Prospective Payment System and Impairment at Discharge

The 'Quicker-and-Sicker' Story Revisited

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Since the introduction of the prospective payment system (PPS), anecdotal evidence has accumulated that patients are leaving the hospital "quicker and sicker." We developed valid measures of discharge impairment and measured these levels in a nationally representative sample of patients with one of five conditions prior to and following the PPS implementation. Instability at discharge (important clinical problems usually first occurring prior to discharge) predicted the likelihood of postdischarge deaths. At 90 days postdischarge, 16% of patients discharged unstable were dead vs 10% of patients discharged stable. After the PPS introduction, instability increased primarily among patients discharged home. Prior to the PPS, 10% of patients discharged home were unstable; after the PPS was implemented, 15% were discharged unstable, a 43% relative change. Efforts to monitor the effect of this increase in discharge instability on health should be implemented.

(*JAMA*. 1990;264:1980-1983)

SINCE the introduction in 1983 of the prospective payment system (PPS), there has been considerable anecdotal evidence that patients are leaving the hospital "quicker and sicker."[1-4] However, there has been a dearth of systematic evidence to support the assertion that, post-PPS, patients are discharged with an increased level of illness.

We do know that changing the way a hospital was paid was initially associated with dramatic decreases in length of stay,[5] although these decreases have now stabilized.[6] The purpose of this article is to provide nationally representative data about the level of impairment at discharge prior to and following the implementation of the PPS. In order to answer correctly the question of whether patients are inappropriately discharged with an increased level of illness since the implementation of the PPS, we must first define a valid measure of impairment at discharge and then determine if patients discharged from the hospital with an increased level of illness do worse than expected. If patients who are discharged with clinical impairments die more frequently than expected, then increasing the level of illness at discharge might be unwise.

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The opinions, conclusions, and proposals in this article are those of the authors alone and do not necessarily represent the views of any of these organizations, the RAND Corp, or UCLA.

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METHODS

The study methods, including design, sampling, and analysis strategy, are described in another article in this series.[7] This report, because it concerns patients discharged alive from the hospital, excludes patients who died in the hospital, who were directly transferred to other acute care hospitals, or who had a "do not resuscitate" order written at some time during the hospitalization, reducing the maximum sample size from 14 012 to 10 913.

DISCHARGE IMPAIRMENT: CONSTRUCTION OF MEASURES

Based on clinical judgment, we constructed three measures of discharge impairment (Table 1): instability at discharge, sickness at discharge, and abnormal last laboratory values. Data used to construct the first two measures came from the day of discharge or the day prior to discharge.

Instability variables are designed to identify patient problems present at discharge that (1) clinicians generally agree should be either corrected prior to discharge or monitored in the postdischarge period, and (2) may result in poor outcomes if not corrected. In general, instability variables reflect clinical problems that were not present at admission. Sickness variables are designed to measure sickness at discharge regardless of whether the problem was present at admission or should or could have been corrected at discharge. As seen in Table 1, 8.3% of patients with acute myocardial infarction had sickness at discharge caused by the presence of chest pain on at least one of the last 2 days of hospitalization, but 0.3% of patients with myocardial infarction had instability at discharge caused by chest pain that was not present at admission. Abnormal last laboratory values reflect the presence of abnormal findings the last time a test was performed during the hospitalization.

ANALYSIS

Virtually all of the analyses presented herein are based on χ^2 tests of significance. We did, however, use multivariate techniques (linear and logistic regression) to adjust for differences in patient sickness at time of hospital admission when studying discharge impairment pre- and post-PPS. We also studied the relationship between discharge impairment and postdischarge death separately in the pre- and post-PPS periods and defined death within a specified number of days either postadmission or postdischarge.[8,9] The results from these analyses are qualitatively consistent with the analyses reported herein. In this article, emphasis is given to the instability at discharge measure because it is clinically the most appealing of our three measures.

RESULTS

Considering all study years, one (17%) of six patients was discharged with at least one instability, two (39%) of five patients were discharged with at least one measure of sickness, and one