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Establishing a New Research Agenda for Studying Psychiatric Emergency Room Treatment Decisions

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With the growing complexity of treatment decisions made at presentation to a psychiatric emergency room (PER) and the increasing influence of managed care on the decision-making process, it is increasingly important to establish a new and more sophisticated research agenda for studying PER decision making. The main goal of this paper is to propose a comprehensive conceptual model of the PER decision-making process that will facilitate active pursuit of such a research agenda. The proposed model presents both traditional and emerging elements of the PER decision-making process (i.e., determinants, mediating mechanisms, and outcomes) and explicates the nature of the relationships among them at different levels of analysis. The model's theoretical and empirical implications for future research are discussed and suggestions are made as to the research designs and methods needed to pursue this agenda.

KEY WORDS: psychiatric emergency rooms; decision-making; managed care; mental health services; research.

INTRODUCTION

Psychiatric emergency rooms (PER) are commonly perceived as an important point of entry to the mental health care system (Allen, 1999; Gerson & Bassuk, 1980; Marson, McGovern, & Pomp, 1988). PERs were initially established with the intention of preventing unnecessary hospitalization and rehospitalization of presenting patients (Solomon & Gordon, 1986). Therefore, their role in the mental health care system was predominantly one of triage, that is, rapid evaluation, containment, and referral (Gerson & Bassuk, 1980). Over recent decades, the triage model has been gradually replaced by more comprehensive services that still serve the triage function but are also capable of providing comprehensive assessment and a broader range of emergency interventions (Allen, 1999; Cross, 2000). Mobile crisis teams, holding beds, access to emergency medications, and medical evaluations are a few examples of the range of services available through PERs (Cross, 2000). Research indicates that the number of visits made to PERs has increased dramatically in recent decades (Claassen *et al.*, 2000); therefore, there is little doubt that the assessment of presenting patients and decisions about course of treatment made by PER staff play a key role in the subsequent care of many individuals in the mental health care system (Allen, 1999; Rabinowitz *et al.*, 1995).

There are several reasons for establishing a new research agenda for studying PER treatment decisions. One reason is the growing complexity of PER treatment decisions themselves. Past research has typically conceptualized treatment decision as a dichotomous variable (i.e., hospitalize or not), although in practice other treatment alternatives were available (Marson *et al.*, 1988). During the 1960s and 1970s, this operationalization of PER treatment decisions was adequate because treatment decisions made by PER staff primarily involved the consideration of

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whether or not the severity of the patient's problem warranted hospital admission (Holmes & Solomon, 1981; Marson *et al.*, 1988). Since then, however, PERs have increasingly provided presenting patients with access to a comprehensive array of psychiatric services including hospitalization, discharge to overnight facility with outpatient referral, outpatient referral, referral to a partial hospitalization program, and referral to another hospital (Allen, 1999; Cross, 2000). Therefore, by continuing to conceptualize treatment decisions as a dichotomy (for an exception, see Slagg, 1993), researchers may overlook valuable insight into the process that links treatment decisions to various determinants and outcomes (Marson *et al.*, 1988).

A second important reason for a new research agenda is the increasing role of managed care in mental health services delivery. In recent years, the multidimensionality of treatment decisions has become more evident because of the health care delivery system's emphasis on reducing the cost of services provided. This emphasis impacts PER decision making in several ways. First, the treatment decision made at presentation to a PER involves not only the consideration of appropriate treatment but also its cost effectiveness. Consequently, cost-effective treatment alternatives to hospitalization may receive greater weight in treatment decision making than it did previously (Breslow, Erickson, & Cavanaugh, 2000; Rothbard & Schinnar, 1996). Second, the gatekeeping role of managed care organizations (MCOs) requires that MCO representatives approve treatment decisions made by PER staff. This procedure may affect treatment decisions by increasing the number of health professionals that are involved in the treatment decision-making process, by redefining eligibility of certain patients to specific types of treatment (Schuster, 1995), or by increasing the length of psychiatric evaluations. Finally, MCOs seem to have facilitated changes in the demographic mix of patients presenting to PERs. Most notable of these is the increase in the number of children and substance abusers presenting to PERs in recent years (Breslow *et al.*, 2000).

Besides the growing complexity of treatment decisions and the role of managed care, the need for a new and more sophisticated research agenda of PER treatment decisions is merited by the growing number of studies that examine neglected aspects of PER decision making. In the past, research on PER decision making has focused predominantly on identifying factors that influence treatment decisions made at presentation to a PER (Gerson & Bassuk, 1980; Marson *et al.*, 1988; Rabinowitz *et al.*, 1995). Recent studies have gone beyond this to demonstrate that factors such as patient compliance with treatment (Benander, 1996; Binning, 1999; Solomon & Gordon, 1987) and type of linkage mechanism (e.g., formal and informal arrangements between facilities; D'Aunno, 1997; Friedmann, D'Aunno, Jin, & Alexander, 2000; Samet, Saitz, & Larson, 1996) are important mediating mechanisms between treatment decisions made at presentation to PER and their outcomes both at the patient level and the system level. Hence, it is critical to more precisely explicate the various ways through which treatment decisions and their respective outcomes are linked.

