Transitional Care: A Critical Dimension of the Home Healthcare Quality Agenda

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Abstract: Focusing on the critical transitions of patients and their caregivers across healthcare settings and among providers is a promising approach to enhancing care coordination and improving quality. This article describes the research base for the transitional care of older adults and offers recommendations to advance the science, translate best practices into home healthcare settings, and improve the transitions of high-risk older adults to and from home healthcare. Home healthcare is a component of the healthcare industry uniquely positioned to improve transitional care and outcomes for the growing population of older adults with continuous complex needs.

Key Words
best practices
home healthcare
transitions

Recent efforts to master the art of seamless care have focused on care coordination and continuity as key explanatory variables in assessing the success of the U.S. healthcare system. A recent Institute of Medicine (IOM) report identified care coordination as one of 20 national priorities for action (IOM, 2003). The IOM defined these priorities as the top quality issues in healthcare affecting a large segment of the U.S. population, with the widest gap between evidence-based best practice and current care (IOM). Focusing on the critical transitions of high-risk patients and their caregivers between major settings within the healthcare system is a promising approach to enhancing care coordination and improving quality.

More than any other segment of healthcare services, home healthcare practitioners are uniquely poised to address the challenges and capitalize on the opportunities to ensure that these patients and their caregivers do not fall through the cracks. Home healthcare is the component of the healthcare industry best positioned to bridge gaps in care between hospitals and home, especially for high-risk groups such as older adults coping with multiple health problems. This article describes the research base for the transitional care of older adults, examines factors contributing to the chasm between research-based best practices and current care, and explores strategies to incorporate proven interventions into home healthcare practices. Recommendations are offered to both advance the science in transitional care and translate evidence-based best practices into home healthcare settings.

Background

Transitional care, a term that encompasses a broad range of services and environments designed to promote the safe and timely transfer of patients from levels of care (e.g., acute to subacute) or across settings (e.g., hospital to home), has emerged to bridge the gap between and among a diverse range of providers, services, and settings (Coleman & Boult, 2003; Naylor, 2003). High-quality transitional care is particularly important for vulnerable groups of patients coping with complex chronic conditions because they typically are cared for by multiple providers and move frequently between and among healthcare settings (Agency for Healthcare Research and Quality, 2002; Burt & McCaig, 2002; Gabrel & Jones, 2000; Partnerships for Solutions, 2002).

Research findings have helped to identify the factors associated with poorly executed transitions. Incomplete communication among providers and across healthcare agencies, inadequate patient and caregiver education and involvement in decision making, limited continuity of care, and decreased access to essential services are among the major issues contributing to poor quality and cost outcomes. Language barriers, literacy issues, and cultural differences further exacerbate the problem (Naylor, 2003).

A growing body of evidence suggests that patient groups coping with multiple chronic conditions and complex medication regimens are particularly vulnerable to breakdowns in care and thus have the greatest need for transitional care services (Coleman, Min, Chomiak, & Kramer, 2004; Naylor, 2000; Naylor et al., 1999, 2004). Poor transitions of these patients and their caregivers from hospitals to home have been linked to adverse events (Forster, Murff, Peterson, Gandhi, & Bates, 2003; Moore,

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Wisnevesky, Williams, & McGinn, 2003; Wenger et al., 2003), serious unmet needs (Bowles, Foust, & Naylor, 2003; Naylor, 2003), and poor satisfaction with care (California HealthCare Foundation, 2003). Rehospitalization rates among recently hospitalized older adults are very high nationally, with one-quarter to one-third considered preventable (Centers for Disease Control and Prevention [CDC], 2004; Naylor, 2003; Vinson, Rich, Sperry, Shah, & McNamara, 1990). The cycle of repeated, avoidable hospitalizations has tremendous human, as well as economic, consequences (Centers for Medicare & Medicaid Services [CMS], 2004a; Naylor, 2003; Rosati, Huang, Navaie-Waliser, & Feldman, 2003). For example, in 2003 there were more than 500,000 index hospitalizations among Medicare beneficiaries for heart failure. Within 30 days, approximately 20% of these older adults had been rehospitalized. By 1 year, one-half of these patients had been readmitted. Preventing one-quarter to one-third of rehospitalizations for this primary discharge diagnosis alone would yield millions of dollars in savings (CMS, 2004a).

