Improving Hospital Discharge Planning for Elderly Patients

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Hospital discharge planning has become increasingly important in an era of prospective payment and managed care. Given the changes in tasks, decisions, and environments involved, it is important to identify how to move such planning from an art to an empirically based decisionmaking process. The authors use a decision-sciences framework to review the state-of-the-art of hospital discharge planning and to suggest methods for improvement.

INTRODUCTION

For the older patient, the discharge from a hospital is a critical juncture, when decisions are made that may influence the rest of that person's life. Discharge planning is a challenging task under the best of circumstances, and changes in the health care environment have made it almost impossible to do such planning well. The two major forces influencing the discharge-planning process over the last decade and a half are the Medicare prospective payment system (PPS) and the rise of managed care, both of which have created incentives to shorten hospital stays. The incentives under PPS actually created a disadvantageous situation for Medicare by encouraging the early discharge of patients into post-acute care (PAC); this care was paid for by Medicare but was not under PPS (Morrisey, Sloan, and Valvona, 1988; Neu, Harrison, and Heilbrunn, 1989; Neu and Harrison, 1988). Although the type of patients treated and the mix of PAC varied across home health care agencies, skilled nursing homes, and rehabilitation facilities, all three of these care modalities experienced substantial growth following the enactment of PPS (DesHarnais, Cheney, and Fleming, 1988; Guterman and Dobson, 1986; Gornick and Hall, 1988; Prospective Payment Assessment Commission, 1993). The acuity levels of nursing home care and home health care also increased (Shaughnessy and Kramer, 1990). Changes mandated by the Balanced Budget Act of 1997 (Public Law 105-33) seek to address these inadvertent perverse incentives by treating discharges to PAC as hospital transfers. Because managed care organizations maintain responsibility for the costs of care throughout an episode, they should have incentives to think in a longer term. However, few have shown such foresight. Instead, these organizations are more likely to focus on restricting PAC options.

Even under the best of circumstances, the discharge-planning process in hospitals is inherently complex. Information from many sources must be gathered, including patient-specific information regarding functional status and patient and family preferences, as well as information about available community resources (McKeehan and Coulton, 1985). Alternatives must be generated based on

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the information gathered, and one alternative must be selected and implemented. This selection involves trading off factors that patients, their families, and health care workers may value differently. Added to this complexity is the environment in which these decisions are made, which is often one of time constraints and emotional distress (Hoffman, 1985). Hospital discharge planners generally recognize variations in patient characteristics when making their recommendations. Besides the factors already mentioned, discharge planners must consider availability of caretakers at home, ethnicity, age, sociodemographics, previous hospitalizations, and technology dependence (Naylor and Pryor, to be published).

Prospective payment has accelerated much of the care within the hospital, necessitating earlier screening, assessment, intervention, and community contact (Blumenfield and Rosenberg, 1988). The pressure for "quicker and sicker" discharges has led to an increased demand for PAC. New forms of care have been created (or reinvented), such as subacute care. In effect, care that was formerly provided in the hospital is now offered elsewhere. The question of just how comparable the care is remains to be determined, but a study shortly after the introduction of PPS found little evidence of a perceptible diminution in quality (Kahn et al., 1990).

With shortened lengths of hospital stay, it is difficult to assess a patient's medical prognosis and prehospital level of functioning, much less predict posthospital potential. Posthospital acuity levels have increased, resulting in more complex arrangements and increased teaching needs for patients and family caregivers (Kosecoff et al., 1990; Shaughnessy and Kramer, 1990). In response to PPS restrictions on growth, some hospital systems have created vertically integrated health care systems, which have increased pressures on discharge planning. These systems manage the financial risks of providing care across the continuum of acute, postacute, and long-term care (LTC). To compete, the system must exhibit "systemness," rather than act as a loose collection of organizations under a corporate umbrella (Shortell, Morrison, and Friedman, 1990). Thus, coordinating the transition of patient care at each level takes on added fiscal importance. In practice, these vertically integrated systems foster greater use of their own facilities, thereby limiting discharge planners' options.

On the other hand, the rise of Medicare managed care has created its own problems. The incentives under managed care are to reduce costs, and hospital care is a major cost driver. Whereas Medicare pays a fixed rate for a hospitalization without regard to length of stay (excluding outliers) and thus does not benefit directly from an earlier discharge (or may in fact pay more for the substituted care), managed care organizations may negotiate length-of-stay responsive rates with hospitals. Moreover, organizations may also restrict the choices of PAC to certain providers or those they believe to be cheapest. Thus, while extolling the virtues of consumer satisfaction and choice, managed care organizations are effectively offering patients any color they want as long as it's black.

Although the evidence of the effects of managed care on quality of care for older persons is mixed, the criticisms have been heard. The Medical Outcomes Study report, suggesting that older patients fared less well in terms of physical functioning, raised serious concerns (Ware, Jr. et al., 1996). Similarly, a report that Medicare patients receiving home health care under managed care were less likely to receive as much care and had poorer outcomes than

those in fee-for-service (Shaughnessy, Schlenker, and Hittle, 1994) has been frequently cited, although other studies did not find such effects (Holtzman, Chen, and Kane, to be published).

Discharge planners thus find themselves disadvantaged on several levels. Shorter stays place them under great time pressure. Critical decisions must not only be made quickly, there is often little observational data on which to base them. Decisions about patients are more likely to be based on prognosis than on observation of performance. Restricted options make the decisions easier in one respect but frustrate attempts to provide real consumer choice. Under these conditions, availability can easily become the predominant criterion for choosing a PAC setting. At the same time, there is reason to believe that such hasty decisionmaking may not be efficient. Many frail older persons must be readmitted to hospitals at substantial cost. Poor choices of discharge destination can lead to less desirable outcomes and greater attendant costs. In an era of chronic disease, dealing with each event as a discrete episode may prove to be shortsighted.

It is hard to evaluate the quality of a discharge plan. Efforts to model discharge destinations have identified patient variables that are often associated with certain destinations, but the predictive accuracy of these models varies widely. On the one hand, a simple functional scale, the functional independence measure (FIM), was used to predict discharge destinations correctly 70 percent of the time for stroke patients discharged from a rehabilitation unit (Mauthe et al., 1996; MacNeill and Lichtenberg, 1997). In contrast, predictions of hospital discharge destinations for stroke patients using a much more comprehensive model was accurate only 52 percent of the time (Kane et al., 1996). Older hospitalized patients were more likely to be discharged to nursing homes if they were white, living alone, and had poorer preadmission activities of daily living (ADL) scores (Rudberg, Sager, and Zhang, 1996). Among elderly patients discharged from the hospital with a hip fracture, poor balance, and poor gait increased the odds of a nursing home transfer by 20 percent and 17 percent, respectively (Fox et al., 1998). The limited accuracy in predicting discharge destinations can be interpreted as reflecting either inconsistent decisionmaking or consideration of factors not measured. In fact, if discharges were totally predictable, it would mean that patients being sent to the various locations were distinguishable. In the absence of any overlap, it would be virtually impossible to assess the relative effectiveness of alternative placements.

