

Improving Transitions of Care for Patients With Thromboembolic Disease

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This article summarizes proceedings from a roundtable meeting that was conducted to identify quality gaps around transitions of care and explore ways to improve transitions of care, particularly for patients with or at risk for thromboembolic disease.

High rehospitalization rates have been identified as a possible marker of poor quality of care.¹ From 2003 to 2004, 20% of Medicare (fee-for-service) beneficiaries discharged from the hospital were rehospitalized within 30 days, while 34% were rehospitalized within 90 days.² Although in 2007 Medicare beneficiaries accounted for 15% of the US population,³ they accounted for over one-third (36%) of hospitalizations and almost half (46%) of total hospital costs.⁴ According to billing records of patients rehospitalized within 30 days, only half visited a doctor's office between the time of discharge and readmission, suggesting that there is a need for improvement regarding follow-up care.²

Medicare's Quality Improvements Organizations assessed factors resulting in hospital readmission in 14 states and identified the following primary causes: medication discrepancies that occur during admission or after discharge; inadequate follow-up in the post discharge setting; fragmented documentation of medical conditions or failure to communicate need for medical treatment; poor patient self-management; community infrastructure and awareness problems; and insufficient patient support, including support from family caregivers.^{5,6} These results suggest that many rehospitalizations and other complications may be preventable if there is better communication and coordination among health-care professionals, patients, and caregivers during transitions of care, particularly in patients receiving complex antithrombotic therapy.

Transitions of Care

Transition of care refers to the movement of patients between healthcare locations, providers, or different levels of care within the same location as their conditions or care needs change.^{7,8} These transitions may occur at multiple different axes, such as

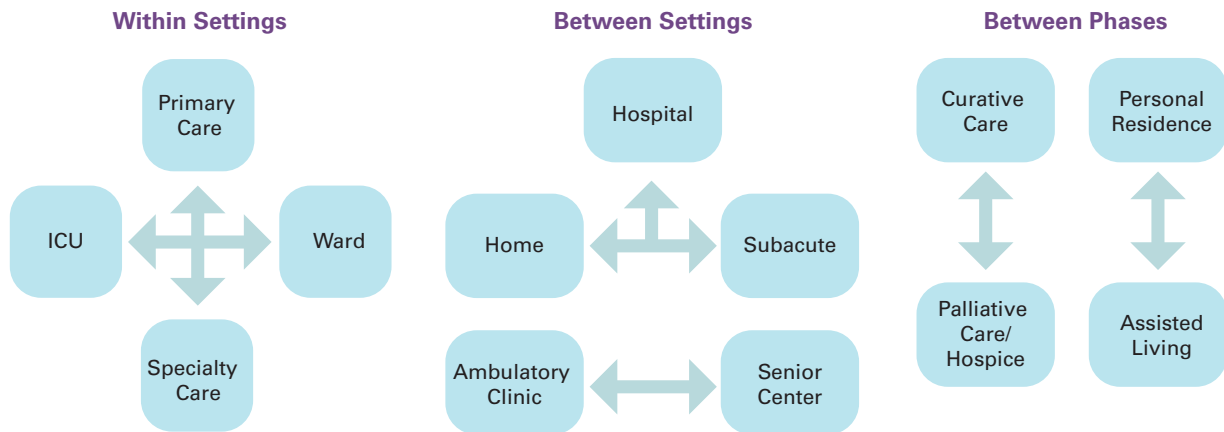
Abstract

Patients with or at risk for thromboembolic disease have many transitional interactions within the healthcare system. Transitions of care—when patients move between or within sites of care, or transition from inpatient to outpatient status—create repeated and diverse opportunities for medication errors, rehospitalization, and other adverse events that may increase costs. Although effective antithrombotic therapies are available, these therapies are complex, underprescribed, and frequently suboptimally managed, a situation further exacerbated by poor patient adherence to therapy. Physician and patient education may help address knowledge gaps related to antithrombotic therapy to help ensure that patients receive appropriate therapy and adhere to the therapeutic regimen. Due to the complexities of antithrombotic therapy it is not surprising that when these patients experience transitions of care, the potential for errors and suboptimal outcomes becomes compounded. Efforts are under way to improve the process of transitional care, including the development of protocols for medication reconciliation, improved communication between clinicians at hand-off, the use of electronic medical records, and the introduction of a collaborative approach among different types of healthcare providers, including pharmacists, nurses, and care managers, so that transitional care is provided smoothly and safely.