The main goal of this paper is to integrate both traditional and emerging components of PER decision making into a comprehensive research agenda for the study of PER treatment decisions as well as their determinants and outcomes. The conceptual model of PER treatment decisions proposed here considers a wide range of potential determinants of PER treatment decisions and explicates various ways through which these decisions may impact both patient-level outcomes and system-level outputs. Particular attention is given to the nature of the relationships among the model's components while pointing to those elements that have been extensively studied to date and those that, for the most part, are left unexplained. Finally, the model's theoretical and empirical implications for future research are discussed and suggestions are made as to the research designs and methods needed to pursue this agenda.

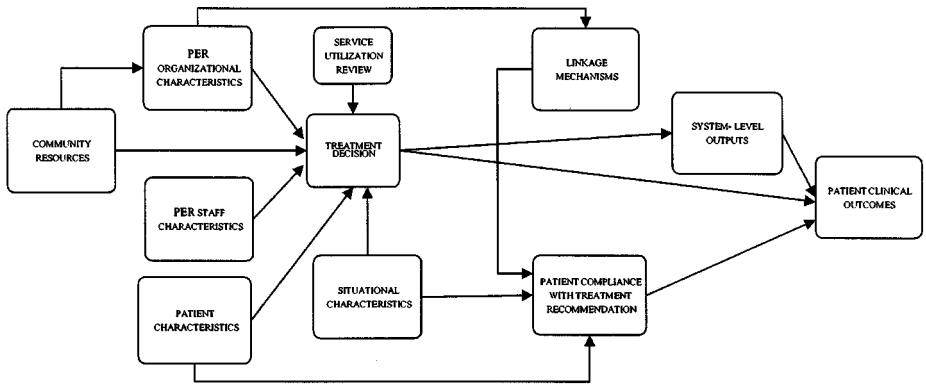
REVISED MODEL OF PER DECISION-MAKING

Figure 1 outlines the components of the suggested theoretical model of PER decision making and the relationships among them. More details on each of the model's components are included therein.

Determinants of PER Treatment Decisions

Community Resources

Community resources, such as the number and capacity of inpatient and outpatient facilities in the community and available medical technology, have been continuously found to influence treatment decisions both directly and through their effect on the organizational characteristics of PERs (McGlynn,



Community Resources
- Number and capacity of treatment facilities
- Available treatment options
- Available medical technology

Patient Characteristics
- Psychological characteristics (e.g., level of psychosocial functioning, clinical symptoms at presentation, previous clinical history)
- Demographic characteristics (e.g., age, sex, race, marital status, level of education, income, employment status)
- Health insurance coverage
- Social circumstances (e.g., voluntary vs. involuntary admission, social support)

PER Staff Characteristics
- Demographic characteristics
- Training and skills
- Years of experience
- Previous experience with MCO
- Previous treatment decisions
- Team decision vs. individual decision

PER Organizational Characteristics
- Available resources at PER (e.g., patient capacity, occupancy rate, staff-patient ratio)
- Staff mix and organizational structure
- PER formal policy
- PER organizational culture (norms, values, perceived objectives, etc.)

Situational Characteristics
- Time of day
- Day of week

Service Utilization Review
- Review took place or not
- Initial treatment decision approved or not

Treatment Decision
- Hospitalize
- Discharge with outpatient referral
- Overnight facility
- Referral to another hospital
- Partial hospitalization program, etc.

Patient Compliance with Treatment
- Personal beliefs and attitudes
- Clinician-patient communication
- Social support

Linkage Mechanism
- Formalized arrangements between referral sites
- PER interventions (e.g., reminders, transportation)

System-Level Outputs
- Cost of mental health care
- Service utilization
- Rate of rehospitalization

Patient Clinical Outcomes
- Severity of problem
- Level of psychosocial functioning
- Quality of life
- Coping abilities

Fig. 1. Proposed conceptual model of psychiatric emergency room (PER) decision-making.

Norquist, Wells, Sullivan, & Liberman, 1988; Olfson & Goldman, 1996). For example, a PER clinician's choice of suitable treatment option for a presenting patient is contingent upon the quantity and quality of available treatment options in the community (Olfson & Goldman, 1996). In a similar way, the number and capacity of treatment facilities in a community is likely to affect the available resources at a PER, which in turn is likely to influence the treatment decision made by PER staff (McGlynn *et al.*, 1988). Although community resources are a macro-level factor that is assumed to systematically influence the delivery of services system-wide, more research is needed to test this assumption.

