

# Study Shows Hospital Performance Predicts Only Small Differences in Hospital Risk-Adjusted Mortality Rates

## Overview

It is widely recognized that the quality of health care in the United States is uneven and often inadequate. Adding to this is the variation in hospital quality of care, particularly compliance with hospital performance measures. In response to these concerns, the [Hospital Quality Alliance](#) began measuring hospital performance, and the [Centers for Medicare and Medicaid Services](#) reports these results on their website, [Hospital Compare](#). Hospital performance measurement and reporting can provide an incentive to improve quality of the care delivered and to influence consumer choice of hospitals. In a recent study conducted, in part, by an HSR&D investigator and published in the December 13, 2006 issue of *JAMA*, investigators sought to test whether quality measured with the process measures used in Hospital Compare are correlated with, and predictive of, hospitals' risk-adjusted mortality rates for three conditions:

- acute myocardial infarction (AMI),
- pneumonia,
- and heart failure.

In other words, from a consumer's perspective can a hospital's performance on process measures be used to choose a hospital where patients can expect to have better outcomes?

## Study Methods

Using observational analysis, investigators analyzed data on ten performance measures for 3,657 acute care hospitals in the United States that were included in Hospital Compare between 1/1/04 and 12/31/04. Five of the performance measures assessed quality of care for AMI (aspirin within 24 hours of arrival, beta-blocker within 24 hours of arrival, angiotensin-converting enzyme inhibitor for left ventricular dysfunction, aspirin prescribed at discharge, and beta-blocker prescribed at discharge); three measures were for pneumonia (timing of initial antibiotics, pneumococcal vaccination, and assessment of oxygenation within 24 hours of admission); and two measures were for heart failure (assessment of left ventricular function, and use of ACE-inhibitor for left ventricular dysfunction).

## Results and Interpretations

Results of the study show that hospitals with high and low performance on Medicare quality measures had little difference in the rate of death for the three conditions, indicating that the performance measures may not accurately reflect patient

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outcomes. For example, across all AMI performance measures the absolute reduction in risk-adjusted mortality rates between hospitals performing in the 25<sup>th</sup> percentile versus those performing in the 75<sup>th</sup> percentile was 0.005 for inpatient mortality, 0.006 for 30-day mortality, and 0.012 for 1-year mortality. For the heart failure performance measures, the absolute death reduction was smaller, ranging from 0.001 for inpatient death to 0.002 for 1-year death. For the pneumonia performance measures, the absolute reduction in death ranged from 0.001 for 30-day death to 0.005 for inpatient death.

In interpreting these results, authors note that if one-third of the patients receiving care at the lowest performing hospitals received care at high-performance hospitals, approximately 3000 lives might have been saved. However, if this is put in the context of the number of patients who have access to high-performing hospitals, the number of lives at risk becomes smaller. It also is important to note that the risk-adjusted models used in this study were based on administrative data, in which patient comorbidities may have been under-reported.

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Werner R and Bradlow E. Evaluating the role of performance measures in choosing low mortality hospitals: Evidence from Medicare's Hospital Compare. *The Journal of the American Medical Association* December 13, 2006;296(22):2964-2702.