Not a great deal is known about the outcomes of discharge planning. The studies that have examined its repercussions tend to paint a bleak picture. A followup of elderly patients discharged after treatment for congestive heart failure found that for 40 percent of the patients, one or more components of discharge were not implemented as planned (Proctor, Morrow-Howell, and Kaplan, 1996). Another study of discharged elderly patients showed a high rate of rehospitalization (Lockery et al., 1994). Elderly patients with hip fractures discharged to nursing homes had poorer functional outcomes (Young et al., 1997). A comprehensive study of Medicare hospital discharges of patients with 1 of 5 diagnosis-related groups (DRGs) associated with active PAC use concluded that, after adjustments for risk factors, discharge to home health care and inpatient rehabilitation were associated with the best functional outcomes. Discharges to a nursing home generally yielded the worst

results, even worse in most cases than going home with no formal care (Kane et al., to be published-a).

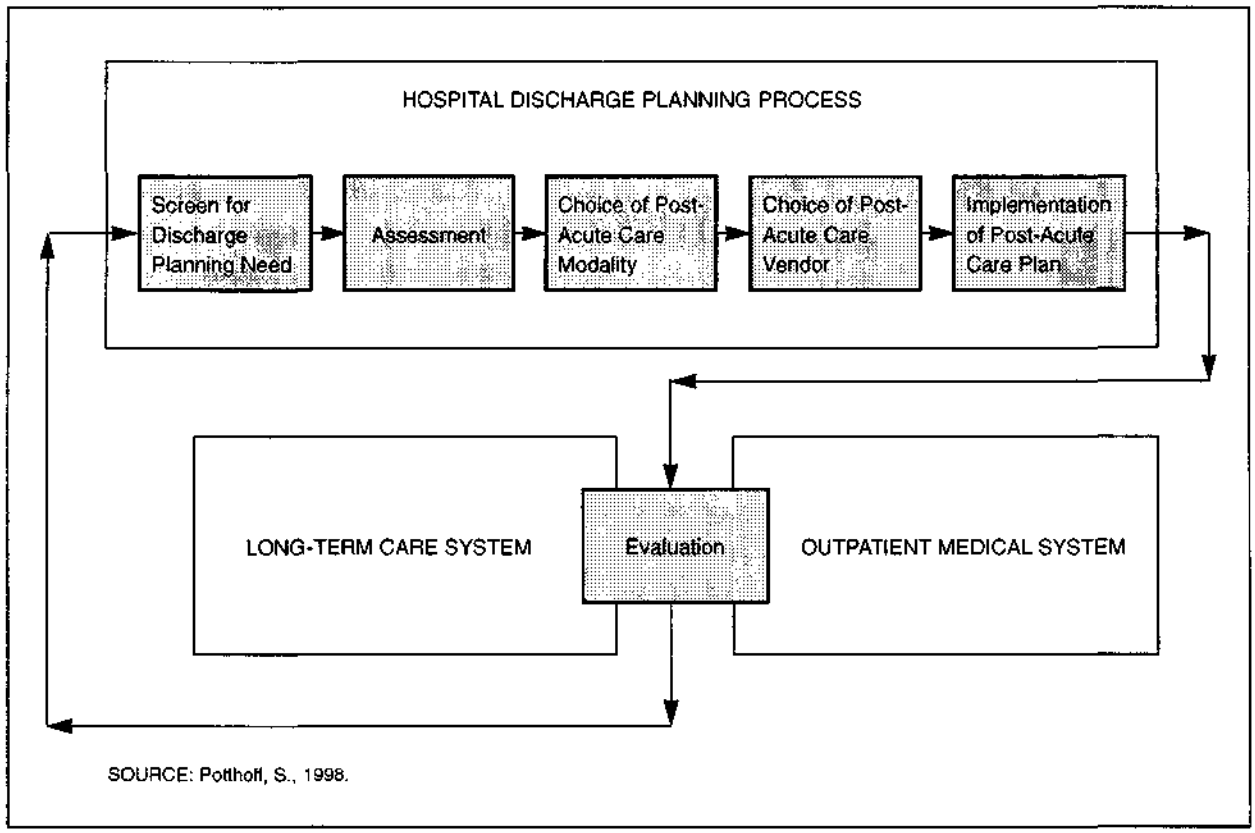
Given the increasing complexity in tasks, decisions, and environment, it is imperative that discharge-planning progress from an art to an empirically based decisionmaking process. We need to explicate each step of the process in order to empower patients and families in meaningful ways. In spite of the ideal of patient-directed decisions in discharge planning, research suggests that patient participation falls far short of this ideal (Jewell, 1993). The challenge is to conduct discharge planning in a way that will allow for effective choices and meaningful consumer participation. A strong argument for structuring the discharge-planning process is to identify the real potential for such consumer participation. Too often we offer consumers major responsibility for decisions without providing them with the relevant information needed to exercise these choices. The more discharge planning is done in an environment of incomplete information, the more difficult it becomes to structure a meaningful role for consumers.

We use a decision-sciences framework (Findeisen and Quade, 1985; Sainfort et al., 1990) to review hospital discharge planning as a decisionmaking process. This framework provided the structure for site visits to 10 hospitals in 7 cities to understand the extent to which the discharge-planning process is evolving, and the impact of the environmental forces on the discharge-planning process. These sites were chosen based on the recommendations of national discharge-planning experts. Sixteen potential sites were initially recommended by the experts. Open-ended phone interviews were conducted to gain an understanding of each site's discharge-planning process. Hospitals that appeared to have the most innovative discharge-planning processes were chosen for site visits. Six of the seven cities in which these hospitals were located had substantial penetration of managed care, and five of the cities had Medicare managed care.

DISCHARGE PLANNING DECISION-MAKING PROCESS

Systems analysis decomposes decision problems into their component pieces and provides a classical structural framework for studying the discharge-planning process. Although the number and division of phases vary (Sainfort et al., 1990), they include: (1) identifying that a problem exists; (2) formulating the problem and clarifying goals; (3) generating and evaluating alternatives; (4) choosing the preferred alternative; (5) implementing the choice; and (6) monitoring this choice. Literature on discharge planning highlights that its steps have been defined in various ways, with various subsets of a systems-analysis framework represented. Mamon et al. (1992) define four phases, including patient assessment, development of a discharge plan, provision of services (including family and patient education, and service referral), and followup evaluation. These are, in turn, subdivided into patient screening, psychosocial assessment, provision of counseling and education, coordination of interdisciplinary teams of providers, activation of community services, and followup and evaluation (Oktay et al., 1992). McKeehan (1981) defines five steps of discharge planning: assessment, diagnosis, prescription, implementation, and evaluation. Finally, Proctor and Morrow-Howell (1990) define the discharge-planning tasks as determining patient needs and wishes, assessing family resources and preferences, facilitating

Figure 1
Systems Analysis of Discharge Planning Process



communication between patients and family members, deciding on PAC location, coordinating plans and paperwork among hospital personnel, and working with community agencies, institutions, and third-party reimbursement sources.