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For author information and disclosures, see end of text.

■ **Figure.** Care Axes Between Which Transitions of Care May Occur^{7,9-11}



ICU indicates intensive care unit.

within clinical settings (eg, from the intensive care unit to a hospital ward), between clinical and/or non-clinical settings (eg, from subacute facility to home), and between care phases (eg, from curative care phase to palliative care phase) (Figure).^{7,9-11}

The definition of transitional care, as proposed by the American Geriatrics Society, is a set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different locations or settings. Patients with a serious illness or substantial medical risk that persists after hospital discharge commonly move from a hospital to another setting (eg, a subacute or long-term care facility or home), and the opportunities for something to go wrong during this transition are abundant. Broadly, care coordination during care transitions involves: (1) a comprehensive plan of care; (2) the involvement of healthcare providers who are well informed about the patient's goals, status, and preferences; (3) logistical arrangements; (4) coordination between healthcare providers; and (5) patient and family/caregiver education.^{8,11}

Poor communication between providers and healthcare locations during transitions of care frequently results in medication errors. In a study by Boockvar et al, 20% of nursing home patients transferred to and from the hospital experienced adverse drug events attributable to medication changes; 50% of these cases were caused by drug discontinuations.¹² In another study, 30% of patients discharged from the hospital were found to have at least 1 medication discrepancy capable of causing clinical harm.¹³ According to the Institute of Medicine's Committee on Identifying and Preventing Medication Errors, at least 1.5 million prevent-

able adverse drug events occur annually due to medication errors, at an annual cost of more than \$3.5 billion per year (in 2006 dollars).¹⁴

Effective transitions of care are critical to ensure good outcomes. Because many of these adverse events and hospital readmissions may be preventable, interventions have been designed to better manage care transitions at the time of hospital discharge.⁵ The Patient Protection and Affordable Care Act includes incentives for hospitals, physicians, and nurses that achieve performance targets for quality measures related to transitions of care and the National Quality Forum has endorsed a hospital-related care transitions quality measure.^{5,15} The ultimate goal of these initiatives is to improve patient care, decrease hospital readmissions, and reduce costs.⁵

Thromboembolic Disease With a Focus on AF

Patients with or at risk for thromboembolic disease have many transitional interactions within the healthcare system. An example of a condition that places patients at risk for thromboembolic disease is atrial fibrillation (AF). The costs associated with AF are substantial; in 2004, the total annual cost burden to Medicare due to stroke in patients with AF was estimated at \$9.5 billion.¹⁶ It has been estimated that more than 5 million Americans have AF; this number is expected to double by 2030, and reach 16 million by 2050.^{17,18} AF is a major risk factor for stroke; it increases the odds of having a stroke by approximately 500%.^{19,20} AF accounts for one-third of all hospitalizations for cardiac rhythm disturbances²¹; these hospitalizations result in transitions between outpatient and inpatient care settings and

frequently to extended care facilities, with each transition providing the potential for an incomplete or erroneous transfer of information with regard to antithrombotic therapy.

Contributors and Barriers to Successful Transitions of Care

Effective transitions of care require competency on behalf of practitioners, as they must stay apprised of current treatment guidelines, advances in therapy, and potential roadblocks (eg, insurance coverage). They also require accountability on behalf of patients, as the benefits of therapy are dependent on adherence to a prescribed treatment regimen. Successful transitions of care also require coordination and communication among all stakeholders. Every stakeholder in the care continuum must take responsibility for their role in ensuring good outcomes.

