

Falling Through the Cracks: Challenges and Opportunities for Improving Transitional Care for Persons with Continuous Complex Care Needs

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Persons with continuous complex care needs frequently require care in multiple settings. During transitions between settings, this population is particularly vulnerable to experiencing poor care quality and problems of care fragmentation. Despite how common these transitions have become, the challenges of improving care transitions have received little attention from policy makers, clinicians, and quality improvement entities. This article begins with a definition of transitional care and then discusses the nature of the problem, its prevalence, manifestations of poorly executed transitions, and potentially remediable barriers. Necessary elements for effective transitions are then presented, followed by promising new directions for quality improvement at the level of the delivery system, information technology, and national health policy. The article concludes with a proposed research agenda designed to advance the science of high-quality transitional care. *J Am Geriatr Soc* 51:549–555, 2003.

Key words: systems of care; care transitions; care integration; medical errors

DEFINITION

According to a 2003 position statement issued by the American Geriatrics Society (see under “Special Article” in this issue), transitional care is defined 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 Representative locations include (but are not limited to) hospitals, subacute and postacute nursing facilities, patients’

homes, primary and specialty care offices, and long-term care facilities. Transitional care is based on a comprehensive plan of care and the availability of healthcare practitioners who are well trained in the care of complex acute and chronic illness and have current information about the patient’s goals, preferences, and clinical status. It includes logistical arrangements, education of the patient and family, and coordination among the health professionals involved in the transition. Transitional care, which encompasses the sending and the receiving aspects of the transfer, is essential for persons with complex care needs.¹

NATURE OF THE PROBLEM

Persons whose conditions necessitate complex continuous management frequently require care from different health professionals in multiple settings. For example, a person who experiences a congestive heart failure exacerbation may receive care over the phone from a case manager working for a disease management program, from the primary care team in the ambulatory setting, from a hospitalist and nurse team during an inpatient admission, and finally from a visiting nurse in the home. A frail older person who sustains a hip fracture may require treatment from a diverse range of care professionals in a variety of settings, including an orthopedic surgeon, a hospitalist, hospital nurses, and a hospital physical therapist in an acute hospital; a skilled nursing facility (SNF) physician (a “SNFist”), SNF nurses, and a SNF physical therapist in a SNF; home care nurses, home care physical therapists, and home care occupational therapists for care delivered in the home; and a primary care physician and nurse in the primary care setting. In all of these cases, a successful “handoff” of care between professionals in each setting is critical to achieving optimal outcomes for this patient population.^{2–4}

Although patients with complex acute and chronic care needs experience heightened vulnerability during these transitions, systems of care often fail to ensure that the essential elements of the patient’s care plan that were developed in one setting are communicated to the next team of clinicians, the necessary steps (e.g., preparation for the goals of care delivered in the next setting, arrangements for follow-up appointments and laboratory testing, and reviewing the current medication regimen) before and

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after a patient's transfer are properly and fully executed, and the requisite information about the care the patient received from the sending care team is communicated to the receiving care team. Instead, practice settings often operate as "silos," without knowledge of the problems addressed, services provided, medications prescribed, or preferences expressed in the previous setting.^{2,5} Although some practitioners continue to follow their patients across different healthcare settings, in the majority of care transitions, the patient and caregiver are the only common thread between sites of care and by default have been given the added responsibility of facilitating their care transitions, often without the necessary skills or confidence to do so.

Focus groups and surveys illustrate the challenges that patients with complex care needs and their caregivers face during these transitions. In a series of six focus groups with caregivers in New York, participants consistently expressed a lack of preparation in terms of what to expect and how to respond to the changing needs of loved ones moving between care settings.⁶ Likewise, findings from six focus groups with patients recently discharged from the hospital to a SNF or home care agency and their caregivers in Denver revealed deficiencies in preparing caregivers and patients for the transition, transferring information across settings, supporting the self-management of chronic conditions, and encouraging patients and caregivers to express their preferences.⁷ Similarly, satisfaction surveys conducted after hospital discharge have repeatedly identified discharge planning and transitional care as particularly problematic.⁸⁻¹¹

Despite these shortcomings and the frequency with which patient transfers now occur, transitional care has received little attention in the academic, health policy, and clinical practice arenas for a variety of reasons. First, financial incentives for improving care transitions across practice settings are nonexistent or, in some situations, run contrary to the needs of the patient. In addition, Medicare reimbursement is directed to the particular setting in which the care is delivered as opposed to the individual episode of care. Furthermore, quality assurance efforts continue to focus on a specific setting, further discouraging professional accountability for patients who are in transition.¹² Finally, there are few rigorously developed quality indicators that assess system or clinician performance during care transitions.^{13,14}