Incorporating these steps into a systems-analysis framework suggests a decision-making process with six key components, as illustrated in Figure 1, including: (1) screening for discharge-planning need; (2) assessing the patient's needs, preferences, expected prognosis, LTC financial resources, and prior use of formal and informal care, as well as family capabilities for caring for the patient; (3) choosing the appropriate PAC modality (e.g., nursing home versus rehabilitation) based on the assessment data; (4) choosing the specific PAC vendor; (5) implementing the PAC plan; and (6) evaluating the PAC plan after discharge from the hospital to assess whether needs have been met and patients are satisfied.

SCREENING

Not all elderly patients require extensive discharge planning. Screening can identify persons at high risk for requiring PAC service so that facilities can focus more intensive discharge-planning resources on these patients (Health Care Financing Administration, 1992). Two aspects of screening—criteria and methods—need to be investigated to improve the extent to which screening is systematic. Although screening criteria are crucial for identifying who will need discharge planning, there are as yet no good measures to accurately predict which patients will most likely need or benefit from more complex

discharge planning (Oktay et al., 1992). Criteria for defining high risk typically include: advanced age; living alone; decreased orientation; diagnosis of chronic conditions; nursing requirement, such as for medications or intravenous therapy; repeat admission in the past 6 months; and toileting problems (Rasmusen, 1984; Rehr, 1986; Terry, 1988). HCFA (1992) has mandated a revised version of the Uniform Needs Assessment Inventory (UNAI) to standardize data collection around discharges. At least a portion of this tool can be used for screening purposes to identify patients who are likely to need more extensive discharge planning. With the introduction of DRGs and hospital clinical pathways, the definition of "high risk" has expanded to include screening for patients who may require prolonged hospitalization (Peterson, 1988). Being at high risk for needing PAC is not necessarily congruous with being at high risk for prolonged hospitalization; these two situations may therefore require two different sets of screening criteria.

Methods of screening can be categorized into two types: identification and referral. Identification methods typically rely on scanning admission summary sheets to screen for patients who meet some threshold criteria that identify them as high risk (Rasmusen and Buckwalter, 1985). Patients may also be identified in discharge-planning rounds. Referral methods include health care professionals referring patients in need of discharge planning to the appropriate discharge-planning personnel, or referrals from family, outpatient sources, or the patient him- or herself (Hartigan and Brown, 1985). The strength of identification methods lies in being systematic. Well-specified criteria can be defined and applied with little variation across professionals. The weakness of identification methods is that indicator criteria and scoring rules are often simplistic (Rehr, 1986) and therefore do not capture the decision rules that people use to arrive at judgments. Studies of fairly simplistic algorithms for State preadmission screening for nursing home care need highlight the tradeoffs between false-positive and false-negative rates (Jackson et al., 1993). The less restrictive screening algorithms resulted in high false-positive rates, ranging from 0.74-0.82, with a corresponding false-negative range of 0.05-0.06. However, increasing the restrictiveness of the algorithm to reduce the number of persons eligible for nursing home care showed a large increase in the false-negative rate, rising to 0.31, while still resulting in a false-positive rate of 0.48.

The strength of referral methods is their use of human judgment to recognize different situations. The drawback of referral methods is the inherent variability among providers. Thus, the false-negative rate of referral methods may be high. Screening improvements need to combine the systematic benefits of identification methods with the expertise of referral methods. Nice (1989), for example, developed a screening protocol with points attached to each criterion, and total point cutoffs to identify patients at high, medium, or low risk of needing discharge planning. This approach entails eliciting from gerontology experts the factors they consider when screening, how they weight or combine the factors to arrive at a decision, and how the factors and weights vary depending on patient characteristics (e.g., disease-specific or unit-specific criteria).

Social judgment theory (Hammond, McClelland, and Mumpower, 1980) and decision analysis (Gustafson, Cats-Baril, and Alemi, 1992) provide structured methods for developing such protocols. These methods systematically identify both the criteria and weighting rules experts use to

arrive at judgments. These methods make implicit expertise explicit, highlight where there is variation among individuals in decisionmaking, and provide the basis for computerized tracking of decision accuracy. Research on decisionmaking has shown that the resulting computerized mathematical models of the experts' decisions will outperform the experts themselves (Dawes, Faust, and Meehl, 1989).

As hospitals invest in computer-based patient records, their ability to collect structured discharge-planning screening data and develop predictive algorithms will be greatly enhanced. This will facilitate the distribution of screening expertise among a patient's care team and help improve algorithm accuracy. The algorithms will also be able to be tailored to account for specific patient-population characteristics to improve sensitivity and specificity.

The site visits highlighted that screening for discharge planning still relies heavily on clinical judgment, with no site indicating plans to formalize this expertise through developing explicit sophisticated screening mechanisms. Thus, the diagnostic capability of screening remains unclear. There do appear to be a number of goals that screening is trying to achieve, including identifying patients who are at risk for long length of stay, patients who will need help after discharge from the hospital, and patients and families who need help coping. These goals likely have very different criteria that would trigger discharge-planning intervention, yet these criteria remain largely implicit. Identification methods of screening appear to still rely heavily on the limited information available in the admission summary, and one site that has tried to implement structured data collection by admitting nurses to assess discharge-planning needs was met with limited success.

The recent decreases in length of stay have led to the widespread implementation of prehospital screening. Many sites indicated that discharge planners are notified of planned admissions, which account for about 40 percent of Medicare admissions. Arrangements for PAC can then be set in motion with more patient involvement before hospitalization. As the patient's progress during hospitalization becomes more clear, the appropriate prearranged plan can be implemented. Another change brought about by shorter lengths of stay is the improvement in continuity of care by involving a patient's case manager at the time of hospitalization. At one site, case managers were responsible for checking hospital admissions daily using the computer network to see if any of their patients had been admitted. If so, case managers were responsible for calling discharge planners to provide information to coordinate care.

ASSESSMENT

Geriatric assessments are conducted for a variety of reasons, including the improvement of diagnostic accuracy, the selection of interventions to restore or improve health, the determination of the optimal environment for care, the prediction of outcomes, the monitoring of functional change over time, and the determination of eligibility for services (Kane, 1993). Factors assessed include physical, mental, and social functioning, support systems and family caregiving capabilities, financial situation and insurance coverage, patient and family desires about potential PAC modalities, environmental barriers in the patient's home, and services and providers used by the patient prior to hospitalization. The variety of domains that need to be assessed reflects the diversity of skills

needed for comprehensive assessment, although experts conducting assessment need not all be present simultaneously.

Assessment remains as much an art as a science. It can be conducted across the continuum of care by a variety of providers, including nurses, social workers, special geriatric teams, and case managers. Types of assessment methods range from unaided judgment to formal assessment tools, with data sources relying on interviewing the patient or family, reviewing the patient hospital record, or eliciting information from other care providers. Evidence suggests that there is wide variation in how assessments are conducted and that the lack of standardization of the terms and scales used to assess patient needs and preferences contributes to difficulties in communicating needs across care settings (Health Care Financing Administration, 1992; Kitto and Dale, 1985). A variety of instruments exist for formally assessing various aspects of functioning (Health Care Financing Administration, 1992; Kane and Kane, 1981; Rubenstein and Josephson, 1989), many of which have been used in national demonstration projects, although the extent to which they are used routinely in day-to-day discharge planning is unknown.