Research-Based Innovations

A review of the literature on the needs of patients and caregivers making the difficult transitions to and from home healthcare suggests that the domains of relationships, management, and information should be the focus of interventions (Naylor, 2003; Reid, Haggerty, & McKendry, 2002). Transitional care interventions encompassing all of these domains have been the focus of relatively few rigorous studies. Findings from studies using nurse-directed, multidisciplinary, multidimensional interventions have demonstrated the greatest promise in improving quality and reducing healthcare costs for older adults at high risk for poor outcomes (Harrison et al., 2002; Naylor et al., 1999, 2004; Rich et al., 1995; Stewart, Pearson, & Horowitz, 2000). Study findings from a recent multisite randomized clinical trial (RCT) testing a protocol directed by advanced practice nurses (APNs) were recently reported (Naylor et al., 2004). This study was designed to address the comprehensive set of serious health problems and risks common among elders throughout an acute episode of heart failure (HF). Findings revealed an increase in the mean time to first readmission for the intervention group compared with the control group. The intervention group also experienced significantly fewer total rehospitalizations and lower mean total costs at 52 weeks postdischarge. A meta-analysis of 18 RCTs that tested similar innovations for elders hospitalized with HF revealed that most of these interventions significantly reduced readmission rates and improved selected health outcomes, such as quality of life, without increasing costs (Phillips et al., 2004).

Less intensive transitional care interventions emphasizing all domains may be just as effective for lower-risk groups (Coleman, Smith, Frank, & Min, 2004; Dudas, Bookwalter, Kerr, & Pantilat, 2001; Einstader, Cebul, & Franta, 1996; Riegel et al., 2002). Coleman (2004), using a quasi-experimental design, demonstrated that an intervention targeting medication and symptom management that was designed to encourage elders and their caregivers to assert a more active role during care transitions reduced rehospitalization rates. Increased confidence was also noted among intervention patients compared with control patients. Primary strategies employed in this intervention included the use of a personal health record and coaching by a geriatric nurse practitioner.

A few studies have demonstrated the potential of focusing on only one of the three domains. For example, a trend toward decreased hospital readmissions was found among patients who were recently discharged from the hospital and whose primary care provider received the discharge summary by the first follow-up visit (van Walraven, Seth, Austin, & Laupacis, 2002). Although the accurate and timely transfer of information offers great promise in improving the quality of transitions across settings, currently only about 10% of healthcare systems have implemented an electronic health record (EHR) system, and widespread adoption is not imminent (U.S. Department of Health and Human Services, 2003). Even when an EHR is in place, the integration of information systems across healthcare settings is rare (Sujansky, 2001).

Findings from these and other intervention studies (Woodward, Abelson, Tedford, & Hutchison, 2004) are helping to define the core components of effective transitions. Findings include (a) screening to identify high-risk patients in need of transitional care services;

(b) identification of patients' and caregivers' goals and preferences; (c) excellent communication between providers and across settings regarding the essential components of the plan of care; (d) patient and caregiver education regarding prevention and early identification of and response to worsening health problems; and (e) the availability of highly skilled nurses throughout the transitions to address patients' complex needs and navigate an intricate, often disjointed care system to promote continuity of care.

Factors Contributing to the Gap Between Best and Actual Practices

Despite compelling findings, research-based transitional care innovations have typically not been adopted by home healthcare agencies, other settings, and providers because of the lack of Medicare reimbursement. In addition, models of transitional care challenge the culture of current practice, which is characterized by the organization of care into distinct and separate silos with limited cross-disciplinary collaboration (Naylor et al., 2004). Currently, home healthcare agencies have few incentives to adopt evidence-based best practices; similarly, other healthcare settings such as hospitals have few incentives to collaborate with home healthcare agencies to improve cross-setting communication.