PREVALENCE

The prevalence of care transitions among the older population in the United States can be derived from a variety of national estimates. In 2000, the population of adults aged 65 and older averaged more than 400 ambulatory visits, 300 visits to the emergency department, 200 hospital admissions, 46 SNF admissions, and 106 home care admissions per 1,000 persons.^{14,15} A 2001 Harris poll commissioned by the Robert Wood Johnson Foundation found that, on average, older persons with one or more chronic conditions see eight different physicians over the course of 1 year.¹⁶ Likewise, 37% of the 5.6 million Medicare beneficiaries receiving rehabilitative services in 1996 had more than one encounter.¹⁷ With regard to receipt of posthospital services, 23% of hospital patients aged 65 and older are discharged to another institution, and 11.6% are dis-

charged with home care.¹⁸ Furthermore, studies of transfers from SNFs back to acute care hospitals estimate that 19% of patients are transferred back within 30 days¹⁹ and as many as 42% within 24 months.²⁰

Although these studies provide valuable information on care transitions from a setting-specific perspective, few examine the number of care transitions patients experience over an entire episode of care, which can be significant. For instance, in a study of 920 community-dwelling older patients who were hospitalized and discharged to an institutional SNF or rehabilitation facility for restorative therapy, nearly half underwent an additional four or more institutional care transitions (to an acute hospital, SNF, or rehabilitation facility) over a 12-month period. These rates were not significantly different in Medicare beneficiaries enrolled in managed care versus those in fee-for-service payment.²¹

MANIFESTATIONS OF POORLY EXECUTED TRANSITIONS

The multitude of adverse effects that can be attributed to poorly executed care transitions is often underappreciated. The manifestations of such transfers can be wide ranging, affecting patients and their informal caregivers. There are multiple points during a transition at which care processes can break down. These include the preparation of the patient and caregiver, the communication of vital elements of the care plan, the reconciliation of the medication regimen that was prescribed before the initial transition with the current regimen, the transportation of the patient, the completion of follow-up care with a practitioner, diagnostic imaging or laboratory testing, and the availability of advance care directives across settings.^{2,4,6-8,22-24}

Medication errors, in particular, are a significant hazard.^{25,26} A 2001 Harris poll commissioned by the Robert Wood Johnson Foundation-sponsored Partnership for Solutions based at Johns Hopkins University revealed that their pharmacist had told 16 million adult Americans with chronic illness that the medications that one or more physicians had prescribed had potentially harmful interactions.¹⁶ Although it is now common for an individual patient to receive prescriptions from multiple physicians, no one clinician is in a position to adequately monitor the entire regimen, much less intervene to reduce discrepancies, duplications, or errors. In addition, when patients are discharged from the hospital, they may be uncertain about whether they should resume their previous medication regimen or only take the medications listed on their discharge instructions.²⁶⁻²⁹ Thus, although much of the recent national attention on medication errors has been site specific (e.g., administering the wrong intravenous antibiotics in the hospital), the lack of coordination between prescribers across settings may pose an even more formidable threat.

Other problems occur when the sending clinician fails to *communicate* critical elements of the care plan to the receiving clinician or when patients are not adequately prepared for care in the next setting (including being informed about their care plan, what to expect in the next setting, playing an active role in determining their care plan, and expressing their care preferences).^{4,5} In these instances, neither the receiving clinician or the patient may understand the primary purpose of the transfer, particularly when the patient's treatment preferences have not

been incorporated into the care plan or when the receiving facility's assessment of the patient's needs is incomplete. Furthermore, patients may leave the sending or receiving site without being made aware of warning symptoms that could indicate that their condition is worsening or whom to contact if they have questions. Poor preparation can contribute to anxiety and dissatisfaction and places a greater burden on the patient and care provider.^{6,9} In addition, the lack of appropriate and timely follow-up care can quickly undermine the benefits achieved in the previous setting, resulting in further functional dependency and permanent institutionalization. Ultimately, poorly executed care transitions can lead to greater use of hospital, emergency, postacute, and ambulatory services.^{2,30,31}