Informal assessment methods make it difficult to determine the criteria clinicians use when conducting assessments. Studies in decisionmaking across a variety of problem domains suggest that people tend to frame problem assessment in terms of potential alternatives, rather than exploring the criteria that should be used to judge potential alternatives (Hammond and Adelman, 1976). Discharge-planning decisionmaking may follow this same pattern. Wertheimer and Kleinman (1990) found that instead of focusing on the patient's current and potential functioning, discussions during interdisciplinary rounds focused on durable medical equipment, home health agencies, placement in LTC facilities, and insurance status. It took education and intervention to encourage providers to focus on patient needs; doing so resulted in increased referrals to rehabilitation therapies.

Improving the assessment step of discharge planning should involve three key areas: (1) better methods for capturing and utilizing assessment expertise; (2) databases that empirically evaluate what types of PAC work best for what types of patients; and (3) structured methods for assessing patient and family preferences and values. Expert geriatric assessment teams have been found to improve survival and function of older patients (Stuck et al., 1993). Similar to what was recommended in the discussion on screening, capturing this expertise in the form of computerized algorithms would help support the decisionmaking of clinicians who do not have access to geriatric assessment teams.

Even experts in assessment, however, lack empirical data regarding what types of PAC yield better outcomes for what types of patients. Structured information-gathering tools are a necessary prerequisite to develop systems to measure patient functioning and outcomes across an episode of care (Potthoff et al., 1994). Developing an empirical-outcomes database to support discharge-planning decisionmaking would combine structured assessment data with resource utilization data, functional outcomes data, and satisfaction data to help understand variation in patients, variation in the types of PAC resources they consume, and variation in outcomes. These systems will require assessments that use common language and measurement, such as the UNAI already cited, and a structured means for recording and sharing data across the continuum of care. Given that assessment occurs at all levels of care,

systems to monitor functioning and outcomes over time will have to incorporate continuity of assessment across the continuum of care to ensure comparable measurement (Phillips-Harris and Fanale, 1995). This lack of consistent assessment data has been cited as a key constraint in developing outcomes systems across the continuum of care (Kilgore, 1995).

Improving assessment will require more than structured data-gathering forms, however. It will require a means to ensure greater and more meaningful participation from patients and families. The extent to which patient and family values are assessed in everyday discharge planning is not well documented. Studies of discharge planning document that PAC decisions are often made by family or care professionals, rather than the patient (Coulton et al., 1982). Jewell (1993) found that most PAC decisions were made at case conferences, which patients and families did not attend (Jewell, 1993). Computerized methods using decision analysis for assessing patient values and preferences have been successfully applied across a variety of health care domains (Gustafson et al., 1992), and Kane (1985) has elicited patient preferences by means of a paper instrument used by case managers in the home.

None of the hospitals visited had implemented standardized patient assessment tools. Thus, the current state-of-the-art makes it impossible to determine how patient needs are driving choice of PAC modality. Virtually all of the discharge planners said that patients and families usually express a preference to be discharged home, and planners try their best to accommodate that request. Some sites indicated the option of allowing the patient to go home on a trial weekend basis for the family to get a sense of what caregiving will entail. It appears that more rigorous assessment of patient preferences and values is not a high priority, nor is it clear from the site visits how such assessment could be conducted efficiently without the use of computerized patient and family self-assessment tools. Assessing the patient's financial resources, primarily in terms of determining what insurance will cover, consumes a lot of discharge planners' time. Most sites indicated that they have not developed systematic information on what the various insurers in their area cover; the discharge planners develop their own expertise in this arena.

CHOICE OF PAC MODALITY

Once an assessment has been conducted, the discharge planner must translate the care needs and patient preferences into service needs and help the patient and family develop PAC options. Ideally, the decision about the best type of care would be based on information about the benefits and risks associated with different approaches. The assessment data would serve to classify the patient, and a database could be searched to yield information on how similar patients have fared under different treatment approaches. Preferences of patients (and perhaps their families) as to which outcomes should be used as the critical measures of effectiveness are essential. In this theoretical scenario, the patients and their families are the ultimate decisionmakers, and the professional discharge planners are the sources of information facilitating that decision. Reality is a long way from this model. Decisions in today's world are hampered by both the lack of adequate empirical information and restrictions on choices.

Data to inform discharge planning should compare the effects of alternative posthospital treatments for comparable

patients. It is unrealistic to expect to find any, let alone enough, randomized clinical trials. At best, such information will have to come from epidemiological studies that address these issues. Even these studies are difficult to conduct. The patients currently discharged to various destinations are not necessarily similar. Hence, it is more difficult to attribute outcomes to the effects of treatment as opposed to patient-related factors. (Ironically, if choices are more constrained under managed care, future research on outcomes may be helped, because patient factors will play less of a role.) To complicate matters, patients often progress through several different types of PAC during a single episode. Nonetheless, there are statistical methods available to begin to address these problems. Selection correction and optimization analyses can be used to relate outcomes to PAC venues if there is a commitment to collect the relevant data and to track the eventual outcomes (Kane et al., 1996; Kane et al., to be published-b). Policymakers will have to become involved in deciding how long after hospital discharge is the most salient period to assess these outcomes, but these decisions can be made only when the information is available in the first place.

The distinctions between assessment, patient needs, and options are not trifling. All too often, LTC needs are phrased as options (e.g., this person needs a nursing home). However, the patient may have medical conditions that need 24-hour care, with a variety of PAC options that could meet that need. Assessment translated into needs and PAC options is analogous to diagnosis and treatment. It will always be part art, but that does not preclude empirical study to determine how this decisionmaking process can be improved. Psychological models of decisionmaking have found that people often quickly focus on a narrow set of alternatives with little information search, especially when under time pressure (Janis and Mann, 1977). Hospitals are under financial pressures to discharge patients as quickly as possible under prospective payment. Thus, discharge planners cope with restrictive deadlines and inadequate resources when helping patients and families cope with crises (Blazyk and Canavan, 1986). Studies using decision analysis have found that generating alternatives factor by factor, and then synthesizing these alternatives, often results in unique solutions (Gustafson, Cats-Baril, and Alemi, 1992).

There are few studies investigating how discharge planners translate needs into options. A study of clinical decisionmaking at one hospital found that lack of caregiver availability strongly influences placement in an institution (Weaver and Bryant, 1990). Case managers at one social/health maintenance organization (S/HMO) used both client factors (e.g. age, medical condition, continence) and organizational factors (e.g., whether community services are full) when making judgments about risk of nursing home placement (Hennessy, 1993). Variation in case management care plans across four S/HMOs suggested reasons related to the roles various team members play in providing care, the intensity of services recommended, and the level of specialization of technology available (Abrahams et al., 1989). Variation in choice of PAC options appears to be a function of both individual-level factors (e.g., variation in client needs and variation in clinician decisionmaking) and organizational-level factors (roles, resources, structures, and goals within the organization).

