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Transitional Care for Older Adults: A Cost-Effective Model

Editor's note: Although the quality of care in hospitals and ambulatory settings is undergoing more scrutiny, far less attention has focused on the care patients receive as they move from one setting to another. Older patients who transition from hospital to home are particularly vulnerable: many of these patients have multiple health problems that continue beyond discharge. In response, investigators at the University of Pennsylvania developed a model of care delivered by nurse experts who follow vulnerable elders through their hospitalization and monitor their progress at home. This Issue Brief summarizes more than a decade of research on this model of transitional care and its effects on the costs and quality of care for hospitalized elderly patients.

Elderly patients are at increased risk for poor outcomes in the transition from hospital to home

As hospital stays grew shorter in the mid-80s, concerns were raised that the number of elderly patients discharged with unresolved health problems was growing, and that some of these patients were being discharged with care needs too complex for families to manage alone.

- In a review of nearly 100 studies reported in 1985-2001, Dr. Naylor found that breakdowns in care during the transition of older adults from hospital to home are associated with high rates of poor outcomes after discharge. Rehospitalization rates for these patients are high, and one-quarter to one-third of these rehospitalizations are believed to be preventable. In addition, at least one-third of all patients and caregivers report substantial unmet needs and high levels of dissatisfaction with the transitional process.
- Elders at particular risk during the transition include those with multiple medical problems, functional deficits, cognitive impairment, emotional problems, and poor general health behaviors.
- The review identified system factors associated with poor outcomes, such as breakdowns in communication between providers and across health care agencies, inadequate patient and caregiver education, poor continuity of care, and limited access to services.

Model of transitional care features comprehensive discharge planning and follow-up by nurse experts

Over the past 20 years, Dr. Naylor and colleagues developed and refined a transitional care model to address the unmet needs of hospitalized elders and to improve outcomes after discharge.

- The model involves comprehensive discharge planning by a master's prepared advanced practice nurse (APN) with gerontological expertise. The APN tailors post-discharge services to each patient's situation, and provides follow-up care by telephone and home visits.

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- The intervention is notable for its emphasis on identifying patients' and caregivers' goals, individualized plans of care developed and implemented by APNs in collaboration with patients' physicians, educational and behavioral strategies to address patients' and caregivers' needs, and coordination and continuity of care across settings.
 - Dr. Naylor and colleagues tested the model in a series of studies designed to evaluate the intervention's effects on costs and outcomes, identify patient groups for which the intervention might be most effective, and define the intensity and duration of services necessary to improve outcomes.

First study finds that transitional care improves outcomes for elderly cardiac patients in the short-term

The first study involved 276 elderly patients (aged 70 or older) hospitalized for either medical or surgical treatment of selected cardiac conditions at the University of Pennsylvania. Patients were randomly assigned to receive usual care (control group) or the intervention, which included discharge planning by an APN and telephone contact with patients for two weeks after discharge. Outcomes of care were measured 2, 6, and 12 weeks after discharge.

- The intervention had positive effects for medical patients, but did not change outcomes for surgical patients. At the 6-week point, the medical intervention group had 61% fewer readmissions to the hospital, and 70% fewer inpatient days once readmitted, compared to the control group. Ten per cent of the intervention group was readmitted in the first six weeks, compared to 23% in the control group.
- At the 6-week point, total charges for health care services after discharge for the medical intervention group were \$295,598 less than charges for the control group. Average charges for the intervention group 6 weeks after discharge were \$2,453, compared with \$6,746 for the control group. These savings offset, by far, the average cost of APN services in the intervention group, estimated at \$93 per patient.
- Beyond the 6-week point, the positive benefits of the intervention began to decline. Between 6 and 12 weeks after discharge, there were no differences in readmissions or average charges for health care services between the medical intervention and control group.
- Further analysis revealed that the intervention had its greatest effect on elderly patients with many comorbid conditions and functional deficits. Based on these findings, the research team developed and tested a more intensive intervention targeted at more vulnerable patients.

Next study shows benefits of more intensive transitional care targeted at high-risk elders

The second study involved 363 high-risk elders hospitalized at one of two urban hospitals in Philadelphia. These patients had a variety of common medical conditions and were identified as high-risk by criteria developed in the previous study. Patients 65 or older were randomly assigned to receive usual care or the intervention, which included APN visits at admission and at least every 48 hours during the hospitalization. The APN was responsible for discharge planning and substituted for the visiting nurse during the first 4 weeks after discharge. APNs had weekly telephone contact with patients and were available 7 days a week. Dr. Naylor and colleagues measured outcomes 2, 6, 12, and 24 weeks after discharge.

