Accepting Critically Ill Patients in Transfer: How Will It Affect Common Hospital Benchmarks?


Study Overview

Objective. To determine the effect of accepting transferred critically ill patients on common hospital benchmarks.

Design. Prospective cohort study.

Methods. Admitting diagnosis and severity of illness scores were obtained for 4579 consecutive admissions to a medical intensive care unit (MICU) of a tertiary care hospital. Outcomes for transferred patients were compared with outcomes for directly admitted patients.

Main outcome measures. MICU and hospital length of stay (LOS), MICU readmission, and hospital mortality.

Main results. Compared with directly admitted patients, transferred MICU patients had a higher acute physiology score. After adjusting for admitting diagnosis and acute physiology score, the transferred patients still had a 38% longer MICU stay (95% confidence interval [CI], 32%–45%), a 41% longer hospital stay (95% CI, 34%–50%), and a 2.2 greater odds of death (95% CI, 1.7–2.8). Based on a model predicting benchmark scores for the MICUs accepting transfers, 14 excess deaths per 100 admissions would be attributed to the MICU.

Conclusion. Transferred MICU patients have higher mortality and LOS even after full adjustment for case-mix and severity of illness. ICUs that provide tertiary critical care are at risk for being penalized by benchmarks that do not take into account source of admission.

Commentary

Benchmarking physicians or hospital services are part of a growing effort to improve quality of care. Benchmarks provide a standard that third parties (ie, patients, insurance companies, national accreditation organizations) can use to compare providers and hospitals. Critics have complained that “report cards” can be unreliable and confounded by severe illness or outliers in the underlying patient population [1]. The response to this criticism has been to risk-adjust scores based on the baseline risk of the patient population. For instance, weighting the score according to billed diagnosis-related groups (DRGs) would credit a hospital or physician for treating more complex patients who accumulate multiple diagnoses.

As argued by the authors of this study, DRG weighting may not be sufficient to account for the differences in illness severity. The variable severity of each diagnosis and inability of billing codes to capture all of the clinical data are clear weaknesses of many current quality indicators. To prove these weaknesses, the authors offer a compelling demonstration of the referral effect—patients transferred to the MICU are sicker and die more frequently than patients admitted from the floor or directly from the emergency department. The strong effect of transfers on mortality and LOS cannot be adjusted away by diagnosis-based weighting. They conclude that failing to account for transfers can misrepresent the quality of care and inappropriately penalize tertiary referral centers.

Should risk-adjusted quality scores be dispensed with? Not as of yet, because for many environments there is no alternative, and they can still be a valid and powerful tool to improve care. When used to compare hospital services in similar environments and drawing from comparable patient base, they may indicate an important failing. However, when an attempt is made to compare quality across a variety of hospitals or providers, more clinical data such as source of admission may be needed to ensure validity.

Applications for Clinical Practice

Benchmarks for intensive care hospital services should be interpreted with caution and, if possible, incorporate information on the admission source.

—Review by Josh F. Peterson, MD, MPH

References