Indeed, not all transitions are mandatory. Some transitions are elective, or at least discretionary. Returning to the two cases discussed earlier, a patient managed for an exacerbation of congestive heart failure may be left with acute deconditioning and thus be unable to return home at the time volume homeostasis has been restored. Often an additional 1 or 2 days of acute rehabilitation in the hospital is all that is needed to adequately restore function sufficient for community living, thereby obviating the need for a transition to a SNF. Similarly, depending on the level of premorbid function and available social support, a patient suffering an acute hip fracture may be discharged directly to home and not require an additional transition to a rehabilitation unit or SNF. Furthermore, even well executed transitions are not without risk for adverse outcomes. Thus, for each decision to transfer, the potential for harm from imposing an additional transition needs to be weighed against the potential for benefit. The appropriateness of the match between the proposed care setting and the patient's medical, nursing, and functional needs should determine the decision to transfer.

BARRIERS TO EFFECTIVE CARE TRANSITIONS

Table 1 summarizes the components of effective care transitions. In general, these involve communication between the respective sending and receiving care teams regarding a common plan of care, the patient's individual goals and

preferences, and a summary of the care provided in sending care setting; preparation of the patient and caregiver for what to expect at the next site of care; a reconciliation of the medication regimen prescribed before the initial transfer with the current regimen; a follow-up plan for how outstanding tests and follow-up appointments will be completed; and an explicit discussion with the patient about warning symptoms or signs to monitor that might indicate that a particular condition has worsened and whom to contact if this occurs.

Barriers to effective care transitions can be categorized at three levels: the delivery system, the clinician, and the patient.

The Delivery System Level

The organization of the current healthcare delivery system into distinct, independent institutions is a major impediment to the successful management of transitional care.² With care circumscribed by setting, little attention is devoted to understanding the care plan formulated before admission to a new facility or ensuring its execution after discharge.⁵ The lack of formal relationships between care settings also represents a formidable barrier to cross-site communication and collaboration.² Additionally, problems stem from the lack of financial incentives promoting transitional care and accountability in fee-for-service Medicare.¹² Although such incentives exist in Medicare managed care, most plans do not fully address care integration.³² In addition, the different financing and contractual relationships that facilities have with various pharmaceutical companies impede effective transitions. As patients are transferred across settings, each facility has incentives to prescribe or substitute medications according to its own medication formulary. This constant changing of medications creates confusion for the patient, caregiver, and receiving clinicians.²⁷⁻²⁹ In addition, neither fee-for-service nor managed care Medicare has implemented quality or performance indicators designed to assess the effectiveness of transitional care.

Finally, the lack of information systems designed to facilitate the timely transfer of essential information

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In general, effective care transitions include:

- Communication between the sending and receiving clinicians regarding:
 - A common plan of care
 - A summary of care provided by the sending institution
 - The patient's goals and preferences (including advance directives)
 - An updated list of problems, baseline physical and cognitive functional status, medications, and allergies
 - Contact information for the patient's caregiver(s) and primary care practitioner
- Preparation of the patient and caregiver for what to expect at the next site of care
- Reconciliation of the patient's medication prescribed before the initial transfer with the current regimen
- A follow-up plan for how outstanding tests and follow-up appointments will be completed
- An explicit discussion with the patient and caregiver regarding warning symptoms or signs to monitor that may indicate that the condition has worsened and the name and phone number of who to contact if this occurs

across settings is a major barrier to effective care transitions. The Health Insurance Portability and Accountability Act (HIPAA), recent federal legislation enacted to protect patient confidentiality is likely to exacerbate this situation.³³ Although this legislation contains provisions for the sharing of information across providers on a “need to know basis,” it has created additional logistical impediments that could negatively affect older patients receiving care in multiple settings.

The Clinician Level

Changes in the way that health care is delivered have created impediments to clinicians’ ability to provide effective transitional care. Although it was common in the past for primary care clinicians to manage the treatment of older patients across multiple settings, this has become increasingly uncommon. The growing reliance on designated institution-based physicians (i.e., “hospitalists” and “SNFists”) and productivity pressures have made it difficult for primary care physicians to follow their patients when they require hospitalization or short-term rehabilitation.^{34,35} In fact, it is becoming increasingly uncommon for any one clinician to provide continuous care to a patient transferring from one care setting to the next.

In addition, nursing staff shortages have forced an increasing number of acute hospitals to divert patients to other facilities where a completely new set of clinicians, who often do not have timely access to the patients’ prior medical records, manages them. SNF staff are also overwhelmed and do not have the time or initiative to request necessary information from the hospital when transfer documents are incomplete. Although competency in cross-site collaboration is critical to the management of patients with complex acute and chronic illnesses, few clinicians have any formal training in this area. Consequently, in the majority of transitions, clinicians do not verbally communicate patient information to one another across care settings.