Providers need to be accountable for measuring and monitoring care processes and outcomes that reflect the quality of care transitions (HMO Workgroup on Care Management, 2004). Currently, mechanisms to ensure accountability tend to follow the pattern of healthcare reimbursement and financing. Although evidence exists that federal quality assurance programs and accrediting bodies are beginning to examine patient follow-up after hospital discharge, current standards reinforce the separation of care delivery into distinct silos by focusing on care delivered within rather than across settings. Relatively few performance measures on the Outcome and Assessment Information Set (OASIS) for home healthcare patients, or in the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards, examine the quality of transitions across settings (HMO Workgroup on Care Management; JCAHO, 2001). In the long term, the development and testing of quality indicators and other incentives to improve the management of patients transitioning to and from home healthcare are essential. Ongoing efforts to develop transitional care performance measures (California HealthCare Foundation, 2003; Coleman, Smith, Frank, Eilertsen, Thiare, & Kramer, 2004; Wenger & Young, 2003) and test payment system changes that encourage providers and systems to work together to meet beneficiary needs are promising approaches (CMS, 2004b).

Even without the aforementioned challenges, overwhelming evidence exists that research-based best practices are not routinely integrated into clinical care systems (Bradley et al., 2004; Cabana et al., 1999; Partridge, 2003). Often decades elapse before changes in care based on findings from the most rigorous RCTs are adopted (Farquhar, Stryer, & Slutsky, 2002; Grimshaw et al., 2001; Reuben, 2002; Rogers, 2003). Despite these challenges, much more can and must be done by home healthcare agencies, as well as by other settings and providers, to incorporate evidence-based approaches to transitional care.

Strategies for Incorporating Best Practices into Home Healthcare

The failure to translate research into clinical practice has captured the attention and interest of federal agencies (Clancy, 2003; National Heart, Lung, and Blood Institute, 2002) and foundations (Bradley et al., 2004), resulting in increased funding for such efforts. Researchers are increasingly collaborating with potential end-users of their research to promote adoption of evidence-based best practices. These partnerships have been formed to close the chasm between research and practice, an exceedingly important goal given the projected growth over the next few decades of the population of chronically ill children and adults with complex care needs. The following case study illustrates such an effort.

Since 1989 a multidisciplinary research team based at the University of Pennsylvania has been testing and refining an innovative APN care model of transitional care delivered by APNs to high-risk older adults who are making the difficult transition from hospital to home. Study findings from three RCTs funded by the National Institute of Nursing Research have consistently demonstrated the ability of this care model to improve patient outcomes and decrease costs (Naylor et al., 1994, 1999,

2004). Research teams have achieved similar findings when the model has been tested with other adult patient groups (Neff, Madigan, & Narsavage, 2003). For the aforementioned reasons, the compelling body of evidence showing the effectiveness of the APN care model has had little effect on clinical practice.

To bridge the chasm between a proven model of transitional care and current practices, the University of Pennsylvania team has formed partnerships with the Aetna Corporation and Penn Home Care and Hospice. This project team is attempting to translate, integrate, and evaluate the APN care model into an insurer and home healthcare setting and ultimately to package this model of care in a way that facilitates widespread adoption by other home health settings, insurers, purchasers, and health systems. With the support of the Commonwealth Fund, the Langeloth Foundation, and guidance from a national advisory committee, project team members have designed and tested essential tools of translation. These include an interactive Web-based curriculum to prepare APNs to implement the care model and a clinical information system that facilitated the APNs' use of the best evidence in delivering patient care. The information system captures the critical elements of the model and guides patient assessments, nursing interventions, and outcome measurement through a documentation system that also provides access to established clinical guidelines. A strategy to communicate the core components of the model and its benefits to potential consumers and their healthcare providers has also been developed. A large-scale evaluation of the care model with Aetna beneficiaries in a defined market has recently begun.