Role of the Practitioner

Knowledge and Application of Clinical Guidelines

Practitioners are tasked with staying up-to-date with current treatment guidelines, and knowing how to apply them within their clinical setting. The management of thromboembolic disease can be challenging. Several factors must be considered when selecting the appropriate antithrombotic agent, including appropriate use, monitoring, and management of risk of bleeding. The rapid and voluminous publication of clinical trial data over the last several years regarding new and existing antithrombotic drugs constitutes another challenge for clinicians who seek to remain apprised of the current best practices in antithrombotic therapy, especially non-specialists. The American College of Chest Physicians (ACCP) publishes authoritative, evidence-based clinical practice guidelines for antithrombotic therapy and prevention of thrombosis.²² At least a dozen other US medical organizations have produced some form of published guidelines addressing the subject of thromboembolic prophylaxis and anticoagulant therapy (Table 1).²²⁻³² The (as of this writing) soon-to-be-released 2014 AF guidelines from the American College of Cardiology/American Heart Association/Heart Rhythm Society will include recommendations regarding new oral anticoagulants.

Despite available guidelines, too often, there is poor and inconsistent use of thromboprophylaxis by clinicians. This was demonstrated in a systematic review of studies on treatment practices for AF in the general practice and hospital settings. The authors of the review identified 29 studies that reported on the use of oral anticoagulants in

Table 1. Major US Medical Organizations That Publish Guidelines or Recommendations for Thromboembolic Prophylaxis²²⁻³²

- American College of Cardiology
- American Heart Association
- American Academy of Neurology
- American College of Chest Physicians
- North American Spine Society
- American Society of Clinical Oncology
- American College of Physicians
- American Academy of Family Physicians
- Institute for Clinical Systems Improvement
- American Academy of Orthopaedic Surgeons
- Society of American Gastrointestinal and Endoscopic Surgeons
- AMDA – Dedicated to Long Term Care Medicine
- Heart Rhythm Society

patients who had previously experienced a stroke or transient ischemic attack, both of which would meet criteria for high stroke risk designation requiring anticoagulation therapy.³³ In 25 of the 29 studies, less than 70% of high-risk patients received oral anticoagulant therapy.³³ Concerns surrounding the use of warfarin (eg, risk of bleeding) have been cited as one reason for poor rates of anticoagulant use. An example of this was provided by a study published in 2006 which looked at the effect of anxiety about bleeding on the prescribing behavior of 530 physicians treating patients with AF who had at least 1 patient who experienced an adverse bleeding event while on warfarin. When the prescribing behavior during the 90 days preceding the adverse bleeding event was compared with the 90 days following the event, a 21% decrease in the likelihood of prescribing warfarin was observed.³⁴ Similar results were observed by the authors of a study published in 2005 that examined predictors of warfarin use in 945 patients with AF. The results showed that patients with an actual or perceived bleeding risk were less likely to receive warfarin treatment.³⁵

There exists a need for better practitioner education and decision support regarding the proper use of antithrombotic therapy. However, the inadequacy of thrombosis risk management is not limited to the poor rates of thromboprophylactic treatment that patients receive in the hospital or at discharge. How faithfully clinicians (and patients) manage follow-up after discharge also influences outcomes.

Inappropriate Use of Antithrombotic Drugs

The faculty described the risk of bleeding, particularly associated with the earlier generation of anticoagulants, as real and problematic. However, this fear should not prevent patients who need prophylaxis from receiving it. A key problem, as several faculty members noted, is the failure of clinicians to understand how to properly use the drugs. A lack of education on appropriate use is a major challenge, as is the lack of available qualified clinicians who know how to manage the drugs properly. In the context of long-term care, Jacqueline Vance, RNC, noted that “Many doctors in long-term care need assistance [with antithrombotic management] as they are not in the facilities on a daily basis.”