Patient Characteristics

A useful framework for considering the different levels at which patient characteristics reflect on treatment decisions has been suggested (Anderson & Eppard, 1995). Andersen & Newman's (1973) behavioral model of access to medical care considers patients' predispositions such as psychological characteristics, demographic characteristics, and social circumstances as determinants of access to medical care. Psychological characteristics speak to the patient's mental status when presenting for care. In the context of PER decision making, researchers have consistently identified psychological characteristics to be an important determinant of treatment decisions made at presentation to PER (Engleman, Jobes, Berman, & Langbein, 1998; Friedmann *et al.*, 2000; Holmes & Solomon, 1980; Meyerson, Moss, Belville, & Smith, 1979; Rabinowitz *et al.*, 1995; Segal, Egley, Watson, & Goldfinger, 1995; Segal, Watson, Goldfinger, & Averbuck, 1988; Slagg, 1993; Way, Evans, & Banks, 1992). Variables found to predict psychiatric hospital admission include patient's psychotic symptoms,

active suicidal or homicidal ideation or both, impulsivity, dangerousness to self and others, frequency of previous hospitalizations, previous psychiatric treatment, and history of substance abuse. The impact of these variables is consistent with the theoretical expectation that the patient's clinical needs determine the decision regarding the best course of treatment for crisis resolution (Holmes & Solomon, 1981).

Patient's demographic characteristics such as age, gender, race, and ethnicity seem to have ambiguous influence on treatment decisions made at presentation to PER (Rabinowitz *et al.*, 1995). The inconsistent findings regarding the weight of patient sociodemographic characteristics in PER decision making are largely a function of different definitions of variables such as age, gender, and race (Aday & Awe, 1997). Some researchers use these variables as indicators of important genetic differences (Anderson & Eppard, 1995), whereas others treat these variables as surrogates of social and cultural factors such as socioeconomic inequality, differential beliefs about treatment, and social cues for "labeling" patients in certain ways that reflect on their need for treatment (Holmes & Solomon, 1981; Rabinowitz *et al.*, 1995). Therefore, although sociodemographic characteristics are an integral component of the suggested PER decision-making model, it is important that researchers specify the hypothesized mechanism (i.e., genetic or social) through which sociodemographic variables are expected to influence PER decision making.

In addition, recent trends in the demographic mix of patients presenting to PERs (i.e., increased number of substance abusers and children) suggest that treatment decisions may be influenced by these overall population trends. In other words, the impact of patient demographic characteristics on PER decision making may be more apparent in the way treatment decisions are made system-wide, in which case, a system-level analysis is better equipped to uncover this impact. Thus, for example, a large increase in the number of presenting substance abusers within a certain community may force PER staff to modify their routine practice in a way that caters to this change in client mix. This change, however, would not be evident in other communities, suggesting that the effect of patient population trends is limited to this particular community.

It is also worth noting that recent studies (Engleman *et al.*, 1998) suggest that sociodemographic characteristics may be a good measure of structural access to care, namely, the availability of health insurance to the patient. With the growing role of managed care in the delivery of mental health services, it is reasonable to expect that the type of health insurance (e.g., private, public, fee-for-service, managed care) will increasingly affect the treatment decision made in the PER (Breslow *et al.*, 2000). Thus, the effect of sociodemographic characteristics on treatment decision may not be direct but rather mediated through eligibility for health insurance.

Finally, an important aspect of patient characteristics is the social circumstances surrounding presentation to PER. For one, the level of coercion that is involved in a patient's presentation to PER can affect the treatment decision made by PER staff (Lidz, Coontz, & Mulvey, 2000; Pescosolido, Gardner, & Lubell, 1998). Andersen and Newman's (1973) behavioral model of access to care assumes that treatment for mental health problems is voluntary. In contrast, other researchers who focus on the legal aspects of admission highlight the role of civil commitment as an important factor in PER decision making (Lidz *et al.*, 2000; Segal *et al.*, 1988; Watson, Segal, & Newhill, 1993). In particular, studies have shown that there is a strong tendency of physicians to admit a patient who is brought in to the PER by police (Lidz *et al.*, 2000; Segal, Watson, & Akutsu, 1996; Watson *et al.*, 1993). In addition to the presence of formal social agents (e.g., police, mobile crisis unit, social workers, clinicians), treatment decisions are also influenced by the presence of informal social support, such as family members or friends (Engleman *et al.*, 1998; Holmes & Solomon, 1981; Lidz *et al.*, 2000). More specifically, PER staff are more likely to seek alternative options to hospitalization when social support to the patient is present. Following Lidz and his colleagues (2000), it seems useful to distinguish among three categories of social circumstances: (1) presence of formal agents, (2) presence of family and friends, and (3) self-referral. These researchers have shown that treatment decisions vary across these categories but, in the absence of additional evidence, it is difficult to determine whether the impact of social circumstances is systematic or not.

PER Staff Characteristics

Several studies found that the qualifications and experience of the admitting PER staff are important determinants of treatment decisions (Baxter, Chodorkoff, & Underhill, 1968; Mendel & Rapport, 1969; Meyerson *et al.*, 1979; Rabinowitz *et al.*, 1995).

Other studies (e.g., Solomon, 1981), however, found that clinician characteristics had no statistically significant effect on the decision to admit patients. The theoretical assumption underlying the effects of PER staff qualifications and more experience, including prior record of treatment decisions made, on treatment decisions is that more qualified and more experienced staff members will be more likely to recommend a course of treatment other than hospitalization. One reason may be that more experienced staff members feel more confident in recommending cost-effective treatment alternatives to hospitalization than do less experienced staff members.