Guided by knowledge about the critical dynamics of innovation diffusion (Fisher, 2004; Rogers, 2003) and recent lessons learned from the diffusion of research-based healthcare innovations (Berwick, 2003; Bradley et al., 2004; Feifer et al., 2004; Institute for the Future, 2002), efforts are under way to evaluate the diffusion of this innovation within Aetna and Penn Home Care and Hospice and to assess and document the factors and conditions required for successful adoption and implementation. This assessment includes examining the organizational culture, incentive systems, and financing and regulatory mechanisms that influence implementation of this care model by a major insurer and home health agency. Key indicators of success will be the model's overall performance in (1) improving actual outcomes, (2) capitalizing on facilitators and minimizing barriers to integration into an insurer's and a home health agency's operations, (3) securing decisions by Aetna and partnering home health settings to adopt the model for use by Aetna's beneficiaries, and (4) having the findings used by other insurers and the CMS in making decisions regarding reimbursement of care coordination.

Future Agenda

Opportunities to advance the science in transitional care and translate proven best practices in home healthcare are substantial. The priorities on this agenda include testing and refining the profile of patient groups in greatest need of transitional care services; comparing and contrasting the relative effectiveness of alternative transitional care-intervention designs and staffing models; identifying the optimal length, intensity, and provider of such interventions; examining the generalizability of findings across a broader spectrum of patient groups and settings; developing and testing incentives to improve the transition of patients to and from home healthcare; and testing interventions to translate and promote widespread adoption of proven models of transitional care.

Measuring the effect of innovations that bridge hospital to home healthcare and home healthcare to community requires understanding the complex issues inherent in studying multifaceted interventions that take place over time in multiple complex settings. Some of the more challenging methodological issues include identifying severity and risk adjustment measures to ensure comparability of study groups, accessing usable data in multiple settings, determining the contributions of selected components of multifaceted interventions to outcomes, and selecting sensitive and influential outcome indicators.

Conclusions

Although a robust agenda will guide future research, the contributions of clinical scholars to date provide home healthcare leaders, managers, and clinicians with a blueprint for immediate action related to transitional care. The domains of relationships, management,

and information will serve as the framework for recommendations that can be implemented immediately to facilitate effective transitions and improve patients' outcomes.

Relationships

Home healthcare nurses are recognized as strong advocates for patients and their caregivers. They should use this role to foster other patient-provider as well as provider-provider relationships in order to promote effective care transitions. At a system level, collaborative teams of home healthcare nurses and physicians who commonly refer patients could be established to care for the chronically ill patients who are frequent users of home healthcare services. Because continuity of care is critical to establishing positive relationships, efforts to provide patients with consistent access to the same clinicians are essential.

Management

The use of risk screens upon admission to home healthcare would facilitate matching the skill levels of clinicians, nature of services, and level of intervention to patients' needs. Systems of care management and communication should be designed to anticipate the changing needs of patients over an episode of care. Throughout each episode of care, home healthcare clinicians should be guided to focus on evidence-based priority issues progressing from symptom management to self-care behaviors such as patients' and caregivers' ability to identify early signs of worsening health problems and to intervene appropriately.

Information

Home healthcare clinicians should persist in their efforts to obtain accurate, timely, and complete information from hospitals and acute care providers. The active involvement of clinicians in the implementation of forms or information systems that assist in the transfer of information across settings is very important. The use of a case or discharge summary that details the patient's goals, progress, and recommendations throughout the episode of home healthcare and is provided to the patient or caregiver and all physicians involved in the patient's care has also been found to facilitate effective transitions (Naylor et al., 2004). Home healthcare leaders and managers should actively track, support, and inform national efforts such as the design of the Continuity of Care Record (American Academy of Family Physicians, 2004) and the development of standards for that portion of the EHR that accompanies patients as they move throughout the health system. Who would better inform this work than home healthcare clinicians?