Studies using large data sets find high degrees of apparent overlap in the types of patients going to various PAC modalities (U.S. General Accounting Office, 1986), but on closer examination, these patient

groups may differ considerably in terms of functional status both prior to admission and at the time of discharge. Those discharged to rehabilitation are generally not as severely physically or cognitively limited as those sent to nursing homes. The presence of informal care can influence discharges to home (Kane et al., 1996). Acuity levels of hospital patients admitted to Medicare skilled nursing facilities vary greatly by geographic location (Cornelius and Friedlob, 1986). In one large study, optimal PAC setting as measured by outcomes varied, depending on the DRG and type of treatment and the timeframe in which followup was conducted (Kane et al., to be published-b). We have much to learn regarding how care needs are being matched to modalities and the extent to which empirical data on PAC outcomes could make this translation more systematic.

Choosing a PAC modality is especially difficult because of the differing value structures of patients, families, and discharge planners. Ethical dilemmas arise when values conflict, for example when a patient does not want PAC services that the discharge planner feels are needed, or when there are disagreements over the discharge destination (Proctor, Morrow-Howell, and Lott, 1993). Conflict remains a normative phenomenon in discharge planning, often arising among family members as they readjust roles and relationships in the face of the crisis of illness (Abramson et al., 1993). Unfortunately, conflict usually focuses on differences over preferred alternatives, rather than addressing the underlying value structures driving those preferences (Hammond and Adelman, 1976). Elders' values and priorities often focus on self-identity and relationships, family members tend to value care and security, and providers weight care and health highest (McCullough et al., 1993). A key role of the discharge planner is to help patients and families bring the underlying conflicting issues into the open to help resolve them (Abramson, 1990).

Coulton (1990) argues that we need to investigate ways to help patients and families communicate more effectively about preferences. Decisionmaking literature cites many examples of such decision-support technologies. Sainfort et al. (1990) describe a computerized decision aid to help couples assess their preferences when choosing among alternatives. Kasper, Mulley, and Wennberg (1992) have developed video technology to help patients decide on the preferred treatment for prostate cancer. Gustafson, Cats-Baril, and Alemi (1992) have developed a computer-based decision support system to help patients and families make decisions around a number of health-related issues, including breast cancer treatment, stress management, and acquired immunodeficiency syndrome (AIDS). The development of decision-support systems for PAC decisions by patients and families should be encouraged.

Discharge planners wanting to give patients an opportunity to make scientifically sound decisions would find themselves bereft of resources. There is no database currently available that links modalities of posthospital care with specific outcomes, adjusted for patient risk factors (e.g., severity, comorbidity, functional status at discharge, prior history). A few studies, such as the Post-Acute Care Study conducted by the University of Minnesota for HCFA and the Assistant Secretary for Planning and Evaluation of the U.S. Department of Health and Human Services (Kane, 1994) have made important contributions to that end, but the results of those studies are not readily accessible for practical use.

None of the sites we visited collected systematic data on how patient needs and

preferences map into the modality of PAC finally chosen, nor had any of the sites ever studied the issue of variation between their discharge planners in mapping needs into options. One site's pathway for joint procedures contained recommended PAC modalities depending on patient functioning prior to discharge. The biggest obstacle mentioned by discharge planners in this phase was trying to develop an option that is financially feasible for the patient. They reported spending a lot of time on the phone "horse-trading" with insurance companies, trying to convince them to allow payment for needed PAC services or equipment. This negotiation was done on a case-by-case basis by the discharge planner, although one site has allocated this function to a specific person within their health plan. Centralizing this function has enabled the health care organization to track what types and how often certain types of requests have been made, and what the insurer response has been.

Interestingly, the source of conflict most frequently cited by discharge planners in this phase were external case managers the insurance companies are placing in hospitals. One hospital we visited is at financial risk for any hospitalizations under a carve-out contract with the insurer's Medicare risk product. Yet the insurer placed its own case managers in the hospital to manage the discharge planning of their insured patients, partly to steer the patients to the insurer's home health agency. This hospital viewed this arrangement as a conflict of interest and believed the insurer's case managers were underutilizing PAC, which put the hospital at risk. The hospital was in the process of setting up a tracking mechanism to determine if that insurer's patients did in fact have higher readmission rates.

CHOICE OF PAC VENDORS

Once the PAC modality (e.g., nursing home versus home health versus rehabilitation) has been chosen, a vendor must be chosen that best matches the patient's preferences. The decision at this point is quite different from that addressed in the earlier step. There is good reason to believe that different parameters will be salient here. Relevant attributes will likely include such things as quality of care, policies regarding privacy and patient autonomy, flexibility, geographic convenience, etc. Informed vendor choice by the patient and family requires the availability of a variety of information. Directories and computer databases identifying providers exist (Schwartz, 1989). However, these resources usually lack the level of information needed to make informed choices, such as data regarding quality of care, atmosphere, or personal amenities. It is unclear how much firsthand knowledge discharge planners have about specific vendors and the extent to which they share negative information about vendors with patients. Although useful data are routinely collected by State agencies, for example, on the number and types of citations a nursing home has received, these data usually are not easily available to patients and families.

People who have never dealt with a particular situation usually have not thought about their goals or factors they should consider when evaluating alternatives (Coulton et al., 1982; Dunkle et al., 1982). Patients and families are often encouraged to visit nursing homes, but it may be difficult for them to know what to ask or look for, and how to integrate the information obtained into a choice. The decision-support system of Gustafson et al. (1992) is an example of how computers can be used to help patients identify and combine relevant

attributes. This system helps women choose a breast cancer treatment option by using a combination of prespecified attributes along with user-specified attributes. The patient assesses preferences for these attributes, and the computer helps combine the information to show how the options match their preferences. Computerized decision-support technology combined with databases of vendors that contain more comprehensive vendor information should be developed to provide timely and relevant information and decision support to the patient and family.

This step is the one most likely to be influenced by managed care and by vertical integration. Both of these forces will reduce the options available, especially with regard to suppliers. Although a study based on the earlier described PAC study found little relationship with hospital ownership of various types of PAC and patients' discharge destinations (Blewett, Kane, and Finch, 1996), it seems reasonable to expect that patients will be selectively channeled into the facilities operated by the parent hospitals. In the case of managed care organizations, the restrictions are likely to be based on price. The discharge planner may thus find him- or herself in an untenable situation, pushed to act faster, given fewer options, and expected to give patients and their families at least the sense of meaningful participation in decisionmaking.

Without exception, the discharge planners we visited in managed care markets indicated that PAC ownership limits vendor choice. Furthermore, vertical integration does not always work as expected. In one large health maintenance organization (HMO) we visited, we were surprised to discover that despite the high level of theoretical integration in their care, each component of the system was being judged as an independent cost center. Thus, the contribution to overall improvements in outcomes or in savings counted less than the bottom-line accounting for each unit. Needless to say, the potential for investments in better care at critical junctures to save subsequent resources went ignored.

In providing information about vendors to patients, almost all of the discharge planners we spoke with viewed themselves as neutral providers of information when patients asked them questions. The discharge planners may have knowledge about quality among various vendors, but they did not feel it was within their role to divulge such information to patients and families. Many of the sites did have literature they shared with patients regarding what to look for when visiting a nursing home. Some sites had extensive literature, and in one case a computerized database, that they shared with patients regarding vendors and other resources for seniors in the community.