The demographic characteristics of the admitting staff should be included in the model if one expects that sociodemographic differences between PER staff and presenting patients may result in patients' being stereotyped or labeled as patients who require a particular type of treatment (Solomon, 1981). The number of individuals involved in reaching a treatment decision may also influence the treatment decision outcome. Although no studies, to date, have directly considered the effect of the number of decision makers on PER treatment decisions, a substantial body of research has established that group decision making is substantially different from individual decision making (Turner, 1991), and thus, may result in different treatment decisions from those made by a sole decision maker. Furthermore, it is plausible to expect that PER staff's previous formal contact with MCO representatives regarding the treatment of presenting patients may be related to the treatment decision made. The theoretical mechanism by which this association may be explained is individual learning: the greater the number of times a certain treatment option has not been approved in the past, the less likely PER staff members are to prescribe this treatment and risk facing another rejection from an MCO representative. On the other hand, treatment options that are readily approved by MCOs are more likely to be prescribed by PER members.

PER Organizational Characteristics

The effects of organizational resources such as number of available beds and staff–patient ratios (Engleman *et al.*, 1998; Friedmann *et al.*, 2000; Holmes & Solomon, 1981) and the effects of organizational structure and staff mix (Salzer, Nixon, Schut, Karver, & Bickman, 1997) on treatment decisions are well-documented in the literature. The theoretical account for the importance of organizational resources and structure is that treatment options are contingent upon available physical resources. Thus, for example, without available beds, a patient cannot be hospitalized.

Few studies (e.g., D'Aunno & Vaughn, 1995; Friedmann *et al.*, 2000) have addressed the possible effects of formal and informal organizational arrangements, that is, official rules and unofficial practices, in PER on treatment decisions. Although formal organizational arrangements (e.g., PER policies regarding the assessment and treatment of presenting patients) were found to influence treatment decisions (D'Aunno & Vaughn, 1995), little attention was given to the role of organizational culture on treatment decisions (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Weick, 1969). Organizational culture includes perceptions of the organization's objectives, values, and norms that are shared by the PER staff members. It is possible, for example, that organizational norms cue individual decision makers to prioritize a certain type of treatment over others. Similarly, goal displacement (i.e., the abandonment of the original organization goal in favor of a different goal) may have occurred in the organization in a way that cost-saving treatment rather than the best available treatment for a patient becomes the paramount goal.

Situational Characteristics

The effects of time of day and day of week have been shown to influence treatment decisions (Engleman *et al.*, 1998; Holmes & Solomon, 1981). However, the extent to which situational characteristics are independent of organizational characteristics remains unclear. For example, the treatment decision regarding a given patient who arrives at the PER overnight may be constrained by the availability of off-hour treatment options. Although these situational factors primarily involve random events, their effect on treatment decisions is more likely to be systematic rather then random. At minimum, therefore, situational factors should be controlled for when evaluating the weight of the different determinants in the PER decision-making process.

Service Utilization Review

With the introduction of managed care utilization review as a step in treatment decisions made by PER staff, it is vital to evaluate the extent to which this

formal procedure impacts treatment decisions, that is, to determine whether or not a managed care utilization review occurred and if so, whether the initial treatment decision made within the PER was approved or not. The effect of managed care utilization review on treatment decisions may not only be direct but also affect decisions through organizational culture or PER staff members' previous experience with managed care utilization review.

Treatment Decision

As discussed above, operationalizing treatment decisions as a dichotomy no longer adequately captures the complexity of this variable. Rather, it is important to recognize that treatment decisions involve an array of available treatment options (e.g., hospitalization, discharge to overnight facility with outpatient referral, outpatient referral, referral to a partial hospitalization program, referral to another hospital, etc.) that constitute a categorical variable at minimum. Where multivariate analysis is utilized, it may also be beneficial to conceptualize treatment decisions as a continuous variable ranging from most restrictive treatment options to less restrictive options. Finally, there are other relevant dimensions of treatment decision that researchers may investigate when studying PER decision making, such as the length of time in which a decision is reached (Breslow *et al.*, 2000) and whether or not a decision-making procedure in a particular case deviates from the routine procedure (Lidz *et al.*, 2000).

In this context, one should be aware of the possibility that the relative significance of factors associated with the treatment decision may differ by treatment option. For example, a factor such as the availability of organizational resources may constrain the decision to hospitalize a patient, yet bears little influence on a decision to refer the patient to an outpatient facility. Also, with the development of health care organization networks, there may be an increased need to refer patients to other hospitals because of lack of reimbursement or to increase the average length of time needed to make a treatment decision.

Elements Mediating the Effect of Treatment Decisions on System-Level Outputs and Patient Clinical Outcomes

Many researchers (Benander, 1996; Binning, 1999; Craig, Huffine, & Brooks, 1974; Solomon & Gordon, 1987) suggest that certain factors may mediate treatment decisions and their effects on system-level outputs and patient's clinical outcomes. Linkage mechanisms and patient compliance are included in the model because they may either facilitate or limit the utilization of recommended services by patients.