The appropriate use of antithrombotic agents involves other factors, including the clinical setting in which the agents are being used, third-party payer policies, and formulary considerations that the clinician should be aware of when selecting a specific therapy. For example, the hospital formulary may differ from the outpatient formulary, and drugs that were covered while in the hospital may not be covered at the patient’s community pharmacy.

What’s Covered? Transitioning to Long-term Care

Navigating long-term care can be confusing. Several faculty members noted that understanding which long-term facilities and providers are covered by different health plans is complicated. An example of how this may impact patients was noted by Dr Schaecher, who stated, “Medicare patients [get into difficulties when] they pick a facility that isn’t on our list of contracted facilities. They may have done all of the research, and then they find out at the time of discharge that the transfer is not authorized. Then they’re scrambling to just pick a name off of the list.” This can result in disruptions to care, which can result in readmissions and failed transitions of care. Ms Fine noted that facility discharges are often experienced during a crisis, and a care manager who is specially trained to educate families and navigate healthcare systems is particularly valuable during these transitions.

Formulary Limitations to Practice

Formularies and their associated rules intended to optimize the cost-effectiveness of antithrombotic therapy can sometimes be an obstacle to treatment. Dr Villanueva commented that in the service area in which he works, he has to contend with 12 different formularies. Each of these formularies puts limits on the drugs he has access to—based on the unique formulary rules of the different payers—and each of them has its own unique rules about when prior authorization for the prescribing of a drug is required.

Although poor rates of antithrombotic treatment, formulary limitations, and insurance coverage can represent barriers to effective transitions of care, several patient variables also influence the success of transitions.

Role of the Patient

Knowledge and Adherence

Patient knowledge is fundamental to successful transitions of care and treatment outcomes in thromboembolic disease management. Patients should understand the nature of their condition, the purpose and proper use of their medication, and the importance of adherence to that medication. To better understand the degree of comprehension of their condition and its treatment, a study measured the health literacy of 183 ethnically and linguistically diverse patients given warfarin for stroke prevention, mainly for AF. In most cases, the patients had been taking warfarin for several years. When questioned about the drug, however, only 9.3% of the study participants understood that the purpose of their taking warfarin was to prevent stroke. Perhaps even more shocking was the fact that more than 40% of patients surveyed did not know what a stroke was.³⁶

Patient adherence to treatment is often a barrier to achieving optimal outcomes. Issues related to adherence can be further compounded during transitions of care, and represent another challenge to achieving optimal outcomes in antithrombotic management.³⁷⁻³⁹ Although a lack of knowledge regarding the disease or importance of treatment can negatively impact adherence, other factors should be considered. According to Ms Fine, psychosocial and functional factors, including access to pharmacies and mental status, also impact adherence. Prescribing physicians should assess the risk for nonadherence,

The Downside of Infrequent Monitoring

Dr Owens summarized the faculty discussion about how the emergence of novel anticoagulant agents has impacted the thromboembolic management process as follows: “In the days of warfarin, which are still here, the nice part was you had to obtain a prothrombin time/international normalized ratio (PT/INR). This would be a convenient reason for [patients] to come back every month, which wasn’t really just to get your INR results. It was to reinforce and educate the patient about their disease state and the need to persist with the medication, and also to reassess where they were. In that sense, we had a built-in process to follow patients. Fast forward to a world where we’re transitioning to novel anticoagulants. Those reasons for return office visits have been somewhat minimized. You don’t have to get an INR. We don’t have to have the monthly contact, and patients don’t get the educational contacts that they had before. Hence, there’s a good chance they’re going to be more noncompliant, because we all know that the less time between contacts with a patient and someone who is overseeing them, the greater the possibility of noncompliance.” Ms Fine noted that a collaborative approach among different types of healthcare professionals, including care managers, can extend the physician’s impact by increasing the number of interactions with the patient—for example, by telephone, in the home via face-to-face visits, and through the use of virtual monitoring technology.

and explore resources such as care managers, who can not only identify family supports and community resources but provide health education, monitoring, and support. These interactions support patients, and can provide insights into the patient’s ability to follow through with treatment.