- At 24 weeks after discharge, the intervention group had fewer rehospitalizations, fewer patients with multiple readmissions, and fewer hospital days per patient than the control group. Twenty per cent of the intervention group was rehospitalized within 24 weeks, compared to 37% of the control group. Beneficial effects were seen in patients in all diagnostic categories except for patients hospitalized with heart failure. For these patients, the effects of the intervention extended only through 6 weeks after discharge.
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- At 24 weeks, total costs (Medicare reimbursements) for post-discharge health services in the control group were about twice as much as that of the intervention group, yielding savings of \$596,333, or \$3,000 per patient. This included the cost of APN services after discharge in the intervention group. In this study, APN hospital visits substituted for standard discharge planning and therefore no additional costs were assigned to that phase.
 - These findings indicate that the more intensive intervention improved the transitional care model's benefits, and confirmed the value of targeting at-risk elders.

Transitional care model is expanded and enhanced for elderly patients with heart failure

Elders with heart failure have the highest hospitalization rate of all adult patient groups. Findings from the previous study suggested that the APN intervention was not sufficiently targeted to help elders manage the disabling symptoms and complex treatment regimens characteristic of heart failure. Thus, Dr. Naylor and colleagues expanded the model to specifically address the set of serious health problems and risk factors common in elders throughout an acute episode of heart failure.

- The expanded model included a 2-month training program for APNs led by a multidisciplinary team of heart failure experts, and APN implementation of an evidence-based protocol based on national guidelines. The protocol guided patient management, but allowed the APN considerable flexibility to individualize care.
- The protocol consisted of an initial APN visit within 24 hours of admission, daily visits during hospitalization, at least 8 home visits (one within 24 hours of discharge), weekly visits during the first month, bimonthly visits during the second and third months and additional visits and phone calls based on patients' needs.
- By extending the intervention 3 months beyond discharge, the researchers hoped to achieve sustained improvements in outcomes in patients at high risk for rehospitalization.

New study points to long-term clinical and economic benefits of transitional care in elderly cardiac patients

Dr. Naylor and colleagues studied the long-term effects of this expanded transitional care model at 6 Philadelphia academic and community hospitals. The latest study represents the first multisite assessment of a transitional care intervention targeting elderly patients with heart failure. Between February 1997 and January 2001, 239 patients aged 65 and older with heart failure were randomly assigned to an intervention or control group. Outcomes were measured 2, 6, 12, 26, and 52 weeks after discharge.

- One year after discharge, the intervention group had significantly better outcomes than the control group. The intervention group had fewer readmissions (104 vs. 162), fewer hospital days (588 days vs. 970 days), and a higher percentage of patients without any rehospitalization (45% vs. 32%).
- Total and average costs (reimbursements) were lower in the intervention group than the control group. After one year, average costs were \$7,636 in the control group, and \$12,481 in the usual care group, yielding cost savings of \$4,845 per patient. This figure includes the direct costs of the intervention, including APN home visits and the involvement of multidisciplinary heart failure experts in training.
- Although the number and estimated costs for home visits were higher for the intervention group, these increased costs were more than offset by reductions in rehospitalizations within the first six months after discharge. The net result was a 37.6% reduction in total costs over the 12-month study period (\$725,903 intervention vs. \$1,163,810 control group).
- Compared to the control group, patients in the intervention group reported greater satisfaction with care (assessed only at 2 and 4 weeks after discharge). The intervention group also reported improvements in overall quality of life, but differences between the groups did not persist beyond the 12-week point.

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POLICY IMPLICATIONS

These studies strongly suggest the clinical and economic benefits of a comprehensive, multidisciplinary, individualized intervention directed by clinical nurse experts that spans the entire hospitalization and bridges the transition from hospital to home.

- Policymakers should consider the adoption of a transitional care benefit under Medicare, which would cover cost-effective coordinated care models such as transitional care delivered by appropriately trained nurses.
- Medicare coverage is the first step in changing present systems of care, which is characterized by the organization of care into distinct and separate silos (i.e., hospital and home care). Longitudinal integration of physician and nursing care is needed to support elderly patients through an acute episode of illness, and assure continuity of care for high-risk elders.
- Further research is needed to define the relative effectiveness of alternative designs and components of transitional care, and to define the optimal length and intensity of interventions.

This Issue Brief is based on the following articles: M.D. Naylor, D.A. Brooten, R.L. Campbell, G. Maislin, K.M. McCauley, J.S. Schwartz. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. Journal of the American Geriatrics Society, May 2004, vol. 52, pp. 675-684; M.D. Naylor. Transitional care of older adults. Annual Review of Nursing Research, 2003, vol. 20, pp. 127-147; M.D. Naylor, D.A. Brooten, R. Campbell, et al. Comprehensive discharge planning and home follow-up of hospitalized elders. Journal of the American Medical Association, Feb. 17, 1999, vol. 281, pp. 613-620; and M. Naylor, D. Brooten, R. Jones, et al. Comprehensive discharge planning for the hospitalized elderly. Annals of Internal Medicine, June 1994, vol. 120, pp. 999-1006.

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