

by **TAFT PARSONS III, MD**

Length of Stay: Managed Care Agenda or a Measure of Clinical Efficiency?

ABSTRACT

The purpose of this paper is to provide clinicians a review of the literature on length of stay (LOS) in an effort to differentiate between superficial pressure from managed care and efficient inpatient care. We included papers that were identified through an OVID Medline search. Length of stay and psychiatry were entered as search variables. Limitations placed on the search were English language, as well as years 1990 to present. On review of the search results, all case reports and editorials were eliminated. Papers with abstracts indicating that LOS was not a primary focus of the paper were also eliminated. Lastly, one paper studying adolescent patients was eliminated to improve the homogeneity of the studies under consideration. The results and discussion are presented in a qualitative fashion, citing findings of individual studies. Effort was made to give weight to studies with large samples, good study design with explanation of any limitations or shortcomings of the individual studies, and powerful findings. What we found was that despite daily pressure upon clinicians to continually reduce LOS, the body of literature examining methods to achieve this goal without sacrificing quality, as well as the outcomes of reduced LOS, is quite sparse. As this measure affects clinical management and the doctor/patient relationship, further in depth studies are needed. It appears that the best way to fulfill the clinician's responsibilities to the patients and third party payers is through improving the services already provided to the patient.

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INTRODUCTION

Psychiatric healthcare providers have historically emphasized patient individuality, while giving little attention to similarities among patient populations. More recently, mental health benefits and costs have come under increased scrutiny. Increasingly, managed care imperatives are causing psychiatric caregivers to consider and implement clinical pathways in efforts to deliver quality care within fiscal restraints.¹ Reduced hospital length of stay (LOS) has become perhaps the primary form of cost control within inpatient mental health. Attempts have been made by third party payers to use diagnosis to predict an appropriate LOS across disciplines, which has worked fairly well in disciplines such as surgery. In this way, third party payers are able to prospectively pay providers

outpatient treatment settings. In this regard, preventing admissions has proven to be more difficult than limiting LOS using benefit restrictions and concurrent and retrospective utilization management.⁷ Corresponding with the decreased use of inpatient care is an increased demand for outcome-based measurement of mental health treatment. Third party payers no longer accept the idiosyncratic judgments of individual clinicians regarding the necessity for inpatient treatment, but look for empirically based justification. Providers thus are under increasing pressure to document the necessity, quality, and efficacy of services provided.⁸ Whereas clinical outcomes measures and reference databases have been developed for most medical specialties, psychiatry continues to lag far behind. Only

Not unexpectedly, the push for reduced LOS has met with resistance from psychiatrists, nurses, social workers, and other care providers who expected to see robust evidence of poorer outcomes with shorter hospital stays. There is mixed literature on the effect of reducing LOS. Some studies suggest that brief inpatient treatment or outpatient treatment is as effective or more effective than long-term inpatient programs for patients with severe mental illness. Other findings indicate that patients with depression who are discharged after shorter stays are more globally impaired on discharge.

The current paper is a qualitative review of the literature on LOS. An attempt is made to differentiate between cost saving pressures placed on clinicians by health plan administrators and

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based on what the average LOS should be for a given diagnosis. A large body of evidence has demonstrated that diagnosis is a poor predictor of LOS in mental health, which has led to several studies examining other factors that more accurately predict LOS in psychiatry.²⁻⁶ Along with efforts to predict LOS, efforts have been made to greatly reduce psychiatric LOS.

In efforts to control costs and improve the cost-effectiveness of care, health plans have sought to shift patients and resources from acute psychiatric inpatient care to

recently have hospital mental health professionals begun to grapple with this issue, pushed by a number of important factors including new standards from the Joint Commission on Accreditation of Healthcare Organizations, dramatic changes brought about by managed healthcare organizations, and the public's demand for accountability in healthcare.⁹ Factors associated with recovery or outcomes, and even the definition of recovery itself, are still swirling in murky waters, with little standardization or agreement among mental health professionals.⁹

reducing LOS by improving the services provided to patients.