Coordination and Communication Among All Stakeholders

A number of key elements for successful transition from inpatient to outpatient care have been identified. Fundamentally, successful transition requires complete and accurate exchange of information between the transferring and receiving clinicians. [Table 2](#)⁴⁰ and [Table 3](#)⁴⁰ show,

respectively, key patient information that should be conveyed during transition of care, and a list of recommended elements of a discharge or course-of-treatment summary. In addition, a major part of transitional care is the process of medication reconciliation (discussed below). Care management, including arrangement for uninterrupted medications and lab monitoring of discharged patients, is important in outpatient transitional care as a means of overseeing the entire process and ensuring that each element of the transition is handled appropriately.

It is important not to miss the human element in the process. Even in the case of automated systems for medication reconciliation, competent, skilled, and thoughtful individuals must be present at every step of the process to ensure a successful transition. More importantly, interaction and communication between healthcare professionals is vital to that success, as is the interaction and communication between the patient (and caregivers) and the healthcare professionals who are responsible for their care. This, however, can often be a weak link in the transitional chain.

Looking first at communication between healthcare professionals, one of the most notable changes in recent years in hospital-based care has been an expansion in the number of hospitalists and in the breadth of their responsibilities. This development has led to numerous benefits in terms of quality of care, and may offer advantages for transitional care by virtue of the presence of a responsible party on the hospital side of the equation who can help oversee care transitions. However, there may be certain disadvantages associated with the emergence of hospitalists—for example, the displacement of community-based physicians in the care of their patients while in the hospital, and the increased complexity of transitions resulting from the addition of 1 more healthcare professional in the hand-off process.⁴¹

The Community Tracking Study sought to determine the state of communication and coordination between community-based physicians and hospitalists, and its impact on the nature of patient care. Interviews were conducted with hospitalists, heads of primary care physician (PCP) organizations, and chief executive officers and medical directors of health plans and hospitals in 12 communities. The investigators found that while there are an increasing number of practicing hospitalists, there has been a reduction in the level of communication between hospitals and community-based physicians, both PCPs and specialists. They also observed that community-based physicians, particularly PCPs, were delivering less inpatient care than before, while community-based specialists often preferred to

■ **Table 2. Essential Information That Should Accompany Every Transitioning Patient**⁴⁰

- Patient name
- Primary diagnosis for admission to sending facility
- Accurate medication list with prescription and nonprescription drugs, with doses and frequency^a
- Allergies and medication intolerances
- Vital signs
- Copies of advance directives including AND/DNR status
- Name and specific contact information for:
 - Sending facility (including phone number of facility/wing of facility and nurse name)
 - Responsible practitioner at sending and receiving sites of care
 - Responsible family member/decision maker
- Barriers to communication
 - English comprehension is poor: provide primary language spoken by the patient
 - Vision: requires glasses to appropriately see, blind, etc
 - Hearing impairment: requires hearing aid to hear spoken communication, etc
 - Cognitive issues that impair decision making; who should be contacted for decision making
 - Health literacy or cultural issues that may inhibit communication
- Reason for transfer (ie, the acute change in condition or problem precipitating the transfer) along with any acute changes from baseline associated with this transfer (eg, confusion, unable to walk, unresponsive)
- Medical devices, lines (eg, central line, dialysis site, pacemaker), or wounds
- Patient's ability to feed self, special dietary needs (eg, pureed foods, low-salt diet)
- Significant test results
- Tests with results pending, consults or procedures ordered but not yet performed
- Prognosis and goals of care

AND indicates allow natural death; DNR, do not resuscitate.