Changes in the way that care managers and social workers operate exacerbate these problems. Although these professionals once provided longitudinal care oversight irrespective of location, they now are predominantly assigned to specific care settings. In addition, older patients with multiple problems may be assigned to more than one care manager, including disease-specific and general care managers. Without any formal mechanisms for ongoing communication and coordination with the primary care team, these different care managers may actually contribute to, rather than alleviate, care fragmentation.

The Patient Level

Finally, there are patient-level barriers that hinder effective care transitions. First, there is little advocacy or outcry from patients for improving transitional care until they or a family member is confronted with the problem firsthand. Second, older patients and their caregivers often are not well prepared or equipped to optimize the care they will receive in the next setting.^{7–10} They may have unrealistic expectations about the content or duration of the next phase of care and may not feel empowered to express their preferences or provide input for their care plan.⁶ Similarly, patients may not feel comfortable expressing their concern that the primary factor that led to their disease exacerba-

tion was not adequately addressed (e.g., a fall that led to a hip fracture; an inability to afford chronic disease medications, resulting in noncompliance and a subsequent exacerbation of congestive heart failure).

NECESSARY ELEMENTS FOR EFFECTIVE CARE TRANSITIONS

To achieve effective care transitions, certain elements are necessary for patients and healthcare professionals (Table 1). First, patients with complex care needs and their caregivers must be informed of what to expect at the next care site and be given the opportunity to put their values and preferences into the care plan. Specifically, they need clear advice on how to manage their conditions, reconcile the medication regimen prescribed before initial transfer with the current regimen, recognize warning symptoms that may indicate that their condition has worsened, contact a health professional familiar with their care plan, ensure that follow-up appointments and tests are completed, seek immediate care in the setting to which they have moved, and arrange for transportation to the next care setting.^{7–10} Receiving clinicians must evaluate patients in transition in a timely manner to identify or verify areas of concern and ensure implementation of the care plan.

Healthcare professionals require a uniform plan of care to facilitate communication and continuity across settings. They need an accessible medical record that contains the patient’s current problem list, medication regimen, allergies, advance directives, baseline physical and cognitive function, and contact information for all professionals and caregivers. Because caregivers often play an integral role in the execution of the care plan, clinicians need their candid input regarding the feasibility of the proposed plan. Finally, given how common transitions across settings are for persons with complex acute and chronic illnesses, clinicians need formal training in transitional care as a core competency for caring for this population.

The content of this training may include skills to enhance cross-site communication and collaboration toward the common goal of executing a complex care plan, strategies for eliciting patients’ and caregivers’ preferences for incorporation into a plan of care, and the articulation of the essential elements that need to be included in a transfer or discharge summary.

Promising Directions and Opportunities for Improving the Quality of Transitional Care

The challenge of improving transitional care is complex and will likely require a multifactorial approach that incorporates changes in the healthcare delivery system, technology to support the transfer of information, and new healthcare policies.

Delivery System Change

A number of programs have been developed that aim to improve the care that older adults receive across healthcare settings. One model relies on the expertise of advanced practice nurses to identify hospitalized older adults who are at risk for readmission and follow their care into the home after discharge. The nurses are encouraged to assume responsibility for the comprehensive care of the patient in conjunction with the primary care physician for 4

weeks postdischarge. This model has been tested in patients with congestive heart failure and older adults with complex care needs and has been shown to be effective at decreasing the number of readmissions, reducing the length of subsequent hospitalizations, and cutting costs.^{36–38}

This type of model, whereby an accountable clinician “bridges” the transition with the patient and caregiver, offers a number of benefits, including the facilitation of interdisciplinary collaboration between the sending and receiving care teams; the provision of a single contact person who can address questions or concerns of patients and caregivers before, during, and immediately after a transfer; and the reconciliation of potential medication errors or discrepancies before they manifest. To accomplish these different tasks, the professional involved should be skilled at identifying changes in health status, assessing and managing multiple complex conditions, managing medications, and collaborating with members of interdisciplinary teams and caregivers.

