" of information that could help reconcile medications for recently discharged patients. The pharmacists indicated the following: the discharge diagnosis; indications for medications; laboratory results; medication changes; the patient's medical insurance; the medications used during hospitalization; the identity of the next provider the patient was scheduled to see; "stop" orders for medications that should be discontinued; and the identity of the patient's primary care provider.9

Without adequate information during transfers, it is difficult to maintain continuity of care. The National Transitions of Care Coalition (NTOCC) has recognized the barriers to direct communication between health care providers during patient transitions and supports the use of a universal transfer tool to facilitate the movement of patients between care settings.<sup>2</sup>

Since it may be difficult and time-consuming for a home caregiver or rehabilitation facility staff member to contact an acute care provider for information after a patient has been discharged, the use of standardized forms ensures that important data are relayed to other members of the patient care team. The Continuity Assessment Records and Evaluation (CARE) item set, developed by the CMS, is as an example of such a tool. CARE is intended to provide up-to-date and accurate information at the time of hospital discharge, during the post-acute care admission, and during discharge after post-acute care. The tool includes a standardized assessment of the patient's medical, functional, cognitive, and social support status across care settings, with the ultimate goal of improving the quality of care that the patient receives. 10 The Society for Post-Acute and Long-Term Care Medicine (AMDA) has also developed a Universal Transfer Form to facilitate the transmission of necessary patient information from one care setting to another. 11 The use of these standardized forms could potentially reduce treatment errors stemming from inaccurate or incomplete information.

#### USING HEALTH INFORMATION TECHNOLOGY

HIT may provide a more timely and seamless transfer of information between providers and health care settings compared with traditional paper forms. Many of the HIT innovations of relevance to transitional care have resulted from regulatory changes driven by the American Recovery and Reinvestment Act (ARRA) of 2009 and by the PPACA of 2010. 12,13 The use of EHRs can increase providers' access to health information; reduce redundancies in diagnostics and in patients' health histories; and improve provider-to-provider communications. However, gaps in the HIT infrastructure may contribute to miscommunication and result in delays in information sharing.<sup>14</sup> Current limitations to the use of HIT include a lack of interoperability among systems; the creation of information "silos" that result in fragmented information sharing; the lack of shared responsibility for the goals of care (among providers) and for constructing interoperable systems (among HIT vendors); and concerns regarding data breaches and the security of protected health information.<sup>14</sup>

Despite these limitations, HIT can play a central role in transitions of care, and its use has the potential to reduce hospital readmission rates. The National Quality Forum has developed a quality data model (QDM)-adopted and supported by the CMS—that describes a standardized platform for the electronic management of clinical outcomes. The QDM facilitates quality measurement and evaluates clinical outcomes based on structured data captured from the patient's EHR, from personal health records, and from other electronic sources. 15,16

The incorporation of HIT into practice settings may vary, however. Long-term and post-acute care facilities, for example, have been slower to adopt EHRs compared with acute care practices. 17 In 2012, Wolf and colleagues found that only 6% of long-term acute care hospitals and 4% of rehabilitation hospitals had a basic EHR system. 18

To address these gaps, several states are participating in the Health Information Exchange Challenge Grant Program, sponsored by the Office of the National Coordinator for Health Information Technology, which asks the states to suggest innovative methods to improve connectivity among health information exchanges and interoperability among providers. 19 For example, Oklahoma instituted a program that works with nursing homes, an acute care hospital, and a regional health information exchange provider to improve information sharing at transitions of care. This program included the development and implementation of an evidence-based care transition tool; digital nursing documentation that linked nursing home health information to hospital emergency-department care providers; and the adoption of a universal transfer document, which accompanied patients to post-acute care facilities after hospital discharge. 20 Several other programs encourage novel uses of current HIT to improve information sharing across transitions of care; more information on this topic is available at www.healthit.gov.