METHODOLOGY

Papers to be included for review were identified through an OVID Medline search. *Length of stay* and *psychiatry* were entered as search variables. Limitations placed on the search were English language, as well as years 1990 to present. The limitation of 1990 to present was included to provide a focus on more current literature, particularly papers written after the introduction of managed care into payment schemes. On review

of the search results, all case reports and editorials were eliminated, as the inclusion of case reports and editorials may dilute the power of larger studies with meaningful results. Papers with abstracts indicating that LOS was not a primary focus of the paper were also eliminated.

This search resulted in the identification of 29 articles of various types for further review. Upon acquisition of the articles, three articles were found not to have a primary focus involving the stated goals of this review and were eliminated. During review and analysis of the 26 included papers, 59 citations were found, which

In an effort not to lose specific findings and recommendations, as can happen when a meta-analysis is performed, the results and discussion are presented in a qualitative fashion, citing findings of individual studies. An effort was made to give weight to studies with large samples, good study design with explanation of any limitations or shortcomings of the individual studies, and powerful findings.

RESULTS

Several studies have focused on predicting LOS. Parks, et al., found that social and discharge factors appear to be an important addition to clinical variables when

Scale score, living alone vs. with family, diagnosis, disturbances of behavior/ speech/ other functions measured by the Present State Exam (PSE), and non-specific symptoms from the PSE.⁶ Davis instituted a diagnostic/ outcomes measure tool in the treatment of 626 inpatients. In a pilot study, Davis found that unstable living situations led to significant increases in LOS.⁹ Ries prospectively followed 608 patients with a diagnosis of schizophrenia or schizoaffective disorder, and compared subjects with and without a comorbid substance use disorder. He found that dually diagnosed patients had hospital stays 30-percent shorter than those without a substance use disorder.¹¹ In a large outcome study with a primary and replication sample of 2,425 patients, Hopko, et al., used the Brief Psychiatric Rating Scale-Anchored Version (BPRS-A) resistance score, number of previous referrals for extended care, BPRS-A positive symptoms score, and BPRS-A psychological discomfort score to achieve a 70-percent rate of accurate prediction of extended hospitalization.¹² Lyons performed a regression analysis on 2000 patients admitted to five wards over a two-year period. He found that the attending psychiatrist was a significant predictor of LOS, predicting 9.8 percent of the overall variation in LOS, even after controls were made for case mix. He also found that the variation in LOS for psychiatrists who admitted few patients was much greater than that for psychiatrists who admitted many patients.⁵ Harman used data from the Pennsylvania Health Care Cost Containment Council to analyze 327,000 psychiatric hospitalizations between 1996 and 2000. He found that 39 percent in the variance in LOS was attributable to providers (hospitals and providers within hospitals).⁷

Factors leading to prolonged LOS have been another area of interest. Draper, et al., examined

[THIRD-PARTY PAYERS] control costs through concurrent and retrospective case review, using LOS to identify cases for review as well as to select “preferred providers,” with little attention to more significant measures of clinicians’ and hospitals’ ability to provide quality care to patients.

could be included in the current review, under the original OVID Medline search parameters. These papers were obtained for review, of which 15 were found relevant and included. Due to the low number of studies that qualified to be included in the review, a decision was made to allow for several different types of patient populations, with various diagnoses, patient demographics, and treatment settings. However, in an attempt to improve patient homogeneity to some degree, one study of adolescent patients was excluded.