^aIn some settings, the patient's medication administration record could serve as the medication list.
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■ **Table 3. Recommended Elements of a Discharge or Course-of-Treatment Summary**⁴⁰

- Reason for course of treatment (ie, disease process)
- New diagnoses arising during course of treatment
- Surgery or other procedures performed during course of treatment
- Consultants utilized during course of treatment
- Complications encountered during course of treatment (eg, falls, iatrogenic infections, patient harm)
- Changes from preadmission baseline (eg, change in ability to communicate, cognitive issues, functional decline)
- Treatment goals and advance directives discussed with patient/family
- Anticipated treatment goals at time of transition:
 - Return to previous site of living vs stay at a level of care different from preadmission status
 - Total recovery vs partial recovery vs recovery not likely (ie, rehabilitation potential)
 - Palliative care/hospice
- Test results pending at time of transition (eg, biopsies, lab tests, radiology studies)
- Next steps planned in patient's care plan, with specifics as to why and when and which practitioner(s) need to be involved

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avoid performing procedures at hospitals when possible. The authors found general agreement between hospitalists and other personnel interviewed that the presence of hospitalists had improved inpatient care, but they may have a disruptive influence on inpatient-to-outpatient transition coordination because of the increased number of people involved in the transition.⁴¹

The Exclusion of Community-Based Physicians in Transitional Care

In response to a comment that physicians at long-term care facilities are often unfamiliar with patients' past medical histories, Dr Harrington stated, "The reality is, 10 years ago, maybe even 6 or 7 years ago, primary care doctors were still taking care of their patients who were in skilled nursing facilities, but that's not happening anymore. I don't even get asked anymore if I want to take care of them. That's just the way it is. They're taken care of by the facility attending [physician]."

The deficit in communication between hospitalists and PCPs was assessed in a literature review of studies examining that very question. The review, which included 55 observational studies, found that not only was direct communication between hospitalists and PCPs infrequent, but also that only 3% of PCPs were involved in discussions about discharge, while between 17% and 20% of PCPs reported always being notified about discharges. Discharge summaries were also a source of poor communication, with PCPs reporting that they received discharge summaries within 1 week of discharge only 15% of the time, and within 4 weeks 52% of the time. Moreover, when PCPs did receive discharge summaries, key information was frequently missing, including the main diagnosis, medication summaries, presenting symptoms, diagnostic test results, follow-up plans, patient age, and the name of the responsible hospital physician.⁴²

Medication Reconciliation

The American Pharmacists Association (APhA) and the American Society of Health-System Pharmacists (ASHP) have described medication reconciliation as "the comprehensive evaluation of a patient's medication regimen any time there is a change in therapy," also noting that "This process should include a comparison of the existing and previous medication regimens, and should

occur at every transition of care in which new medications are ordered, existing orders are rewritten or adjusted, or if the patient has added nonprescription medications to [his or her] self-care."⁴³

The need for medication reconciliation in transitional care is made clear by numerous studies demonstrating the frequency with which medication errors occur, and the points in time and location at which they occur. For example, a study of nurse-identified medication discrepancies found that 94% of 101 subjects transitioning from hospital to home experienced at least 1 medication discrepancy, with an average of nearly 3.3 medication discrepancies per patient.⁴⁴ MEDMARX, a reporting program aimed at evaluating medication reconciliation errors, found that of 2022 medication reconciliation errors that occurred during a 10-month period (September 2004-July 2005), 23% took place at admission, 67% during transition to a different level of care, and 12% at discharge.⁴⁵

Medication errors can occur during transitions of care due to disruption of drug regimens as a consequence of different facilities using different formularies, or because programs such as Medicare Part D, Medicaid, and managed care drug programs impose restrictions that require a change in a patient's drug regimen. As a result, patients may fail to receive critical drugs, with possibly serious health consequences.⁴⁶

The Heavy Lifting of Medication Reconciliation

Dr Merli made the point that medication reconciliation can be a very labor-intensive process, and having the right personnel to achieve it can be a challenge. "The workforce and structure you must have to do the follow-up phone calls is tremendous," he said. In the case of heart failure, he noted, "Our pharmacists make all the follow-up calls while the respiratory therapists provide the phone contact for pneumonia patients. There are actually companies who will provide you with the service, or you create your own call center so all this can happen."