Linkage Mechanisms

The extent to which patients follow the course of treatment prescribed by PER staff is contingent on existing linkage mechanisms. Linkage mechanisms refer to the structural features of the organization, or its interorganizational relationships designed specifically to improve its accessibility, and the utilization of services recommended by PER staff (D'Aunno, 1997). Linkage mechanisms may be classified into on-site delivery and external arrangements or strategies for assisting with compliance with recommended treatment. On-site delivery involves services offered in the PER (e.g., scheduling of referral appointment, transportation, reminders). External arrangements include joint programs or contractual agreements between sites of care. As suggested by Friedman and his colleagues (2000), it is useful to organize linkage mechanism on a continuum that ranges from stronger to weaker linkage mechanisms, where stronger linkage mechanisms lower the barriers to actual service delivery. Thus, for example, on- site programs, case management, transportation, and joint program ventures (between two or more facilities) are relatively strong linkage mechanisms, whereas contractual agreements, referral agreements, or market-based alternatives (i.e., referral of clients to available providers) are relatively weak linkage mechanisms. Strong linkage mechanisms were found to be important for patient compliance with recommended treatment (D'Aunno, 1997; Samet *et al.*, 1996), as they help to remove structural barriers to subsequent treatment (e.g., timely access).

Patient Compliance with Treatment Recommendations

Patients' nonadherence with treatment prescribed by PER staff was found to result in reduced quality of health, poorer social adjustment, and increased cost of mental health care (Benander, 1996). Patient's nonadherence with treatment is explained in several ways. Some, such as Solomon and Gordon (1987), cite factors like low socioeconomic status, lack

of on-site interventions, prior negative experience with psychiatric facility personnel, and patients' attempt to avoid the stigma of being treated in a psychiatric facility, as factors that impede adherence with treatment. In addition, factors such as the patient's beliefs and attitudes toward treatment, self-efficacy to adhere to treatment, level of information exchange between patient and clinician, and level of social support, have been reported to influence patient compliance with recommended treatment (Ratzan, Payne, & Bishop, 1996). As noted above, some studies (e.g., Binning, 1998) found that specific PER on-site interventions (such as arranging transportation to an outpatient facility or sending a reminder letter to the patient) improved patient utilization of recommended services.

System-Level Outputs and Patient Clinical Outcomes of Treatment Decisions Made at Presentation to PER

Studying the relationship between PER decision making and its outcomes is important for evaluating the extent to which PER decision making may help the mental health care system meet its goals. One important goal of the mental health care system is to provide cost-effective treatment. To be able to meet this goal, the mental health care system is required to effectively manage and allocate its resources (e.g., finances, staff, facilities, treatment options). Therefore, to the extent that PER decision making assists the mental health care system as a whole to manage and allocate system resources more effectively (for example, by reducing rate of rehospitalization), treatment decisions made at presentation to a PER are expected to influence system-level outputs.

Similarly, PER decision making is expected to assist the mental health care system to meet another important goal of improving the well-being of patients. Patient's clinical outcomes are expected to be influenced by the extent to which treatment decisions made at presentation to a PER are capable of leading to resolution of crisis as well as improvement in patient's well-being. Hence, both system-level outputs and patient clinical outcomes are important criteria against which to evaluate the impact of PER decision making in bringing about changes in the performance of the mental health care system, on one hand, and changes in patients' well-being, on another.

System-Level Outputs

The literature on PER decision making has identified a number of system-level outputs that may be directly influenced by treatment decisions. These include cost of mental health care, service utilization (e.g., the percentage of patients that receive a certain treatment in outpatient facilities), and rate of patients' rehospitalization (McGlynn, 1996; Thornicroft & Bebbington, 1996). The ability of the mental health care system to effectively manage and allocate its available resources is hypothesized to directly influence patient outcomes. For example, decreased rates of rehospitalization within the mental health care system are expected to reduce the overall cost of mental health care, and, consequently, allow the system to allocate more resources to effective alternative treatments that do not require hospitalization (Rothbard & Schinnar, 1996). Similarly, removing structural barriers within the mental health care system, such as limited access to service utilization, may assist patients in receiving the recommended treatment which may ultimately improve their well being.

Patient Clinical Outcomes

The presented conceptual model accounts for factors that may explain the resolution of a patient's presenting problem to the PER. Outcomes of PER decision making related to patient health may include the severity of the mental health problem, the patient's level of social functioning, and the development of coping abilities (Wells & Brook, 1989).