examining determinants of LOS. In his sample, a retrospective analysis was performed on 272 first time admits to a state geropsychiatric hospital over 22 months. Being single and admitted to the hospital from a treatment or long-term care facility increased the risk of a long-term hospitalization, as well as the need for placement in a treatment or long-term care facility on discharge.¹⁰ Creed examined 115 consecutive admits to a district inpatient unit, finding five variables, which could predict 36.6 percent of the variance in LOS. These were the Social Behavior

prolongation of length of stay on a geriatric psychiatry ward, in a 12-month prospective audit of 73 consecutive patients. He found that diagnostic related groups (DRGs) were a poor predictor of LOS. Many overlapping factors were identified as contributing to prolongation of LOS. Overall, 41.6 percent of bed days were due to delays. Medical factors delayed treatment on 11.8 percent, social factors (usually placement) delayed discharge on 9.3 percent, and hospital system delays (i.e., late consultations) occurred on four percent. Delays due to psychotropic medication occurred on 33.1 percent of bed days (30% due to adverse effects, and 70% due to non-response). There was some overlap between drug categories, as combinations were used in treatment resistant patients. When social factors were identified as the main reason for continued hospitalization, 93 percent of bed days were considered to prolong LOS. Over 70 percent of bed days were due to difficulties in placing behaviorally disturbed patients with dementia into nursing homes and hostels.⁴ In a retrospective chart review of 355 patients with a diagnosis of a depressive or psychotic disorder, Durbin found that increases in symptom severity after admit prolonged LOS. Her study found that every five-point increase in the Computerized Severity Index prolonged LOS 3.1 days.³

A growing body of literature has begun to examine ways to reduce LOS. In a prospective outcomes study of 86 inpatients on a geropsychiatry unit in a public hospital in California, Knight, et al., examined intensive and specialized case management in reducing LOS. His program reduced LOS from 27 to 12 days, at a savings of \$6,750 per admission, with an estimated net savings of \$291,500 over the five month program.¹³ In a small prospective outcomes study of 40 psychotic patients, Drury found that cognitive therapy groups led to faster discharge than patients

treated with recreation and support. This study also found a significant reduction in positive symptoms which was sustained for nine months over the treatment as usual group.¹⁴ Bultema instituted a multidisciplinary clinical path, and then analyzed 58 geriatric admissions at the six-month point after implementation. She found that the average LOS decreased by 39 percent. The decreased LOS led to patient day savings of 567 days, and reduced cost per case of \$5,770. Because costs and patient days were eliminated simultaneously, the cost per day decreased by 3.26 percent. Also, she found that as the decrease in

cost exceeded the decrease in reimbursement, net revenue increased by 104.1 percent.¹

Finally, some studies have evaluated the effects of reductions in LOS. In a retrospective case control study of 66 dementia patients at the VA, Kunik studied the effects of an administrative reduction in LOS. He found no differences between pre- and post-reduction groups in Cohen-Mansfield Agitation Inventory, Mini Mental Status Exam, Global Assessment of Function (GAF), or change in GAF at the time of discharge. Additionally, no differences were found between groups in the number of psychiatric or medical readmissions, or in the average LOS during readmission.¹⁵ In an outcomes study of 6,377 VA patients with PTSD, Rosenheck, et

al., found that inpatient programs that shortened their LOS had no adverse effect on program effectiveness.¹⁶ Druss used admission data from an inpatient hospital over a 10-year period, finding that LOS decreased from a mean of 36 days in 1989 to 12 days in 1993. During that same period, readmits within one year increased from seven percent in 1989 to 22 percent in 1993. However, a multivariate analysis did not show an association between LOS and likelihood of readmission.¹⁷ One study found that psychiatric hospitals are increasingly treating a poorer, sicker group of patients with shorter hospital stays,

resulting in poorer long-term outcomes and more readmissions.¹⁵

A large, multisite, outcome study conducted in the VA in the early 1990s suggested that intensive, long-stay inpatient treatment did not result in better clinical outcomes than shorter term programs, and substantially increased costs averaging \$18,000 more per patient per year.¹⁶ Three studies have attempted to evaluate the impact of VA bed closures by examining changing rates of involvement in the criminal justice system, and spill over into other healthcare systems. These studies have found either no evidence of effects or small effects related to bed closures, but have been limited by their lack of evidence concerning the impact of system change on clinical effectiveness.¹⁸⁻²⁰

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with the rise of managed care, LOS has dropped and the likelihood of readmit has risen. It is unclear whether the decreased LOS caused the increases in readmissions, or if it is a new paradigm of treatment with briefer, crisis-oriented admissions replacing fewer longer hospitalizations.