Medication reconciliation is a surprisingly complicated process. One might think that the availability of computer-based systems would make the endeavor much simpler. However, this is not necessarily the case. The challenges posed by the currently incomplete transition to electronic medical records constitute some of the major barriers to

successful medication reconciliation. For example, at present, there exists very little standardization of data elements within medication records, thus preventing the development of any standard practice. In addition to establishing best practices in medication reconciliation, and improving communication of medication information by both patients and healthcare providers, making medication reconciliation a well-integrated, smooth process within transitional care remains an unmet goal.⁴⁷

The Limitations of Electronic Medical Records

Dr Jacobson challenged the utility of electronic records that are meant to allow for a clinician unfamiliar with a given patient to get up to speed right away. “The resident who just came on yesterday,” he said, “who has zero idea on the baseline status, functional capabilities, what that patient looked like 30 days ago or 10 days ago....An electronic medical record will never fully convey who the patient is, what they tolerate, what they don’t tolerate, what makes them anxious, and to do a fully comprehensive hand-off would end up potentially taking 2 hours per patient.”

Opportunities for Improving Transitions of Care

The Evolving Role of the Pharmacist

In a healthcare system under pressure to reduce costs while improving treatment and outcomes, the role of non-physician clinicians has been expanding over the last 2 decades. The skills of pharmacists and their capacity to assume increased responsibility for patient care have also been evolving in recent years. In the areas of antithrombotic therapy and transitional care, the role of the pharmacist has clearly been growing, although it remains to be seen how their responsibilities in the clinical setting will ultimately be defined. Nevertheless, the utility of pharmacists in improving outcomes and transitions has been shown. In the area of medication therapy management, for example, medication review by pharmacists has been shown to reduce medication errors, physician visits, emergency department (ED) visits, hospital days, and overall healthcare costs.⁴⁸

Pharmacists can also play a crucial role in transitional care, as was recently demonstrated in a pharmacist-managed deep vein thrombosis (DVT) treatment program at Jackson Memorial Hospital in Miami that was designed to facilitate

outpatient transition from the ED for patients with newly diagnosed DVT. Prior to this program, the standard procedure for bridging patients with DVT from low-molecular-weight heparin to warfarin was to admit patients from the ED to the hospital because of concern about discharging patients on high-risk medications—a procedure, it should be noted, that is very widely utilized.^{49,50} The pharmacist-managed program involved determining which patients were high risk and would require hospitalization, and then working with a multidisciplinary team to determine appropriate treatment and dosing for eligible patients. Patients were educated in the ED on self-administration of antithrombotic therapy and given a kit that included alcohol swabs, a sharps container, an instructional video, and a brochure about warfarin. The study compared length of stay for those patients not enrolled in the program with those who were, and found that the former had an average stay of 5.7 days, compared with patients in the program who were released from the ED after an average of 18.3 hours.⁴⁹

In the area of medication reconciliation and transitional care, the APhA and ASHP have stated that pharmacists should play a central role in designing and managing patient-centered medication reconciliation systems, and educating patients and healthcare professionals about their use and limitations, while also serving as patient advocates during transitions. Moreover, they state that pharmacists should work interdependently with healthcare professionals of all categories to optimize communication and use of health information technology to support transitions of care.⁴⁷

Pharmacists can play a vital role in improving patient education. Patients and caregivers should be apprised of how the medication is to be administered, possible adverse effects, and the importance of being adherent to therapy. In terms of anticoagulation therapy, education about medications should also describe to patients and caregivers the signs and symptoms of bleeding and when medical attention should be sought. Finally, follow-up is vitally important to verify that patients are being adherent to therapy, and in the larger view, to make sure that continuity of care is being achieved.⁵¹

Efforts to Improve Transitions of Care

Improved communication is essential to achieving better outcomes during transitions of care. Maintaining appropriate documentation, such as that recommended by AMDA – Dedicated to Long Term Care Medicine (Tables 2 and 3), provides subsequent care sites with information that enables smooth transfers during planned or unplanned transitions.