HIT systems continue to evolve. Nevertheless, until a universal electronic health care language is invented, the communication of care plans and the exchange of information at transitions of care will likely remain fragmented.<sup>21</sup>

## MEDICATION RECONCILIATION

Accurate medication reconciliation is also a key component of the transition process. According to the Institute for Healthcare Improvement, medication reconciliation involves creating an accurate list of all of the medications a patient is taking (including drug names, dosage strengths, the frequency of dosing, and routes of administration) and comparing this list against a prescriber's admission, transfer, and/or discharge orders. The ultimate goal of this process is to provide the correct medications to the patient at all points of contact with the health care system.<sup>22</sup> Discrepancies or errors—such as omissions, duplications, contraindications, and unclear information—in the medication reconciliation process have been linked to medication errors, delays in receiving necessary medications, and rehospitalization.<sup>23</sup> Studies indicate that 46% to 56% of all medication errors occur at a transitional point of care.<sup>24,25</sup>

During the course of a patient's care, clinicians may discontinue, hold, or adjust outpatient medications as needed to manage or optimize therapy; therefore, discharge medication reconciliation is necessary to prevent errors and to ensure post-acute care communication. This procedure consists of repeating the admission reconciliation prior to a patient's discharge or transfer from one setting to another. The medication profile is again reconciled and provided to the next level of care along with any new prescriptions and written instruc-

tions. The completeness and accuracy of the discharge medication list depend mostly on the accuracy and completeness of the admission medication reconciliation. If an incomplete or inaccurate home medication list is obtained, discrepancies will result after discharge. It has been estimated that between 42% and 82% of patients' discharge medication lists contain at least one discrepancy. This inaccurate information may lead to inappropriate transitions of care and is a major contributor to rehospitalizations among the elderly.<sup>26–30</sup>

In recent years, the national health care system has focused on identifying best practices to help reduce medication-related readmissions. In 2005, the Joint Commission named medication reconciliation as a national patient safety goal, recognizing the potential for errors and negative outcomes associated with incomplete medication histories.<sup>23,31</sup>

Project ReEngineered Discharge (Project RED) is a research group at Boston University Medical Center that has developed and tested strategies to improve the hospital discharge process and to reduce rehospitalization rates. The RED intervention has 12 components, including establishing follow-up appointments, confirming medication reconciliation, conducting patient education, and coordinating the care provided by nurse discharge advocates. In a study of 749 English-speaking hospitalized adults randomly assigned to RED interventions or standard care, the 370 participants in the intervention group had a reduced rate of hospital utilization compared with the 368 patients receiving standard care (0.314 versus 0.451 visits per person per month, respectively; incidence rate ratio, 0.695; P = 0.009). The RED interventions were found to be most effective in patients who had used hospital services in the six months prior to the index admission (P = 0.014). <sup>32</sup> Project RED has also shown that incorporating medication reconciliation into the discharge process can reduce rehospitalizations.32,33

In 2006, researchers at Froedtert Hospital, an academic medical center in Milwaukee, Wisconsin, created a discharge medication reconciliation report form through the electronic medical record (EMR) to improve the accuracy of discharge medication orders. The form provided physicians with complete, accurate medication information and decreased the risk for transcription errors. A discharge medication report was also developed for patients to take home. An analysis of the center's discharge reconciliation process showed that medication errors were reduced from 90% to 47% on the surgical unit, and from 57% to 33% on the medical unit.<sup>34</sup>

Researchers at the University of Pittsburgh School of Pharmacy reported that the most common discrepancies found during medication reconciliation interviews were missing medications and incorrect dosages or dosing frequency.<sup>35</sup>

It must be pointed out, however, that studies evaluating methods of medication reconciliation have rarely involved a sufficient number of patients (approximately 1,000) to allow the statistical significance of the data to be determined. Therefore, one must consider the various study designs before concluding that the evidence demonstrates a true reduction in readmissions.