IMPLEMENTATION OF PAC PLAN

Implementing the PAC plan requires providing patient and family education, determining whether the preferred provider has available space, transferring relevant patient information to the PAC provider, and making arrangements for physical transfer of the patient. Discharge-planning expertise needed includes knowledge of effective patient and family education in self- and informal care, and skills in making arrangements and transferring information and care to the PAC provider.

Patients and families must develop skills and knowledge to manage self-care after discharge from the hospital. Because of lack of experience, family members often overestimate their caregiving capabilities, and may be setting themselves up for failure without adequate support. Patients have a multitude of concerns, including

understanding their progress, activity, insurance, medication, pain control, and when to consult a physician (Boyle, Nancy, and Passau-Buck, 1992). Most persons are told these things before discharge. However, these instructions are often verbal, or contained in a pamphlet. Information cannot be easily absorbed in a condensed form, especially in times of high stress. Systematic methods to improve patient and family knowledge and skills should be expanded. Intensive, structured, hands-on education over a 48-hour period prior to discharge provides potential caregivers with realistic expectations about their caregiving capabilities (Shivley, Djupe, and Lester, 1993). The computerized decision-support system of Gustafson et al. (1992) provides patients and families with "personal stories" by others who have been through similar situations. A database of experiential stories provides patients and families with insights regarding potential problems and coping skills.

The transition of care requires a timely flow of relevant information to the PAC provider (Bass, 1978). Telephone and handwritten information transfer are still common, although computerized generation of transfer information is increasing. Prophet (1993) describes a computerized discharge referral system that automatically incorporates data from a variety of disciplines during the hospital stay to support discharge planning and provides a computer-generated paper summary that is sent to the appropriate PAC facilities and agencies. Feedback from the recipients of the summary is that it consistently provides more complete data that are essential, concise, and legible. The system supports discharge planning across all phases of the process, including an online directory of facilities and agencies, and on line mechanisms to request and acknowledge patient transportation arrangements that require a hospital vehicle. The standardized discharge referral summary is a natural byproduct of the system.

As computer networks evolve to electronically link community health care providers, their capabilities to improve continuity of care in the implementation phase of discharge planning should be exploited. This will require an understanding of the types of decisions acute and PAC providers make in the short and long term, and the implications this has for information needs as the patient moves along the continuum. Information-needs analysis helps identify what needs are common across the continuum and should be accessible regardless of setting, and which information is needed only locally within a given institution. Ensuring continuity of care between acute, post-acute, and community-case managed care remains an area that hospitals are trying to improve. At all sites with community case managers, it appeared that if the patient was referred to home health or a nursing home, the hospital's community case manager would not become actively involved again until those phases of PAC were completed. Yet structured mechanisms for ensuring continuity of transfer were not well formulated in some of the sites. One hospital had developed structured criteria to be used by discharge planners and emergency room personnel that should be used to trigger community case management, along with information flow by means of paper forms to both the community case management department and the home health agency. None of the sites visited had the capability to transfer information to the PAC provider electronically, although a few of the sites said they would have the capability for PAC providers. Many of the sites had developed structured forms or computer printouts that were sent to the PAC providers.

Sites varied in how roles are organized

regarding the responsibility for PAC implementation, although a common theme is that the increase in medical acuity at discharge and implications for PAC have driven nurse and social work implementation teams because of the two distinct types of expertise each brings to the process. For example, at one site, the patient's nurse makes arrangements for home health care in collaboration with the social worker on the unit, while a totally different social worker-nurse team will take care of arrangements to nursing homes. This arrangement has allowed the specialized team to develop close working relationships to build trust with the nursing homes. This strategy was developed because nursing home beds are in low supply, and the specialized team feels that personal relationships with the various nursing homes increase the likelihood that the patient will be accepted.

EVALUATION OF THE PAC PLAN

Systematic followup of patients after hospital discharge is essential to develop empirical data to improve discharge planning. Data regarding unmet needs, outcomes, and satisfaction with the discharge-planning process and PAC services needs to be collected from both patients who received extensive discharge planning and those who did not. This requires knowledge of how to gather, aggregate, and analyze information to improve the discharge-planning process. This step is increasingly important as length of stay has decreased and patients are discharged with greater needs and instability (Coulton, 1988).

Such followup is rarely conducted (Health Care Financing Administration, 1992). Kadushin and Kulys (1993) report that social workers spend little time on followup activities to monitor patient progress, and Wacker, Kundrat, and Keith (1991) report that followup was not conducted in a majority of the 16 hospitals they studied. Wimberley and Blazyk (1989) report challenges in getting hospital social workers to recognize the importance of collecting and analyzing posthospital patient data to improve the discharge-planning process (Wimberley et al., 1989). Studies on the adequacy of discharge plans are also troubling. Oktay et al. (1992) found that social workers rated their plans as generally adequate, while acknowledging that in a large percentage of these cases, the plans would not withstand many changes in the patient's condition, the family support system would prove inadequate, or the patient would be unable to manage the regimen because of cognitive or physical limitation. Mamon et al. (1992) report that of the 919 patients they followed up on, 97 percent reported one or more needs for care and 33 percent reported that at least one of these needs was not being met.

Well-designed computerized information systems will be critical for efficient followup and data analysis systems. Wimberley and Blazyk (1989) describe a hospital-based case management system developed in cooperation with the Houston-Galveston Area Agency on Aging (Wimberley et al., 1989). The system allows hospital discharge planners to automatically cue followup dates into the computer and set the frequency and content of patient contacts. They use the system to aggregate data and conduct case-mix-adjusted analyses. Such systems will be crucial if new payment methods to address adverse incentives in the current DRG reimbursement system are implemented. Bundling of payment for both the acute and post-acute phases of care has been proposed as a payment mechanism to formally recognize their interdependence and to provide more hospital accountability for

the PAC episode (Kane et al., 1993). It will be imperative for hospitals to implement systematic followup tracking and evaluation to ensure optimal patient outcomes.

Augmenting such systems with improved methods for measuring patient and family satisfaction with the discharge-planning process will be necessary to systematically identify how to enhance patient-directed discharge decisionmaking. Coulton, Dunkle, and Chun-Chun (1988), for example, identified six factors that highlight the multidimensional nature of patient perceptions of the discharge-planning process. They also have identified how patients' perceptions of and desire for decisionmaking control affect posthospital anxiety (Coulton et al., 1989). Such studies provide direction for important factors to integrate into discharge-planning evaluation systems.

Although most sites we visited indicated that they are increasingly contacting patients after hospitalization because of clinical pathway implementation, these efforts had not yet been well integrated into monitoring discharge planning. Some sites have implemented quarterly meetings of hospital, community, and outpatient clinicians, including discharge planners, to develop better mechanisms to improve continuity of care. Most sites have implemented either periodic or ongoing patient satisfaction surveys, some of which are targeted specifically to discharge planning. These sites also said they receive informal feedback from patients regarding satisfaction with the particular nursing home or other agency the patient was using after discharge from the hospital. None of the sites have ongoing systematic evaluation of unmet needs after hospitalization between those that did and did not receive discharge planning. Most hospitals said they track hospital readmissions, however, systematic data collection is focused only on those who are readmitted.