A variation on this type of model uses geriatric nurse practitioners to enhance patient and caregiver participation in the management of care transitions and improve their communication with the multiple health professionals involved in the care plan. This intervention is currently being tested in randomized trials of managed care and fee-for-service patients.³⁹ Another alternative to this model involves the provision of a professional from the facility to which the patient is being transferred (e.g., a SNF nurse, a home health agency nurse) who would initiate the transition before the patient has left the hospital. Potentially, these predischARGE visits would facilitate interprofessional communication and the transfer of information and reduce the anxiety and frustration of patients and caregivers.⁴⁰

Extended care pathways offer another method for improving the effectiveness of transitional care. These pathways provide protocols for each phase of a patient's care, including the roles that interdisciplinary clinicians should play. Often, preparation for a patient's transition from one care setting to the next is an explicit element of such protocols. The use of care pathways has become increasingly common, and there is growing evidence that their use improves outcomes of care for patients with hip fracture.^{41–43} Although it is inherently simpler to standardize care for a specific condition, such as a hip fracture, and there are a limited number of conditions whose treatment can be organized into this type of protocol, the basic elements of preparing a patient to receive care at the next setting could potentially be applied to most conditions.

Transitional care also could be improved by expanding existing programs that integrate acute and long-term care. One example is the Program for All-inclusive Care of the Elderly (PACE), which integrates primary, acute, and long-term care for frail older adults at adult day health centers.⁴⁴ In most PACE programs, health professionals follow their high-risk patients as they transfer across institutional settings. This includes visiting the patient in the hospital and participating in discharge planning.

Finally, it is important to note that, for all of the proposed changes to the healthcare delivery system outlined in this section, a strategy is needed to identify those patients at greatest risk for complications and poor outcomes as they transfer across settings. The goal of risk identifica-

tion is to ensure that those patients who will most likely benefit from these more-intense services are identified, thereby enhancing the cost effectiveness of these interventions.

The Role of Technology in Information Transfer

The implementation of technology is central to facilitating the transfer of information across settings, particularly because it has been shown that improved communication between physicians can result in better patient outcomes.^{4,45} Specifically, transitional care requires a universal care-planning tool that incorporates the needs and preferences of patients and their caregivers, a uniform screening and assessment instrument, and two-way communication. At a minimum, the care-planning tool should include a current problem list, medications, allergies, baseline physical and cognitive function, advance directives, and contact information for the primary care team and caregivers. Institutions with transfer agreements could also add additional components. In this manner, the sending and receiving clinicians could expect to have reliable information about the care the patient has already received and be aware of the anticipated next steps.

The San Francisco Department of Aging and Adult Services (DAAS) has implemented an information technology system that focuses on interprovider communication and support for caregivers as a means to improve geriatric care across settings. The Consumer Assessment, Referral and Enrollment (CARE) tool is an Internet-based care-management program that enables providers and agencies to exchange information and coordinate care management. CARE can be accessed on-line, provides a single point of entry for all DAAS services, and has become the standard assessment for patients in all DAAS programs. Once a patient has been entered into CARE, the tool can automate referrals to other relevant services within the aging network and allow programs serving the same individual to share assessments, care plans, and progress notes. Other on-line services that DAAS has created include a Website, www.SFGetCare.com, which places a full range of healthcare information and resources at the fingertips of older adults, their care providers, care managers, and healthcare professionals. For example, some of the services to which users are referred include adult day healthcare, assisted living, home health services, legal services, and food banks.⁴⁶

Information transfer also could be accomplished through the use of a paper medical record that is uniformly accepted by different clinicians or an electronic medical record that is properly safeguarded to ensure patient confidentiality. Both systems offer certain advantages and disadvantages. The implementation of a paper record with a universal format is much less costly to implement than an electronic record, but it is more difficult to update as patients transfer across settings. In addition, there is the challenge of getting diverse providers (e.g., hospitals, SNFs, home health agencies) with different data collection needs (e.g., Minimum Data Set, Older Adults Service and Information System) to agree to use a single common form. However, although it is tempting to assume that an electronic medical record will solve many of the information problems inherent in transitional care, it too offers only a partial answer. First, transitional care is more complex than

the simple exchange of information. Moreover, although it is important for clinicians to have ready access to a patient's medical record, they also must take the initiative to read the information contained in it and act accordingly.