The Pharmacy as a Safety Net

In support of the role of the pharmacist, Dr Merli said, “In the hospital setting, there has to be a model, a system within the hospital to track [patients’] drugs during their hospitalization. For example, you might have an orthopedic resident who writes dabigatran 150 mg twice a day in a patient who has AF because he saw it on the initial H and P (history and physical) done by the medical consultant and thought it was a rate-controlling drug. In our facility, we have a pharmacy safety net. Every new anticoagulant is monitored. If the new oral [anticoagulants] come up, they’re checked by the pharmacy for appropriate indication, dose, medication interactions. If it’s not [appropriate], contact is made with the attending physician to discuss the issues. Should the attending physician not agree with the pharmacist, then the chief medical officer will intervene in the process.”

The use of standardized forms can also aid the transfer process.⁴⁰

Avoiding the impact that suboptimal transitional care has on patient outcomes and treatment costs must be a high priority. Some progress has been made in avoiding rehospitalization, a possible marker of poor transition of care, as evidenced by pilot programs and studies involving a small number of sites. This was demonstrated in a Medicare quality improvement study that evaluated the impact of care transition programs implemented at 14 sites, each of which included at least 1 hospital. The care transition programs varied from site to site, but generally involved care management. In general, care management involves identifying patients as high risk for rehospitalization, then providing in-home support following discharge. Support includes improving safety of the patient’s environment, health and medication literacy, and access to health and social resources. Sites were selected based on local priorities by each participating site (although the intervention had to satisfy evidence-based requirements from the Centers for Medicare & Medicaid Services). In addition to the 14 sites, 50 additional sites without interventions were selected to serve as matched controls. All sites involved Medicare fee-for-service beneficiaries. Data gathered in the study included rehospitalization rates prior to interventions (2006-2008) and subsequent to interventions (2009-

2010). In the 2 post intervention years studied, the rate of hospitalization in the intervention group was significantly lower than prior to intervention ($P = .01$). By contrast, little change was observed in the 50 sites that received no intervention.⁵²

Although interventions designed to improve transitions of care have demonstrated success, the challenge remains to apply these models to larger and different healthcare systems. Initiatives in the Patient Protection and Affordable Care Act to improve transitions of care and the endorsement of the National Quality Forum to include care transitions as a quality measure represent meaningful steps forward.^{5,15}

Conclusion

Patients at risk for or receiving treatment for thromboembolic disease have many transitional interactions within the healthcare system. The process of transitional care provides additional opportunities for inappropriate treatment, unintentional discontinuation of medication, inadequate hand-off of clinical responsibility, and numerous other potential pitfalls, which may result in excess costs. The barriers to achieving successful antithrombotic therapy are considerable. Clinician concerns regarding bleeding risk and incomplete knowledge about the proper use of anticoagulants have resulted in undertreatment of patients who require anticoagulant therapy. At the same time, lack of patient education regarding disease state and the importance of adherence mean that even those who receive a prescription may not achieve therapeutic success. The importance of transitional care has been recognized, and efforts are under way to improve the transitional care process, with special attention being given to medication reconciliation, improving communication—both among clinicians themselves and between clinicians and patients—and developing collaborative teams to ensure smooth transitions. Pilot programs to improve transitions of care have been successful; the challenge is applying these principles to larger and more complex care settings. Successful transitions of care can have a marked impact on optimizing outcomes, and all stakeholders should recognize their contributions and responsibilities in the care continuum, particularly when transitioning patients receiving antithrombotic therapy.

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