## **ENSURING ACCESS TO CARE AFTER DISCHARGE**

In addition to reconciling patients' medications, other factors play keys roles in optimizing treatment after transition of care. These factors include ensuring that patients have access to

medications and durable medical equipment, such as nebulizers, mobility assistive devices (including walkers, wheelchairs, and power mobility devices), and home oxygen. It is also important that patients fill, pick up, and consume their medications appropriately. In this regard, a retrospective cohort study involving an acute MI registry in Ontario, Canada, found that only 74% of patients filled all of their discharge prescriptions within 120 days after discharge. The adjusted one-year mortality rate was higher in patients who filled some prescriptions rather than all prescriptions. 36 In a study of patients with acute coronary syndrome, one in six subjects delayed filling their initial clopidogrel prescription, and this delay was associated with an increased risk of death and MI within 30 days of hospital discharge.<sup>37</sup>

Pharmacy access is another important factor in ensuring post-discharge medication adherence. Ginde and colleagues reported that fewer patients were likely to obtain medications when given a prescription compared with those given the medications at the time of a hospital visit.<sup>38</sup>

The Medication REACH (Reconciliation, Education, Access, and Counseling Healthy Patients at Home) program, offered at Einstein Medical Center in Philadelphia, provided uninsured patients with medications free of charge for the first 30 days. In a study of 89 Medication REACH patients conducted at Einstein, the readmission rate was 10.6% in the intervention cohort (n = 47) compared with a rate of 21.4% in the control group (n = 42). Thus, the program demonstrated that providing access to medications could potentially help reduce readmission rates.35

Some facilities have started bedside medication delivery to ease transitions of care. Kirkham and colleagues evaluated 30-day readmission rates in an intervention group compared with a usual-care group. Two key components of the study were bedside delivery of post-discharge medications and follow-up phone calls two or three days after discharge. The authors found a sixfold increase in 30-day readmissions in the usual-care group compared with the intervention group.<sup>39</sup>

Delivering medications at bedside before discharge may help overcome initial barriers to medication access as well as resolve any insurance or medication discrepancies that may exist prior to the patient's discharge. However, although bedside delivery of medications may improve initial access to treatments, interaction with a social worker may be helpful in resolving long-term financial issues impacting medication access.40

# OTHER KEY CONSIDERATIONS

## **Communication of Health Care Information**

The communication of health care information to patients and their families may be limited by physical deficits, such as hearing, vision, or cognitive impairments, and by poor health literacy. Only about 12% of Americans have a "proficient" level of health literacy, and more than one-third of U.S. adults have difficulty in completing common health tasks, such as following the directions on the label of a prescription drug. 41 Individuals with poor health literacy or cognitive impairments may be unable to read and understand written health information, which can contribute to nonadherence with discharge instructions and medications and to the failure to follow up with care providers after discharge. 42-44

To improve communication with patients with low health literacy or cognitive deficits, health care providers need to be given sufficient time to interact with patients to identify these barriers and to find ways to overcome them. <sup>45,46</sup>

### Follow-Up Telephone Calls

In addition to medication reconciliation, programs such as Project RED, Medication REACH, and Better Outcomes for Older Adults Through Safe Transitions (BOOST) have implemented follow-up telephone calls to patients to improve transitions of care. 35,47,48 These telephone calls focused on the discharge medication list, the adverse effects of treatment, any patient health issues, and barriers to filling prescriptions. Depending on the program, providers made follow-up telephone calls 24 to 72 hours after discharge. Such calls can immediately address the patient's needs; resolve any problems in transition between care settings; and assess proper self-management. However, a systematic review found that follow-up telephone calls had no effect on readmission rates. 49

#### **Post-Discharge Home Visits**

Many programs have implemented post-discharge home visits by various health care providers. Visits to recently discharged patients may allow providers to monitor a patient's vital signs and laboratory test values; manage medication use; provide additional health care education; and identify any new problems. One study found a decrease in readmission rates when both a nurse and a pharmacist visited heart failure patients at home. In addition, telehealth services (telemedicine) can remotely monitor a patient's health status at home and transfer this information to health care providers, thus allowing drug regimens to be adjusted as needed. This, in turn, could prevent rehospitalizations.

## CONCLUSION

The provision of effective transitional care services, including accurate medication reconciliation, is central to improving outcomes-based patient care delivery, to reducing hospital readmissions, and to reducing overall costs to the health care system. A growing body of evidence indicates that medication reconciliation services promote patient satisfaction and improve treatment outcomes as patients transfer from acute care to post-care settings or home. <sup>54</sup> Clear and comprehensive provider—patient communication is the key to achieving optimal transition of care. This includes the use of post-discharge telephone calls, telehealth services, and home visits.

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