Because of these limitations, there is a growing interest in exploring the feasibility of entrusting patients with up-to-date information that they could convey from one provider to the next. Conceptually, the patient and caregiver would function as a conduit through which clinicians in different settings would communicate information.³⁹ One possible modality includes the use of credit card-sized "smart cards" that patients would take with them to each encounter with a provider. These cards would contain a computer microchip capable of processing information and storing numerous pages of a patient's vital health and demographic information.⁴⁷ Another technology includes password-protected, Web-based medical records that would make information available on a "need-to-know" basis. A similar approach involves equipping patients with their own hand-held personal data assistants to convey information across settings. With all of these examples, information could be modified or updated at the point of service, and medication changes could be communicated to all clinicians via a shared electronic record. Because data confidentiality and security are paramount, techniques such as passwords and the encryption of data are needed to protect patient privacy.

New Health Care Policy

To increase the accountability of health professionals involved in transitional care, it is necessary to modify existing healthcare policies, particularly those governing reimbursement and performance evaluation. Because Medicare fee-for-service currently lacks financial incentives that address transitional care and there is little professional accountability for poorly executed transitions, new strategies are needed that call attention to the quality of care transitions. At the very least, financial incentives should be established that encourage clinicians in different settings to implement and contribute to a uniform, comprehensive plan of care. In addition, documentation of cross-site communication (written or verbal) between sending and receiving clinicians should be a necessary requirement for physician reimbursement.

Under the current system, neither of these activities is explicitly reimbursed, nor is the skilled professional who bridges the transition with the patient and caregiver (as described above under Delivery System Change). Medicare policies should be changed so that these essential activities are reimbursed and transitional care becomes a distinct benefit. Alternatively, transitional care could be included as a component of a Medicare care coordination benefit. (At the time of this writing Congress was considering a bill for such a benefit.) If enacted, either of these forms of reimbursement would require a formal targeting strategy to determine those Medicare beneficiaries that would be most likely to benefit from these services. In addition, the Centers for Medicare and Medicaid Services (CMS) would need to develop guidelines on how to implement, document, code, and audit these new benefits. Since Medicare + Choice managed care plans have greater flexibility and incentives to integrate care across care settings, similar

services could also be implemented through their benefit structure.

Finally, performance measures are needed to assess the quality of transitional care, facilitate comparisons between healthcare settings and healthcare systems, and ensure professional accountability for patients undergoing care transitions. Performance on such measures could be linked to reimbursement. Not only are measures needed to assess whether certain care processes occurred, but they also should focus on outcomes, such as recidivism (readmission to a hospital or SNF), medication errors, patient satisfaction, and the reintegration of patients into their prior functional level or living environment. Although some of the existing performance instruments include a few items related to care transitions,^{13,48,49} there are no validated and tested instruments that explicitly aim to measure the quality of transitional care. To ensure accountability for quality improvement, new performance measures need to be designed to measure the effectiveness of transitional care across different delivery systems and in fee-for-service and Medicare + Choice payment structures.⁷

DEFINING THE RESEARCH AGENDA

The paucity of high-quality research examining transitional care is disproportionate to the magnitude with which these care handoffs occur each day and the importance of this topic for ensuring high-quality care of patients with complex care needs. If the quality of transitional care is to improve, research is needed to advance our understanding in multiple areas.

First, studies are needed to elucidate how to best encourage the patient and caregiver to function as integral members of the different interdisciplinary care teams encountered across sites of care. Second, research is needed to demonstrate how to foster collaboration between healthcare institutions and agencies to improve transitional care at the system level. Third, there is a need to identify those patients who are likely to experience poor transition-related outcomes and who may benefit from targeted interventions. Studies attempting to empirically derive these risk factors are currently in progress. These risk factors will likely incorporate multiple dimensions of care and thereby highlight the importance of interdisciplinary assessment in transitional care. Fourth, performance indicators and quality-improvement technologies that specifically address the quality of transitional care need to be developed and tested. Finally, information technology systems that facilitate interinstitutional and interpractitioner communication and collaboration need to be refined and disseminated.

The CMS recently initiated a Coordinated Care Demonstration that aims to test the cost-effectiveness of case management and disease management for Medicare fee-for-service beneficiaries. Although none of the 15 funded projects explicitly examines transitional care as a primary focus, the lessons learned will likely have some application to this field.^{50,51}

CONCLUSION

Every day, patients with continuous, complex care needs make hundreds of thousands of transitions across different sites of care. The many adverse effects of poorly executed

transitions on patients and their informal caregivers are potentially preventable with the implementation of evidence-based and clinically sound interventions. In addition, changes in healthcare reimbursement and the use of performance measurements are necessary to improve the quality of transitional care.