DISTRIBUTED DECISIONMAKING IN DISCHARGE PLANNING

Although useful for assessing the state-of-the-art and science of discharge planning, the systems-analysis perspective does not capture the tremendous changes that have occurred in hospital discharge planning in response to environmental pressures, nor does it capture the dynamic nature of the decisionmaking process. All sites we visited have undergone tremendous changes in discharge planning in response to environmental pressures. These pressures have shaped how the hospital organizes processes and roles, which in turn are shaping individual behavior of all the players in the discharge-planning process. The literature has not kept up with the rapid changes occurring in discharge planning. Managed care has clearly changed how discharge planning is organized and practiced. Adoption of a product-line focus has resulted in increased development and use of pathways for their high-volume and high-cost procedures, with discharge planners using the hospital's targeted pathway length of stay, or Milleman/Robertson guidelines to track patient progress toward targeted discharge. In addition, new roles have emerged to monitor patient progress on the pathway. Termed an "internal case manager," the role of this job is to work with patients, physicians, and unit nurses to ensure that the patient stays on the pathway for timely discharge. These roles are typically filled by nurses, because keeping patients on track involves fairly sophisticated clinical knowledge. Utilization managers are also used to monitor patient progress, although they typically work

with the patient chart, checking to make sure tests and diagnostic procedures are completed in a timely fashion. Hence, there are a myriad of roles that are all trying to ensure timely discharge.

These increasing roles have caused a number of hospitals we visited to reorganize utilization management, internal case management, and discharge planning under one organizational unit. These units typically are named "Continuity of Care Planning" or "Transitional Care Planning." Much effort is being devoted to trying to allocate roles among these different personnel. One organization that was undergoing this change at the time of our visit indicated discomfort among the social work discharge planners regarding what their new role in the reorganization was. However, nurses and social workers at other sites we visited indicated that working in the same department has allowed them to better recognize the unique skills each brings to the discharge-planning process. The increasing acuity at discharge requires nursing expertise, while social workers provide more extensive knowledge of reimbursement and regulation.

How discharge-planning roles in hospitals are differentiated is also being driven by how capitated payments are being allocated within the organization. One site has found it much more effective to allocate hospital discharge planners by its HMO clinics, rather than the more traditional unit-based approach. Thus, when a clinic's patient is admitted to the hospital, that clinic's discharge planner assumes responsibility for discharge planning. This has changed how the discharge-planning role is perceived by the clinic staff, who now view the discharge planner as helping them to manage the slice of the capitated amount they get from the HMO for their panel of patients. It has also increased the discharge planner's knowledge about the practice patterns of physicians within the clinic, enabling more effective teamwork. The title "discharge planner" at this site has been changed to "clinic liaison" to reflect this new role. Another site we visited with its own Medicare risk contracting also indicated it was moving to this model because it felt this would improve discharge planning.

Other hospitals have tried to standardize various aspects of discharge planning by delegating specific roles to specific individuals. For example, at one site all nursing home arrangements are made by a core team of three people, while at another site, all inquiries regarding insurance benefits or special requests to cover a non-benefit or equipment are funneled through one person. In many hospitals, social work discharge planners have been integrated into outpatient settings to assist in social assessments of elderly in the home. In other hospitals, discharge planners are also assuming more traditional case management activities for targeted diagnostic categories (e.g., human immunodeficiency virus/AIDS) once the patient leaves the inpatient setting. In spite of a rise in community case management for frail elderly, it appears that hospital discharge planners continue to coordinate discharge planning from hospital, with input from the patient's community case manager. The reason given for this arrangement is that the timeframe for discharge planning is so tight that it requires a person in the hospital to ensure timely discharge.

The biggest new role conflict identified is between hospital discharge planners and case managers placed by insurers in hospitals to serve the discharge-planning function for their insured patients. This conflict appeared to be particularly acute in hospitals

that have contracts with insurers that place them at financial risk, yet they lose control over the discharge decisions.

The major frustration discharge planners expressed involved the amount of time spent trying to develop plans that meet patient needs within tight financial constraints. Although bundling the acute and post-acute payments would help alleviate this issue, discharge planners indicated it would likely raise another troublesome issue. They indicated that many elderly do not understand their Medicare benefits. If they are told that they are covered for certain PAC services, they may assume they are entitled to it even if the discharge planner does not feel it is medically necessary. Patients may misconstrue bundling to imply an automatic right to PAC services because it is "already being paid for."

The site visits also highlighted the dynamic nature of the discharge decisionmaking process. Similar to the findings of Mintzberg, Raisinghhani, and Theoret (1976) on strategic decisionmaking, the discharge-planning process appears to be a cyclical, diffuse decisionmaking process. Based on descriptions from discharge planners, the process cycles between options, assessment, investigating authorization, cycling back to options, etc. The discharge planner is managing roles and relationships with an increasing number of people as the process of care changes in response to a managed care environment. We had the fortune (or misfortune) of visiting one of the sites on a Friday afternoon and witnessed firsthand the "beeper" nature of the job. (Discharge planners were regularly beeped to respond to some crisis.) The beeper phenomenon was also verified at two of the other sites. Phone conversations would ensue, with decisions evolving out of discussions with whomever was on the other end of the telephone line. It became apparent that decision points in the process may be hard to identify, and it will take ethnographic studies to understand how decisions are being made, when they are being made, and by whom they are being made in this new environment. The discharge-planning process is extremely task-oriented under severe time constraints, with little time to systematically analyze how to improve the decisionmaking that occurs in its various steps. How to engineer structured improvements into everyday discharge-planning activities remains a fundamental challenge.

The distribution of an episode of care across multiple settings has resulted in multiple iterations of discharge planning in hospital and post-acute settings. This makes it difficult to understand how continuity is maintained across the continuum of care and how roles, tasks, and information interrelate through these transitions. The sites we visited are trying hard to better coordinate their efforts. One example is the site that has implemented quarterly meetings of clinicians and discharge planners to try to identify system structures that contribute to care discontinuities. Part of the problem is that we really do not understand how discharge planning is or should be different across the settings and how the efforts across the continuum should interrelate. For example, discharge planners indicated that community case managers need to develop different strategies compared with hospital discharge planners, because patients exert a lot more control and autonomy once they are in their own homes. Discharge planning from nursing homes has taken on increased importance as more patients are transferred there for recuperation. However, most studies of discharge planning in nursing homes have focused on identifying patient characteristics that separate those who are at risk for long versus short stays on admission (Kiel et al., 1994;

Liu, McBride, and Coughlin, 1994; Murtaugh, 1994).

Thus, although a decision-sciences framework is very useful for identifying decisionmaking phases, models to investigate discharge planning as a dynamic distributed organizational process will need to be adopted. This approach studies the supporting processes that run parallel to the central decisionmaking phases. These processes include decisionmaking control processes, communication processes, and political processes (Koopman and Pool, 1991). Feedback delays, feedback interruptions, and feedback loops are an integral part of organizational decisionmaking (Argyris, 1976; Bjorkman, 1972). As our review of discharge planning makes clear, the implicit nature of the decisions made, the lack of data to relate decisions to outcomes, and now the distribution of the episode of care across multiple sites, have created an environment in which feedback mechanisms necessary for organizational learning are minimally present at best. Studies of dynamic decisionmaking have shown that feedback delays and potential decision-side effects strongly affect decision performance (Brehmer, 1992).