DISCUSSION

Third-party payers have not only introduced the concept of LOS to inpatient psychiatric care, but they use it regularly to control costs. They control costs through concurrent and retrospective case review, using LOS to identify cases for review, as well as using it to select “preferred providers,” with little attention to more significant measures of clinicians’ and hospitals’ ability to provide quality care to patients.^{21,22} Despite the clinician’s daily interactions with managed care companies and ongoing pressure to reduce LOS, very few studies have been conducted since 1990 that examine LOS. This became apparent in the initial literature search, when only 29 papers were found to fit the initial search criteria. This forced the author to include a heterogeneous collection of studies, involving different patient populations, patient demographics, and treatment settings.

In the past 15 to 20 years, with the rise of managed care, LOS has dropped and the likelihood of readmit has risen. It is unclear whether the decreased LOS caused the increases in readmissions, or if it is a new paradigm of treatment with briefer, crisis oriented admissions replacing fewer longer

hospitalizations.¹⁷ Regardless, the reality of the current state of inpatient psychiatry favors brief hospitalizations for many reasons. First and foremost, the evidence shows that extended hospitalizations generally do not provide a demonstrable benefit over brief hospitalization, and some studies indicated long stays may be detrimental to long-term outcomes.^{15–20} Second, without a demonstrable benefit, third-party payers are no longer willing to pay hospitals and physicians for unnecessary inpatient days.

The author feels that too much focus has been given to finding a formula to predict LOS. Much of this focus was due to third-party payers’ efforts to prospectively pay hospitals and clinicians for specific groups of patients. Few investigations have examined ways to decrease delayed discharge in high risk groups, such as geriatric patients or patients with limited social supports. Instead, self-evident findings, such as geriatric patients in inpatient psychiatric units and patients with high symptom severity at risk for extended hospitalization, are the focus of investigators’ work.^{3,6,9,10,12} Additionally, few studies have focused on ways to improve the quality of care, or the effects of

decreasing LOS, in the face of continual pressure to shorten hospital stays. The author feels that studies directed at improving clinician and hospital practices would be a more appropriate allocation of research efforts, as it is very difficult to effect change in the predisposing factors of difficult-to-treat patient populations.

As LOS continues to decline, outcome studies that go beyond the limitations of large administrative databases will be important. Such studies should examine not only specific behavior and health service use outcomes, but also ratings of caregiver burden and staff provider satisfaction.¹⁵ More research is needed to determine why hospitals differ in LOS. It is especially important to examine the quality of care provided in hospitals with short vs. long LOS. If hospitals achieve shorter LOS by discharging patients too soon, it is quite possible that these hospitals have higher readmission rates, although prior research has shown no relationship between LOS and readmission rates in managed settings.⁷

It is unknown at what point clinicians and hospitals should consider a brief hospitalization “too brief.” The current literature has only examined reducing LOS to a range of 8 to 12 days. Insurance providers continue to push for even shorter LOS. For example, several of the author’s insurance panels push for a LOS of five days or less. At this time, there is no evidence for or against this type of management. Hummelvoll attempted to examine the effects of this external pressure on nurses, and found that demands on “effectiveness” created stress in the working situation.²³

Due to managed care pressures, many clinicians are resistant to the possibility that any portion of a patient’s hospital stay may be “wasted time.” Resistance to efforts to reduce LOS include hesitancy to change clinical practice, the

perception that the goal of hospitalization is complete resolution of the psychiatric condition, an organizational culture with psychodynamic roots and a strong hierarchy, feelings that demands on effectiveness are a hindrance to good treatment, and that the medical model results in a lack of individualization.^{1,23} The literature that examined ways to reduce LOS generally focused on improving a service provided to the patient during inpatient hospitalization, which generally led to reductions in LOS. This was demonstrated in Bultema's pathway, Knight's specialized case management, and Drury's cognitive therapy groups.^{1,13,14}