Home healthcare leaders, managers, and clinicians are exceedingly well positioned to assume a leading role in responding to one of the top national quality healthcare priorities in this country—improving care coordination through enhanced transitional care. Without question, home healthcare is the segment of our system uniquely positioned to ensure that patients and their caregivers do not fall through the cracks. Despite formidable obstacles, history suggests that home healthcare practitioners can and will rise to the challenge.

References

Agency for Healthcare Research Quality. (2002). *Outcomes by patient and hospital characteristics for all discharges.* Retrieved **[AU: PLEASE PROVIDE RETRIEVAL DATE]** from www.ahrq.gov/HCUPnet.asp.

American Academy of Family Physicians. (2004). *Continuity of Care Record.* AAFP's Center for Health Information Technology. Retrieved **[AU: PROVIDE DATE]** from www.centerforhit.org.

Berwick, D. M. (2003). Disseminating innovations in health care. *Journal of the American Medical Association, 289,* 1969–1975.

Bowles, K. H., Foust, J. B., & Naylor, M. D. (2003). Hospital discharge referral decision making: A multidisciplinary perspective. *Applied Nursing Research, 16*(3), 134–143.

Bradley, E. H., Webster, T. R., Baker, D., Schlesinger, M., Inouye, S. K., Barth, M. C., et al. (2004). Translating research into practice: Speeding the adoption of innovative health care programs. *Issue Brief (Commonwealth Fund),* 724, 1–12.

Burt, C. W., & McCaig, L. F. (2002). Trends in hospital emergency department utilization: United States, 1992–99. *Vital Health Statistics Ser. 13, 150,* 1–34.

Cabana, M. D., Rand, C. S., Powe, N. R., Wu, A. W., Wilson, M. H., Abboud, P. A., et al. (1999). Why don't physicians follow clinical practice guidelines? A framework for improvement. *Journal of the American Medical Association, 282,* 1458–1465.

California HealthCare Foundation. (2003). *Results from the Patients' Evaluation of Performance (PEP-C) survey.* Retrieved **[AU: PROVIDE DATE]** from www.chcf.org/documents/quality/PEPCTechReport.pdf.

Centers for Disease Control and Prevention. (2004). *Health care in America: Trends in utilization.* DHHS Pub. No. 2004–1031. Washington, DC: Author.

Centers for Medicare & Medicaid Services. (2004a). *2003 Data compendium.* Retrieved **[AU: PROVIDE DATE]** from www.cms.hhs.gov/researchers/pubs/datacompendiums/current/.

Centers for Medicare & Medicaid Services. (2004b). *The chronic care improvement program.* Retrieved **[AU: PROVIDE DATE]** from www.cms.hhs.gov/medicarereform/ccip/.

Clancy, C. M. (2003). Health services research: From galvanizing attention to creating action. *Health Services Research, 38*(3), 777–782.

Coleman, E. A., & Boult, C. (2003). Improving the quality of transitional care for persons with complex needs. Position statement of the American Geriatrics Society Health Care Systems Committee. *Journal of the American Geriatrics Society, 51,* 556–557.

Coleman, E. A., Min, S. J., Chomiak, A., & Kramer, A. M. (2004). Posthospital care transitions: Patterns, complications, and risk identification. *Health Services Research, 39*(5), 1449–1465.

Coleman, E. A., Smith, J. D., Frank, J. C., Eilertsen, T. B., Thiare, J. N., & Kramer, A. M. (2004). Development and testing of a measure designed to assess the quality of care transitions. *International Journal of Integrated Care, 2*(2), **[AU: SUPPLY PAGE #S].**

Coleman, E. A., Smith, J. D., Frank, J. C., Min, S. J., Parry, C., & Kramer, A. M. (2004). Preparing patients and caregivers to participate in care delivered across settings: The care transition intervention. *Journal of the American Geriatrics Society, 52,* 1817–1825.

Committee on Identifying Priority Areas for Quality Improvement. Institute of Medicine. (2003). (K. Adams & J. M. Corrigan, Eds.). Washington, DC: National Academies Press.