REFERENCES

- Coleman EA, Boulton C. The American Geriatrics Society Health Care Systems Committee. Improving the quality of transitional care for persons with complex care needs. *J Am Geriatr Soc* 2003;51:556–557.
- Institute of Medicine. Crossing the Quality Chasm: a New Health System of the 21st Century. Washington, DC: National Academy Press, 2001.
- Institute of Medicine. To Err Is Human: Building a Safer Health System. Washington, DC: National Academy Press, 2000.
- Gittel JH, Fairfield KM, Bierbaum B et al. Impact of relational coordination on quality of care, postoperative pain and functioning, and length of stay. *Med Care* 2000;38:807–819.
- Anderson M, Helms L. Communication between continuing care organizations. *Res Nurs Health* 1995;18:49–57.
- Levine C. Rough Crossings: Family Caregivers Odysseys Through the Healthcare System. New York: United Hospital Fund of New York, 1998.
- Coleman E, Smith JD, Frank J et al. Development and testing of a measure designed to assess the quality of care transitions [On-line]. *Int J Integrat Care* 2002;2. Available at www.ijic.org/index2.html Accessed December 11, 2002.
- Weaver FM, Perloff L, Waters T. Patients' and caregivers' transition from hospital to home. Needs and recommendations. *Home Health Care Serv Q* 1998;17:27–48.
- vom Eigen KA, Walker JD, Edgman-Levitan S et al. Carepartner experiences with hospital care. *Med Care* 1999;37:33–38.
- Gerteis M, Edgman-Levitan S, Daley J et al, eds. Through the Patient's Eyes. Understanding and Promoting Patient-Centered Care. San Francisco: Jossey-Bass, 1993.
- Hendriks A, Vrielink M, Smets E et al. Improving the assessment of (in)patients' satisfaction with hospital care. *Med Care* 2001;39:270–283.
- Coleman E, Besdine R. Integrating quality assurance across sites of geriatric care. In: Calkins E, Wagner E, Boulton C et al., eds. *New Ways to Care for Older People*. New York: Springer, 1998, pp. 185–195.
- National Chronic Care Consortium. Self-assessment for system integration tool. Bloomington, Minnesota: SASI, 1998.
- Gabrel CS, Jones A. The National Nursing Home Survey: 1997 Summary. *Vital Health Stat* 13 2000;147:1–121.
- Burt CW, McCaig LF. Trends in hospital emergency department utilization: United States 1992–99. *Vital Health Stat* 13 2002;150:1–34.
- Partnership for Solutions. New poll reveals Americans' concerns about living with chronic conditions and desire for elected officials to take action to improve care. [On-line] Available at <http://partnershipforsolutions.org/media/press-releasesDetailcfm?ID=1> Accessed June 17, 2002.
- Portner G, Muse D, Nystrom S. An Analysis of Rehabilitation Services 'Flow' Patterns and Payments by Provider Setting for Medicare Beneficiaries. Washington, DC: Muse and Associates, 1996.
- Agency for Health Care Quality Research HCUPnet. Outcomes by patient and hospital characteristics for all discharges 1999 [On-line]. Available at <http://hcup.ahrq.gov/HCUPnet.asp> Accessed December 30, 2002.
- Kramer A, Eilertsen T, Lin M et al. Effects of nurse staffing on hospital transfer quality measures for new admissions. In: *Health Care Financing Administration*, ed. Appropriateness of Minimum Nurse Staffing Ratios for Nursing Homes. Baltimore, MD: Health Care Financing Administration, 2000, pp. 9.1–9.22.
- Barker WH, Zimmer JG, Hall WJ et al. Rates, patterns, causes, and costs of hospitalization of nursing home residents: A population-based study. *Am J Public Health* 1994;84:1615–1620.
- Ma E, Coleman E, Lin M et al. An analysis of post-hospital care transitions in older patients [Abstract]. *J Am Geriatr Soc* 2002;49(4 Suppl.):S35.
- Jones JS, Dwyer PR, White LJ et al. Patient transfer from nursing home to emergency department. Outcomes and policy implications. *Acad Emerg Med* 2002;4:908–915.
- Ghush HF, Teasdale TA, Jordan D. Continuity of do-not-resuscitate orders between hospital and nursing home settings. *J Am Geriatr Soc* 2002;44:465–469.
- Morrison RS, Olson E, Mertz KR et al. The inaccessibility of advance directives on transfer from ambulatory to acute care settings. *JAMA* 1995;274:478–482.
- Anonymous. Medical Errors. The Scope of the Problem. Rockville, MD: Agency for Health Care Quality Research, 2000.
