Study examines hospital readmission and mortality rates for Medicare patients

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In a study that included data on nearly 3 million hospital admissions for Medicare beneficiaries with heart attack, pneumonia or heart failure, researchers failed to find evidence that a hospital's performance on the measure for 30-day mortality rates was strongly associated with performance on 30-day readmission rates, findings that may lessen concerns that hospitals with lower mortality rates will have higher readmission rates, according to a study appearing in the February 13 issue of *JAMA*.

"Measuring and improving hospital quality of care, particularly outcomes of care, is an important focus for clinicians and policy makers. The Centers for Medicare & Medicaid Services (CMS) began publicly reporting hospital 30-day, all-cause, risk-standardized mortality rates (RSMRs) for patients with acute myocardial infarction [AMI; heart attack] and heart failure (HF) in June 2007 and for pneumonia in 2008. In June 2009, the CMS expanded public reporting to include hospital 30-day, all-cause, risk-standardized-readmission rates (RSRRs) for patients hospitalized with these 3 conditions," according to background information in the article. "The mortality and readmission measures have been proposed for use in federal programs to modify hospital payments based on performance."

Some researchers have raised concerns that these rates might have an inverse relationship, such that hospitals with lower mortality rates are more likely to have higher readmission rates. "Interventions that improve mortality might also increase readmission rates by resulting in a higher-

risk group being discharged from the hospital. Conversely, the measures could provide redundant information. … Limited information exists about this relationship, an understanding of which is critical to measurement of quality, and yet questions surrounding an inverse relationship have led to public concerns about the measures."

Harlan M. Krumholz, M.D., S.M., of the Yale University School of Medicine, New Haven, Conn., and colleagues investigated the relationship between hospital RSMRs and RSRRs overall and within subgroups defined by hospital characteristics. The study included Medicare fee-for-service beneficiaries discharged between July 2005 and June 2008. For AMI, the sample for final analysis consisted of 4,506 hospitals with 590,809 admissions for mortality and 586,027 readmissions; for HF, 4,767 hospitals with 1,161,179 admissions for mortality and 1,430,030 readmissions; and for pneumonia, 4,811 hospitals with 1,225,366 admissions for mortality and 1,297,031 readmissions.

The researchers found that average RSMRs and RSRRs, respectively, were 16.60 percent and 19.94 percent for heart attack, 11.17 percent and 24.56 percent for heart failure, and 11.64 percent and 18.22 percent for pneumonia. The correlations between RSMRs and RSRRs were 0.03 for acute myocardial infarction, -0.17 for heart failure, and 0.002 for pneumonia. In subgroup analyses, the correlations between RSMRs and RSRRs did not differ substantially in any of the subgroups of hospital types, including hospital region, safety net status, and urban/rural status.

"In a national study of the CMS publicly reported outcomes measures, we failed to find evidence that a hospital's performance on the measure for 30-day RSMR is strongly associated with performance on 30-day RSRR," the authors write. "For AMI and pneumonia, there was no discernible relationship, and for HF, the relationship was only modest and not throughout the entire range of performance."

"Our findings indicate that many institutions do well on mortality and readmission and that performance on one does not dictate performance on the other."

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