THEORETICAL AND EMPIRICAL IMPLICATIONS OF THE SUGGESTED MODEL

There is no doubt that research on PER treatment decision making has generated knowledge that will ultimately improve this process. The conceptual framework we propose, however, suggests that there are many aspects of PER decision making that need to be explored or reexamined. These include the interaction between different determinants and categories of treatment decisions, the role of managed care and organizational culture in the decision process, and careful examination of factors mediating treatment decisions and their outcomes (e.g., patient compliance and linkage mechanisms). Moreover, it is

important to explore interrelationships between various elements of the process (e.g., between organizational characteristics and staff characteristics, between service utilization review and organizational characteristics, and between community resources and system-level outputs). Thus, although the conceptual model we propose is parsimonious because it specifies only unidirectional influences, it is theoretically and empirically important to consider all possible relationships among the elements of the PER decision-making process.

Having said that, it is important to recognize that the proposed model as a whole cannot be tested with a single study. Rather, it is intended to direct a research agenda that will study the relationships among the model's elements at three different levels of analysis. At the macro or system level, insight into the process of PER decision making could be gained by monitoring system-level changes in inputs and outputs over time. For example, one plausible way to evaluate the impact of managed care on the PER decision-making process is to compare changes in community resources, PER organizational characteristics, patients' demographic mix, and system-level outputs of mental health services before, during, and after the introduction of managed care into a market. At the intermediate or organizational level, research may address PERs as organizations and their relationships with other organizations in their environment (for example, MCOs, referral facilities, law enforcement agencies, medical institutions, welfare agencies, etc.). A framework of power and exchange relationships may prove essential for understanding differences in PERs performance. For instance, it may be that more successful (or cost-effective) PERs are those that have greater degree of control over their environment. Finally, at the micro or individual level, it is imperative to study how cognitive and situational factors influence the judgments of an individual decision maker. Although this particular aspect has been extensively examined in the past, it is important to sustain and improve this line of research given the ever-changing context of PER decision making (e.g., the role of managed care, the increasing number of available treatment options, etc.).

One key obstacle faced by researchers in the field is the lack of consensus regarding the definition of key concepts and potentially important variables that have received little, if any, attention in the past. Therefore, a short-term research agenda that could be derived from the proposed model of PER decision making may focus on clarifying some of the key concepts and mechanisms that are included in the model. For example, a concept such as "organizational culture" remains abstract in the absence of empirical work on what this concept actually encompasses in terms of organizational norms and practices. In this respect, investigators may benefit from research in the areas of decision making (see Scott, 1992; Turner, 1991) and organizational theory (for a comprehensive review, see Scott, 1992) in order to learn more about processes of decision making within complex organizations such as PERs. Similarly, we need to find ways to measure the latent (or informal) impact of managed care service utilization reviews on treatment decision before we can start estimating the weight of this factor in PER decision making.

On an empirical note, clarifying the elements of the model that have not been systematically studied previously may require a substantial body of qualitative work conducted with both patients and PER staff. Successful examples of employing qualitative methods in health services research exist (Sofaer, 1999), and can inform future exploration into the role of managed care in PER decision making, organizational characteristics of PER, and patient compliance with prescribed treatment. Qualitative methods such as ethnography, participant observation, case study, focus groups, and content analysis of relevant documents permit rich description of complex and dynamic phenomena that can be later used for generating valid and reliable quantitative measures of such complex constructs, as well as future development of PER decision-making theory.

An equally important task is to systematically study the associations between the various elements of the PER decision making process. In particular, it is important to specify and test various hypothesized mechanisms by which different factors affect PER decision-making, as well as the ways the effects of treatment decisions on patient-level outcomes and system-level outputs are mediated by linkage mechanisms and patient compliance with treatment. In reaching this goal, researchers may benefit from recent advances in statistical analysis strategies. Most statistical analysis packages now include categorical data analysis procedures that can accommodate multinomial dependent variables such as "treatment decision." Similarly, although regression analysis and path analysis models are still valuable tools in the study of associations among the model's components, the use of structural equation models may help clarify

the nature of these associations because this statistical procedure is capable of testing different paths of associations simultaneously, without the constraints imposed by simple regression models, for example, a single dependent variable and only observed independent variables (Hoyle, 1995).

Moreover, as PER decision making is primarily conceptualized as a process, it is important to utilize statistical methods that accommodate the time dimension into the analysis. Thus, for example, researchers may be concerned with questions about the time lag of effect (e.g., how much time it takes for a treatment decision to be translated into the prescribed treatment when linkage mechanisms are present versus when they are not) or the likelihood of different groups of patients experiencing a certain event (e.g., hospitalization) at a given time point (e.g., time of day). To be able to answer such questions at different levels of analysis (e.g., patient-level vs. system-level), researchers may turn to longitudinal data analysis techniques such as time-series models (McCleary & Hay, 1980) and survival analysis (Allison, 1996). These analytic procedures allow the researcher to explore the effects of both fixed (e.g., gender) and time-varying (e.g., eligibility for health insurance) variables, and thus offer better ways of formulating dynamic relationships between variables that are different components of the same process.

CONCLUSION

PER treatment decisions are clearly a complex research arena. In part, this complexity reflects the large number of factors that bear upon this process. To another extent, it is a manifestation of the dynamic and ever-changing nature of the PER decision-making process. For future research to face the challenge of sorting out this complexity, a new and more sophisticated research agenda is needed. This paper takes an important step in this direction by offering a comprehensive conceptual framework of PER decision making which takes into account various determinants and outcomes of PER decision making as well as factors that mediate associations between these elements. We believe that this conceptual model can inform future efforts to study PER decision making in a systematic manner in order to evaluate and improve the performance of PERs given their critical role in the mental health care delivery system.