- Beers M, Sliwowski J, Brooks J. Compliance with medication orders among the elderly after hospital discharge. *Hosp Formul* 1992;27:720–724.
- Williams S, Moore C, Wisnevesky J et al. Assessing medical errors related to the continuity of care from an inpatient to an outpatient setting [Abstract]. *J Gen Intern Med* 2002;17(Suppl. 1):218.
- Kravitz R, Reuben D, Davis JW et al. Geriatric home assessment after hospital discharge. *J Am Geriatr Soc* 1994;42:1229–1234.
- Meredith S, Feldman PH, Frey D et al. Possible medication errors in home healthcare patients. *J Am Geriatr Soc* 2002;49:719–724.
- Murtaugh CM, Litke A. Transitions through postacute and long-term care settings: Patterns of use and outcomes for a national cohort of elders. *Med Care* 2002;40:227–236.
- Clarfield A, Bergman H, Kane R. Fragmentation of care for frail older people—an international problem. Experience from three countries: Israel, Canada, and the United States. *J Am Geriatr Soc* 2001;49:1714–1721.
- Wagner E. The promise and performance of HMOs in improving outcomes in older adults. *J Am Geriatr Soc* 1996;44:1251–1257.
- Health Care Financing Administration. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) Page [On-line]. Available at <http://cms.hhs.gov/hipaa/hipaa2/default.asp> Accessed December 30, 2002.
- Wachter RM, Goldman L. The hospitalist movement 5 years later. *JAMA* 2002;287:487–494.
- Katz TF, Walke LM, Jacobs LG. A geriatric hospitalist program for nursing home residents. *Ann Long Term Care* 2000;8:51–56.
- Naylor M, Broton D, Campbell R et al. Comprehensive discharge planning and home follow-up of hospitalized elders: A randomized clinical trial. *JAMA* 1999;281:613–620.
- Rich M, Beckham V, Wittenberg C et al. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med* 1995;333:1190–1195.
- Stewart S, Pearson S, Horowitz J. Effects of a home-based intervention among patients with congestive heart failure discharged from acute hospital care. *Arch Intern Med* 2000;158:1067–1072.
- Coleman E, Smith JD, Frank J et al. An interdisciplinary patient-centered approach to improving transitions across sites of geriatric care [Abstract]. *J Am Geriatr Soc* 2002;50(4 Suppl.):S128.
- Hollander M, Prince MJ. Analysis of Interfaces Along the Continuum of Care. Victoria, British Columbia: Hollander Analytic Services Inc., 2002.
- Zuckerman J, Sakales S, Fabian D et al. Hip fractures in geriatric patients. Results of an interdisciplinary hospital care program. *Clin Orthop* 1992;274:213–225.
- Ogilvie-Harris D, Botsford D, Hawker R. Elderly patients with hip fractures. Improved outcome with the use of care maps with high-quality medical and nursing protocols. *J Orthop Trauma* 1993;7:428–437.
- Ethans K, MacKnight C. Hip fracture in the elderly: An interdisciplinary team approach to rehabilitation. *Postgrad Med* 1998;103:157–170.
- Eng C, Pedulla J, Eleazer G. Program of All-inclusive Care for the Elderly (PACE): An innovative model of integrative geriatric care and financing. *J Am Geriatr Soc* 1997;45:223–232.
- Katon W, Von Korff M, Lin E et al. Collaborative management to achieve treatment guidelines. Impact on depression in primary care. *JAMA* 1995;273:1026–1031.
- Senior Care Manager. Web-based senior care management program takes flight in California. *Natl Health Information* 2001;4:187–188.
- University of Pittsburgh Medical Center. 2002 UPMC health system launches smart card project, allowing patients to carry own medical information in their wallets [On-line]. Available at <http://upmc.edu/NewsBureau/tx/smartcard.htm> Accessed December 30, 2002.
- Joint Commission on Accreditation of Healthcare Organizations. Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations, 2002.
- Wenger NS, Young R. Quality indicators for continuity and coordination of care in vulnerable elders [On-line]. *Ann Intern Med*. Available at www.acponline.org/sci-policy/acove Accessed December 30, 2002.
- Health Care Financing Administration. Medicare coordinated care [On-line]. Available at <http://cms.hhs.gov/healthplans/research/coorcare.asp> Accessed December 30, 2002.
- Chen A, Brown R, Archibald N et al. Best Practices in Coordinated Care. Princeton, NJ: Mathematical Policy Research Inc., 2000.