Dudas, V., Bookwalter, T., Kerr, K. M., & Pantilat, S. Z. (2001). The impact of follow-up telephone calls to patients after hospitalization. *American Journal of Medicine, 111*(9B), 26S–30S.

Einstader, D., Cebul, R. D., & Franta, P. R. (1996). Effect of a nurse case manager on post-discharge follow-up. *Journal of General Internal Medicine, 11,* 654–658.

Farquhar, C. M., Stryer, D., & Slutsky, J. (2002). Translating research into practice: The future ahead. *International Journal for Quality in Health Care, 14*(3), 233–249.

Feifer, C., Fifield, J., Ornstein, S., Karson, A. S., Bates, D. W., Jones, K. R., et al. (2004). From research to daily clinical practice: What are the challenges in "translation"? *Joint Commission Journal on Quality and Safety, 30*(5), 235–245.

Fisher, R. W. (2004). Diffusion of innovation theory for clinical change. *Medical Journal of Australia, 180,* S55–56.

Forster, A. J., Murff, H. J., Peterson, J. F., Gandhi, T. K., & Bates, D. W. (2003). The incidence and severity of adverse events affecting patients after discharge from the hospital. *Annals of Internal Medicine, 138*(3), 161–167.

Gabrel, C. S., & Jones, A. (2000). The National Nursing Home Survey: 1997 summary. *Vital Health Statistics Series 13,* (147), 1–121.

Grimshaw, J. M., Shirran, L., Thomas, R., Mowatt, G., Fraser, C., Bero, L., et al. (2001). *Changing provider behavior: An overview of systematic reviews of interventions. Medical Care, 39*(8 Suppl. 2), II2–45.

Harrison, M. B., Browne, G. B., Roberts, J., Tugwell, P., Gafni, A., & Graham, I. D. (2002). Quality of life of individuals with heart failure: A randomized trial of the effectiveness of two models of hospital-to-home transition. *Medical Care, 40*(4), 271–282.

HMO Workgroup on Care Management. (2004). *One patient, many places: Managing health care transitions.* Washington, DC: AAHP-HIAA Foundation.

Institute for the Future. (2002, May). *Diffusion of innovation in health care.* Prepared for the California HealthCare Foundation. Oakland, CA. Retrieved [AU: PROVIDE DATE] from www.iftf.org/docs/SR-778-Diffusion_of_Innovation_in_Health.

Joint Commission on Accreditation of Healthcare Organizations. (2001). Standards and intent statements—section 1: Patient-focused functions. In *Hospital Accreditation Standards* (pp. 69–156). Oakbrook Terrace, IL: Author.

Moore, C., Wisnevesky, J., Williams, S., & McGinn, T. (2003). Medical errors related to discontinuity of care from an inpatient to an outpatient setting. *Journal of General Internal Medicine, 18*(8), 646–651.

National Heart, Lung, and Blood Institute. (2002). *Strategic plan FY 2003–2007: Translation of research into practice.* Retrieved **[AU: PROVIDE DATE]** from www.nhlbi.nih.gov/resources/docs/plan/translat.htm.

Naylor, M. (2000). A decade of transitional care research with hospitalized elders. *Journal of Cardiovascular Nursing, 14*(3), 1–14.

Naylor, M. D. (2003). Transitional care of older adults. In J. J. Fitzpatrick, P. G. Archbold, & B. J. Stewart (Eds.), *Annual Review of Nursing Research, Vol. 20.* New York: Springer.

Naylor, M. D., Brooten, D., Campbell, R., Jacobsen, B. S., Mezey, M. D., Pauly, M. V., et al. (1999). Comprehensive discharge planning and home follow-up of hospitalized elders: A randomized clinical trial. *Journal of the American Medical Association, 281,* 613–620.

Naylor, M. D., Brooten, D. A., Campbell, R. L., Maislin, G. M., McCauley, K. M., & Schwartz, J. S. (2004). Transitional care of older adults hospitalized with heart failure: A randomized clinical trial. *Journal of the American Geriatrics Society, 52*(5), 675–684.