REFERENCES

Aday, L. A., & Awe, W. C. (1997). Health service utilization models. In D. S. Gochman (Ed.), *Handbook of health behavior research I: Personal and social determinants* (pp. 153–172). New York: Plenum Press.

Allen, M. H. (1999). Level 1 psychiatric emergency services. *The Psychiatric Clinics of North America*, *22*(4), 713–734.

Allison, P. D. (1996). *Survival analysis using the SAS system: A practical guide*. Cary, NC: SAS Institute.

Andersen, R., & Newman, J. (1973). Societal and individual determinants of medical care utilization in the United States. *Milbank Memorial Fund Quarterly Journal, 51*, 95–124.

Anderson, J., & Eppard, J. (1995). Clinical decision making during assessment for involuntary psychiatric admission. *Psychiatric Services*, *46*(7), 727–728.

Baxter, S., Chodorkoff, B., & Underhill, R. (1968). Psychiatric emergencies: Dispositional determinants and the validity of the decision to admit. *American Journal of Psychiatry*, *124*(11), 1542–1548.

Benander, M. K. (1996). *Psychiatric emergency room interventions and aspects of patient care that increase patient adherence to referrals for outpatient treatment*. Unpublished dissertation, University of Massachusetts.

Binning, R. R. (1998). Patient characteristics affecting compliance with follow-up after psychiatric emergency room visits. *Dissertation Abstracts International: Section B: The Sciences & Engineering*, *59*(8-B), 4456.

Breslow, R. E., Erickson, B. J., & Cavanaugh, K. C. (2000). The psychiatric emergency service: Where we've been and where we're going. *Psychiatric Quarterly*, *71*(2), 101–121.

Claassen, C. A., Hughes, C. W., Gilfillan, S., McIntire, D., Roose, A., Lumpkin, M., & Rush, A. J. (2000). Toward a redefinition of psychiatric emergency. *Health Services Research*, *35*(3), 735–754.

Craig, T. J., Huffine, C. L., & Brooks, M. (1974). Completion of referral to psychiatric services by inner city residents. *Archives of General Psychiatry*, *31,* 353–357.

Cross, C. D. (2000). Introduction. Special section: Psychiatric emergency services. *Psychiatric Quarterly*, *71*(2), 97–99.

D'Aunno, T. A. (1997). Linking substance abuse treatment and primary health care. In J. A. Egertson, D. M. Fox, & A. I. Leshman (Eds.), *Treating Drug Users Effectively* (pp. 311–351). Malden, MA: Blackwell.

D'Aunno, T. A., & Vaughn, T. E. (1995). An organizational analysis of service patterns in outpatient drug abuse treatment. *Journal of Substance Abuse*, *7,* 27–42.

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage revisited: Institutional isomophism and collective rationality in organizational fields. *American Sociological Review*, *48,* 147–160.

Engleman, N. B., Jobes, D. A., Berman, A. L., & Langbein, L. I. (1998). Clinicians' decision making about involuntary commitment. *Psychiatric Services*, *49*(7), 941–945.

Friedmann, P. D., D'Aunno, T. A., Jin, L., & Alexander, J. A. (2000). Medical and psychosocial services in drug abuse treatment: Do stronger linkages promote client utilization. *Health Services Research*, *35*(2), 443–465.

Gerson, S., & Bassuk, E. (1980). Psychiatric emergencies: An overview. *American Journal of Psychiatry*, *137*(1), 1–11.

Holmes, W., & Solomon, P. (1980). Criteria used in first admissions and readmissions to psychiatric hospitals. *Social Science Medicine*, *14A*, 55–59.

Holmes, W., & Solomon, P. (1981). Organizational and client influences on psychiatric admissions. *Psychiatry*, *44,* 201–209.

Hoyle, R. H. (Ed.). (1995). *Structural equation modeling: Concepts, issues and applications*. California: Sage publications.

Lidz, C. W., Coontz, P. D., & Mulvey, E. P. (2000). The "pass-through" model of psychiatric emergency room assessment. *International Journal of Law and Psychiatry*, *23*(1), 43–51.

Marson, D. C., McGovern, M. P., & Pomp, H. C. (1988). Psychiatric decision making in the emergency room: A research overview. *American Journal of Psychiatry*, *145*(8), 918–925.

McCleary, R., & Hay, R. A. (1980). *Applied time series analysis for the social sciences*. California: Sage Publications.

McGlynn, E. A. (1996). Domains of Study and Methodological Challenges. In L. I. Sederer & B. Dickey (Eds.), *Outcomes Assessment in Clinical Practice* (pp. 19–24). Baltimore: Williams & Wilkins.