The current body of literature lacks depth in examining the quality of treatment given during these brief hospitalizations. It is reasonable to expect that less time in the hospital means reduced time with clinical staff. That is, 15 minutes daily with the psychiatrist during a five-day hospitalization is less than 15 minutes daily during a 30-day hospitalization. Therefore, the care given must be of top quality to provide the same outcomes after a five-day versus 30-day hospitalization. As administrative databases generally do not collect specific information regarding good versus poor outcomes, symptom reduction versus symptom escalation, or response versus resistance to interventions, other measures are needed. For example, Davis described the introduction of PsychSentinel, which is a brief diagnostic and outcomes tool, into the clinical care of an inpatient unit. Through the use of feedback from the outcome data, the unit improved its efficiency and saved a significant amount of money.⁹ As another example, it has been shown that providing feedback to psychiatrists on management characteristics, specifically on LOS, led to shorter stays.⁵

Clinical staff should endeavor to establish the most effective means

of providing treatment services. For example, staff can list all of the processes that should ideally occur for people admitted into acute psychiatric units. This may improve the mechanism of admitting psychiatric patients, and facilitate greater disclosure of the information about the aims and objectives of the admission. Alternatively, staff could determine the steps required for full integration into a community mental health team. This would improve the discharge preparation procedure and harmonize the inpatient to outpatient geographical divide.²⁴

Best practice guidelines for management of psychiatric illnesses may provide a more reliable quality control strategy, as the guidelines define interventions and timelines that can be translated into benchmark indicators.²⁵ The use of a care pathway may provide a vehicle for greater quality control.²⁴ Bultema's clinical pathway describes the expected outcomes for patients and their significant others. Highlights of the clinical pathway include: 1) early discharge planning, 2) comprehensive assessment and decision making by the multidisciplinary team, 3) emphasis on significant other involvement with treatment, and 4) patient-specific focused outcomes. Additionally, clinical pathways promote quality patient care by incorporating existing standards, practice guidelines and research findings, eliminating unnecessary diversity, and providing a mechanism to monitor quality care based on patient outcomes. They facilitate multidisciplinary team collaboration and continuity of care, education of new staff

members and students on institutional practice patterns, and facilitate communication about the patient's progress in shift report and treatment planning conferences. Lastly, pathways improve fiscal performance by identifying and eliminating inefficient practices and use of resources.¹

CONCLUSION

Despite daily pressure upon clinicians to continually reduce LOS, the body of literature examining methods to achieve this goal without sacrificing quality, as well as the outcomes of reduced LOS, is quite sparse. As this measure affects clinical management and the doctor patient relationship, further in depth studies are needed. It appears that the best way to fulfill the clinician's responsibilities to the patients and third party payers is through improving the services already provided to the patient.

A multidisciplinary care pathway, as detailed by Bultema, improves coordination of biological and psychological treatments, as well as the social dispositions of the patient.¹ This allows providers to continue to use a biopsychosocial model, but provides targets which can be provided to third party payers to satisfy demands to document the necessity, quality, and efficacy of services. Specialized case management described by Knight improves disposition planning and reduces delays in discharge, directly reducing LOS while simultaneously improving the transition from inpatient to outpatient treatment.¹³ Outcomes measures, such as Davis's PsychSentinel, allow clinicians, hospital systems, and third party

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payers to measure cost versus benefit of hospital and insurer policy, as well as clinician performance.⁹ This feedback can then be used by clinicians, hospitals, and insurers to provide the most appropriate services to patient populations as well as individual patients.

DEFINITION OF TERMS

Evidence-based medicine: The integration of best research evidence with clinical expertise and patient values.²⁶

Best practice: A technique or methodology that, through experience and research, has proven to reliably lead to a desired result.²⁷

Outcome measures: A measure of the result of a system, relative to the aim.²⁸

Quality of care: A measure of the degree to which delivered health services meet established professional standards and judgments of value to the consumer.²⁹

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