Naylor, M. D., Brooten, D. A., Jones, R., Lavizzo-Mourey, R., Mezey, M., & Pauly, M. (1994). Comprehensive discharge planning for the hospitalized elderly: A randomized clinical trial. *Annals of Internal Medicine, 120*(12), 999–1006.

Neff, D. F., Madigan, E., & Narsavage, G. (2003). APN-directed transitional home care model: Achieving positive outcomes for patients with COPD. *Home Healthcare Nurse, 21*(8), 543–550.

Partnerships for Solutions. (2002, December). *Chronic conditions: Making the case for ongoing care.* Prepared for the Robert Wood Johnson Foundation. Baltimore: Johns Hopkins University.

Partridge, M. R. (2003). Translating research into practice: How are guidelines implemented? *European Respiratory Journal, 39*(Suppl.), 23s–29s.

Phillips, C. O., Wright, S. M., Kern, D. E., Singa, R. M., Shepperd, S., & Rubin, H. R. (2004). Comprehensive discharge planning with postdischarge support for older patients with congestive heart failure: A meta-analysis. *Journal of the American Medical Association, 291*(11), 1358–1367.

Reid, R. J., Haggerty, J., & McKendry, R. (2002, March). *Defusing the confusion: Concepts and measures of continuity of healthcare, final report.* Paper prepared for the Canadian Health Services Research Foundation. Ottawa: Canadian Health Services Research Foundation.

Reuben, D. B. (2002). Organizational interventions to improve health outcomes of older persons. *Medical Care, 40*(5), 416–428.

Rich, M. V., Beckham, C., Wittenberg, C. L., Leven, C. L., Freedland, K. E., & Carney, R. M. (1995). A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *New England Journal of Medicine, 333*(18), 1190–1195.

Riegel, B., Carlson, B., Kopp, Z., LePetri, B., Glaser, D., & Unger, A. (2002). Effect of a standardized nurse case-management telephone intervention on resource use in patients with chronic heart failure. *Archives of Internal Medicine, 162*(6), 705–712, 722–723.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Rosati, R. J., Huang, L., Navaie-Waliser, M., & Feldman, P. H. (2003). Risk factors for repeated hospitalizations among home healthcare recipients. *Journal for Healthcare Quality, 25*(2), 4–10.
Stewart, S., Pearson, S., & Horowitz, J. D. (2000). Effects of a home-based intervention among patients with congestive heart failure discharged from acute hospital care. *Archives of Internal Medicine, 158,* 1067–1072.
Sujansky, W. (2001). Heterogeneous database integration in biomedicine. *Journal of Biomedical Informatics, 34*(4), 285–298.
U.S. Department of Health and Human Services. (2003). *Transforming healthcare quality through information technology (THQIT)—implementation grants.* Request for applications. RFA-HS-04-011. Washington, DC: Author.
van Walraven, C., Seth, R., Austin, P. C., & Laupacis, A. (2002). Effect of a discharge summary availability during post-discharge visits on hospital readmission. *Journal of General Internal Medicine, 1,* 186–192.
Vinson, J., Rich, M., Sperry, J., Shah, A., & McNamara, T. (1990). Early readmission of elderly patients with congestive heart failure. *Journal of the American Geriatrics Society, 38*(12), 1291–1295.
Wenger, N. S., Solomon, D. H., Roth, C. P., MacLean, C. H., Saliba, D., Kamberg, C. J., et al. (2003). The quality of medical care provided to vulnerable community-dwelling older patients. *Annals of Internal Medicine, 139*(9), 740–747.
Wenger, N. S., & Young, R. (2003). Quality indicators for continuity and coordination of care in vulnerable elders. Retrieved **[AU: PROVIDE DATE]** from www.acponline.org/sci-policy/acove.
Woodward, C. A., Abelson, J., Tedford, S., & Hutchison, B. (2004). What is important to continuity in home care? Perspectives of key stakeholders. *Social Science and Medicine, 58,* 177–192.

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