McGlynn, E. A., Norquist, G. S., Wells, K. B., Sullivan, G., & Liberman, R. P. (1988). Quality-of-care research in mental health: Responding to the challenge. *Inquiry*, *25,* 157–70.

Mendel, W. M., & Rapport, S. (1969). Determinants of the decision for psychiatric hospitalization. *Archives of General Psychiatry*, *20,* 321–328.

Meyer, G. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, *83,* 340–363.

Meyerson, A. T., Moss, J. Z., Belville, R., & Smith, H. (1979). Influence of experience on major clinical decisions. *Archives of General Psychiatry*, *36,* 423–427.

Olfson, M., & Goldman, H. H. (1996). Mental health services research. In W. R. Breakey (Ed.), *Integrated Mental Health Services. Modern Community Psychiatry* (pp. 103–119). New York: Oxford University Press.

Pescosolido, B. A., Gardner, C. B., & Lubell, K. M. (1998). How people get into mental health services: Stories of choice, coercion, and "muddling through" from "first timers." *Social Science Medicine*, *46*(2), 275–286.

Rabinowitz, J., Slyuzberg, M., Salamon, I., Dupler, S., Kennedy, R. S., & Steinmuller, R. (Eds.). (1995). *A method for understanding admission decision making in a psychiatric emergency room. Psychiatric Services*, *46*(10), 1055–1060.

Ratzan, S. C., Payne, J. G., & Bishop, C. (1996). The status and scope of health communication. *Journal of Health Communication*, *1*(1), 25–42.

Rothbard, A. B., & Schinnar, A. P. (1996). Community determinants of psychiatric hospitalization and length of stay. *Socio-Economic Planning Sciences*, *30*(1), 27–38.

Salzer, M. S., Nixon, C. T., Schut, L. J. A., Karver, M. S., & Bickman, L. (1997). Validating quality Indicators. Quality as relationship between structure, process, and outcome. *Evaluation Review*, *21*(3), 292–309.

Samet, J. H., Saitz, R., & Larson, M. J. (1996). A case for enhanced linkage of substance abusers to primary medical care. *Substance Abuse*, *17*(4), 181–199.

Schuster, J. M. (1995). Frustration or opportunity? The impact of managed care on emergency psychiatry. In M. H. Allen (Ed.), *The Growth and Specialization of Emergency Psychiatry* (Vol. 67, pp. 101–108). San Francisco: Jossey Bass.

Scott, R. (1992). *Organizations: Rational, natural, and open systems*. (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.

Segal, S., Egley, L., Watson, M. A., & Goldfinger, S. M. (1995). The quality of psychiatric emergency evaluations and patient outcomes in county hospitals. *American Journal of Public Health*, *85*(10), 1429–1431.

Segal, S., Watson, M. A., Goldfinger, S. M., & Averbuck, D. S. (1988). Civil commitment in the psychiatric emergency room III. Disposition as a function of mental disorder and dangerousness indicators. *Archives of General Psychiatry*, *45,* 759–763.

Segal, S. P., Watson, M. A., & Akutsu, P. D. (1996). Quality of Care and Use of Less Restrictive Alternatives in the Psychiatric Emergency Service. *Psychiatric Services*, *47*(6), 623–627.

Slagg, N. B. (1993). Characteristics of emergency room patients that predict hospitalization or disposition to alternative treatments. *Hospital and Community Psychiatry*, *44*(3), 252–256.

Sofaer, S. (1999). Qualitative methods: What are they and why use them. *Health Services Research*, *34*(5), 1101–1118.

Solomon, P. (1981). The admissions process in two state psychiatric hospitals. *Hospital and Community Psychiatry*, *32*(6), 405–408.

Solomon, P., & Gordon, B. (1986). The psychiatric emergency room and follow-up services in the community. *Psychiatric Quarterly*, *58*(2), 119–127.

Solomon, P., & Gordon, B. (1987). Follow-up of outpatient referrals from a psychiatric emergency room. *Social Work in Health Care*, *13*(1), 57–67.

Thornicroft, G., & Bebbington, P. (1996). Quantitative methods in the evaluation of community mental health services. In W. R. Breakey (Ed.), *Integrated Mental Health Services* (pp. 120–138). Oxford: Oxford University Press.

Turner, J. C. (1991). *Social influence*. California: Cole Publishing.

Watson, M. A., Segal, S. P., & Newhill, C. E. (1993). Police referral to psychiatric emergency services and its effect on disposition decisions. *Hospital and Community Psychiatry*, *44*(11), 1085–1090.

Way, B. B., Evans, M. E., & Banks, S. M. (1992). Factors predicting referral to inpatient or outpatient treatment from psychiatric emergency services. *Hospital and Community Psychiatry*, *43*(7), 703–708.

Weick, K. E. (1969). *The social psychology of organizing*. (2nd ed.). Massachusetts: Addison Wesley.

Wells, K. B., & Brook, R. H. (1989). The quality of mental health services: Past, present, and future. In C. A. Taube, D. Mechanic, & A. A. Hohmann (Eds.), *The Future of Mental Health Services Research*. Washington, D.C.: Government Printing Office.