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Teaching Hospital Five-Year Mortality Trends in the Wake of Duty Hour Reforms

Abstract

Background

The Accreditation Council for Graduate Medical Education (ACGME) implemented duty hour regulations for residents in 2003 and again in 2011. While previous studies showed no systematic impacts in the first 2 years post-reform, the impact on mortality in subsequent years has not been examined.

OBJECTIVE

To determine whether duty hour regulations were associated with changes in mortality among Medicare patients in hospitals of different teaching intensity after the first 2 years post-reform.

DESIGN

Observational study using interrupted time series analysis with data from July 1, 2000 to June 30, 2008. Logistic regression was used to examine the change in mortality for patients in more versus less teaching-intensive hospitals before (2000–2003) and after (2003–2008) duty hour reform, adjusting for patient comorbidities, time trends, and hospital site.

PATIENTS

Medicare patients ($n = 13,678,956$) admitted to short-term acute care non-federal hospitals with principal diagnoses of acute myocardial infarction (AMI), gastrointestinal bleeding, or congestive heart failure (CHF); or a diagnosis-related group (DRG) classification of general, orthopedic, or vascular surgery.

MAIN MEASURE

All-location mortality within 30 days of hospital admission.

KEY RESULTS

In medical and surgical patients, there were no consistent changes in the odds of mortality at more vs. less teaching intensive hospitals in post-reform years 1–3. However, there were significant relative improvements in mortality for medical patients in the fourth and fifth years post-reform: Post4 (OR 0.88, 95 % CI [0.93–0.94]); Post5 (OR 0.87, [0.82–0.92]) and for surgical patients in the fifth year post-reform: Post5 (OR 0.91, [0.85–0.96]).

CONCLUSIONS

Duty hour reform was associated with no significant change in mortality in the early years after implementation, and with a trend toward improved mortality among medical patients in the fourth and fifth years. It is unclear whether improvements in outcomes long after implementation can be attributed to the reform, but concerns about worsening outcomes seem unfounded.

Keywords

patient outcomes mortality, duty hour reform, ACGME, administrative data

Disciplines

Health and Medical Administration | Health Services Research | Other Public Health

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Teaching Hospital Five Year Mortality Trends in the Wake of Duty Hour Reforms
(Mortality Trends and Duty Hour Reform)

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Key terms: patient outcomes, mortality, duty hour reform, ACGME, administrative data

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Abstract

Background: Duty hour regulations for residents were implemented in 2003 and again in 2011 by the Accreditation Council for Graduate Medical Education (ACGME). While previous studies showed no systematic impacts in the first two years post-reform, the impact on mortality in subsequent years has not been examined.

Objective: To determine whether duty hour regulations were associated with changes in mortality among Medicare patients in hospitals of different teaching intensity after the first two years post-reform.

Design: Observational study using interrupted time series analysis with data from July 1, 2000 - June 30, 2008. Logistic regression was used to examine the change in mortality for patients in more versus less teaching-intensive hospitals before (2000-2003) and after (2003-2008) duty hour reform, adjusting for patient comorbidities, time trends, and hospital site.

Patients: Medicare patients (n=13,678,956) admitted to short-term acute care non-federal hospitals with principal diagnoses of acute myocardial infarction (AMI), congestive heart failure, or gastrointestinal bleeding; or a DRG classification of general, orthopedic, or vascular surgery.

Main Measure: All-location mortality within 30 days of hospital admission.

Key Results: In medical and surgical patients there were no consistent changes in the odds of mortality at more vs. less teaching intensive hospitals in post-reform years 1-3. However, there

were significant relative improvements in mortality for medical patients in the 4th and 5th years post-reform: Post4 (OR 0.88, 95% CI [0.93-0.94]); Post5 (OR 0.87, [0.82-0.92]) and for surgical patients in the 5th year post-reform: Post5 (OR 0.91, [0.85-0.96]).

Conclusions: Duty hour reform was associated with no significant change in mortality in the early years after implementation and with a trend toward improved mortality among medical patients in the 4th and 5th years. It is unclear whether improvements in outcomes long after implementation can be attributed to the reform, but concerns about worsening outcomes seem unfounded.