Interrelated bodies of organizational literature relating to roles, distributed decisionmaking, and computer-supported cooperative work will yield fruitful avenues to develop new models for studying and improving discharge decisionmaking across the continuum. The notion of using the concept of roles in studying discharge planning is not new. Many articles about discharge planning have focused on roles (Kruse, 1985) and role conflicts (Mizrahi and Abramson, 1985). What we need to understand, however, is the relationship between the roles people assume and the resulting cognitive processes that ensue (Roos and Starke, 1981; Pattison, 1994). A person's location in a social network has an impact on the information they receive and their patterns of social interactions (Pattison, 1994). The site we visited that aligned the discharge planners with their clinics rather than by hospital unit reported that physicians' perceptions about the discharge planner's role fundamentally changed. This was explained in part by the fact that the discharge planners had much more detailed knowledge about how each of the physicians practiced medicine. We suspect that it also was caused in part by the physician's improved knowledge of the expertise of their discharge planner; they know the unique expertise of "their" discharge planner that they can rely on, not the generic skills of discharge planners in general.

Studies in distributed decisionmaking have focused on how to distribute parts of problems or activities to various people while trying to maintain information and resource connectedness among them (Roberts, 1990). This stream of research has led to the concept of collective mind (Weick and Roberts, 1993). Collective mind is not the aggregate knowledge of individual members, but rather how patterns of behaviors, processes, and methods interrelate among participants to achieve organizational tasks and activities with minimal error. Studies of high-reliability organizations with respect to distributed decisionmaking have identified the need for shared representation; that is, each participant must have an accurate representation that includes the actions of others and their relations. This enables joint activities to assist and supplement each other. Heedful communication is needed to convey information necessary to take joint action. These issues have become especially salient in discharge planning as the episode of care has become distributed in time and space. Shared representation of the patient across

the continuum by all involved parties, including the patient and family, needs to be coordinated in a way that maximizes patient potential. Without this shared representation, it is likely that continuity of care will be compromised. Research on computer-supported cooperative work has investigated how computer technology should be leveraged to achieve such shared representation (Greenberg, 1991). Design of computer-based patient records will need to draw on this research to ensure that the cast of players in the multiple discharge-planning processes across the continuum of care all share congruent goals and understanding of the trajectory of the patient.

DISCUSSION

The nature of discharge planning has changed under payment reforms and will continue to change. Much of the pressure will come from the incentives most starkly felt. At the moment these incentives press for rapid action with fewer concerns about the ultimate consequences of the decisions made. The changes called for under the Balanced Budget Act of 1997 should give hospitals new motivation to take a longer perspective. Discharges to PAC for at least 10 conditions (still to be named but likely to be those that account for most PAC) will be treated as hospital transfers. Hospitals will be responsible for the costs and will be paid by Medicare for the PAC at a rate not to exceed "the sum of 50 percent of the regular transfer payment and 50 percent of the regular DRG payment" (Balanced Budget Act, section 4407). Once hospitals become responsible for the continuing care of their discharged patients, they should be motivated to make better decisions. A major problem is that even motivated discharge planners face a dearth of useful information. Motivation is a necessary but insufficient condition. Better, more systematic information needs to be collected and analyzed. Uniform data collection represents a good first step.

Viewing discharge planning as part of a continuing process rather than simply a discrete event can expand opportunities for effective care. For example, several institutions have tried using nurses or nurse practitioners as case managers to follow up with discharged patients, especially those sent home, to be sure that they were following instructions and that their needs were met. The experience has been mixed. Some report great success with indications that the costs involved were more than offset by subsequent savings (Rich et al., 1995). Others, however, were unable to show an effect on emergency department utilization or rehospitalization, although the patients were more likely to have outpatient appointments scheduled at discharge (Einstadter, Cebul, and Franta, 1996).

Discharge planning is a complex decisionmaking process that requires expertise, skills, and tasks that vary greatly across the steps of the discharge-planning process and are distributed among the patient and family, and a myriad of clinicians. To improve the quality of the discharge-planning decisionmaking process, it is imperative that this expertise be recognized, elicited, and modeled. This will provide formal tools for less expert clinicians to recognize when complex discharge-planning expertise is needed, as well as provide data needed to understand the link between discharge planning, patient outcomes, and patient satisfaction. It should also enhance patient and family participation in discharge-planning decisionmaking.

Empirically based discharge-planning systems will require integrating structured discharge-planning data (e.g., screening,

assessment, service needs, patient preferences, followup data) at the patient level for computer aggregation and analysis. A key challenge will be developing methods for collecting structured data as part of the routine assessment and documentation process. One approach that has been successful in the behavioral health care setting is the integration of structured data collection as part of daily clinical activities to avoid duplication in documentation (Potthoff et al., 1994). Adopting this approach in the discharge-planning process could be done by integrating structured discharge-planning screening, assessment, and followup tools into existing forms, such as nursing assessment forms, clinical pathways, and discharge summary forms. As hospitals implement clinical bedside information systems, a key design feature should be to exploit the technology to easily capture, integrate, disseminate, and aggregate information needed for improving discharge planning.

It is important to distinguish the different types of decisions patients and families are called on to make in the course of discharge planning. Because the entire process is often telescoped, the decisions about modality of care are often presented in the context of available options, although these decisions should best be rendered separately. Different elements are relevant to each. Modality choices revolve around issues of effectiveness and risk/benefit estimates. Vendor choices rely on issues of access, ambiance, and style, as well as quality.

Developing decision-support technologies for the patient and family around discharge-planning decisions will require overcoming several hurdles. Time pressures, illness, and stress make the hospitalization phase one of the worst times to be making major decisions. Since the era of DRGs, shortening Medicare hospital stays has become a passion. Good decisions take time. That time is often unavailable. One strategy is to begin the process earlier. Hospitals that conduct preadmission screening for planned hospitalizations should use this window of time to provide information and decision support to the patient and family. Options could be developed by the patient and family prior to hospitalization, with the final choice made once the patient's course of recovery becomes clear. For many patients, however, their course is not easily predictable. Prior planning may not fit the exigencies of the situation. In some instances, it may make more sense to temporize. Transfers to so-called "transitional care" are already being used to continue the recuperative process. For selected complex cases, these sites may also prove useful in permitting the more careful consideration of the full range of treatment possibilities before a move has been made that will foreclose options.

We currently lack empirical data on how patients and families make discharge-planning decisions, their frustrations in making these decisions, and what types of care are most effective for which types of patients. Good decisions require data as well as structure. Such data will be crucial if we are to develop better patient and family-directed decision-support technologies. A key role of the discharge planner is to provide that structure, taking the patient through the steps that will maximize the probability of an informed decision. The six-step process outlined here can serve as a template for better decisionmaking. Although external pressures may make it impossible to implement each component as fully as recommended, even attending to the structure should improve the way discharge decisions are made.

The systems analysis process, however, does not capture the dynamic nature of discharge planning, especially across the continuum of care. It must be augmented by new conceptual models if we are to understand how to improve discharge planning as an organizational distributed decision-making process.

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