CHSR Center for Health Services Research
Applying Research to Optimize Care©

Accounting For Patients' Socioeconomic Status Does Not Change Hospital Readmission Rates

Take Away Points

- When comparing Medicare patients of lower and higher socioeconomic status (SES), researchers from Yale's Center for Outcomes Research & Evaluation (CORE) suggest that SES minimally influences rates of hospital readmission.
- Risk adjustment for socioeconomic status would not protect safety-net hospitals from pay-for-performance penalties for high rates of hospital readmissions

The Issue

Extensive prior research documents that safety-net hospitals experience higher readmission rates (~17%), and this has been attributed to their disproportionate share of low-income patients. Other research indicates that a hospitalized patient with lower SES is more likely to be readmitted. The Centers for Medicare and Medicaid Services (CMS) Hospital Readmissions Reduction Program (HRRP) penalizes hospitals with excess readmissions; now up to a 3% deduction in all DRG payments for those with the highest rates. These

penalties totaled $420 million in "savings" for CMS in 2016, and are likely to exceed a half billion in 2017. Because these penalties disproportionately affect safety-net hospitals, members of America's Essential Hospitals and other AMCs serving low income patients advocate for risk adjustment by SES in calculations of readmission rates. However, others believe such risk-adjustment potentially excuses substandard care by these hospitals. Yale's CORE has performed much of the research on utilization by Medicare beneficiaries and developed the risk adjustment methodology for the CMS HRRP. In this study, they examined the readmission performance of hospitals caring for high proportions of patients of low socioeconomic status.

Study Methods and Design

Data Source

This analysis used Medicare administrative claims data for hospitalizations from July 1, 2007 to June 30, 2010. The patient cohort and clinical risk factors were identified by using the inpatient and outpatient Standard Analytic Files. The Medicare enrollment file was used to identify Medicare and Medicaid dual eligibility as one marker of socioeconomic status. The ZIP codes from the Standard Analytic File data was then linked to the American Community Survey from 2008 to 2012 to determine *patients' median neighborhood income* and calculate a composite of neighborhood socioeconomic indicators. Additionally, hospital characteristics were identified using the 2011 American Hospital Association data.

Patient Cohort
Individuals 65 years and older were included in the cohort if there was a documented diagnosis of acute myocardial infarction, heart failure, or pneumonia, and enrollment in Medicare one year prior to admission and 30 days after discharge. Patients who died during their hospitalization were excluded from the cohort.

Analysis
Median income of the cohort was divided into quintiles which were then placed into three groups:
(1) lowest quintile (the 20 percent of hospitals considered to have the lowest socioeconomic status),
(2) quintiles 2-4 (middle status), and
(3) highest quintile (the 20 percent having the highest socioeconomic status).

Hospitals determined to be low SES had > 90% of their measured patients living in a ZIP code with a median household income < $43, 710 versus < 1% at high SES hospitals. To determine the effect of patients with dual eligibility, hospitals were stratified into quintiles based on the percentage of patients within each measure who were enrolled in Medicare and Medicaid. Additional analyses were conducted to evaluate differences between rural and urban status as well as a sensitivity analysis using a composite socioeconomic status indicator derived from the American Community Survey.

For this analysis, readmissions were defined as an unplanned readmissions within 30 days of an eligible readmission. Risk-standardized readmission rates were calculated using the current CMS guidelines. The readmission rate for each hospital is computed as the ratio of the number of 'predicted' readmissions to the number of 'expected' readmissions at a given hospital multiplied by the national observed readmission rate.

Key Findings

- Readmission rates of hospitals caring for patients of low SES changed only 0.1% with risk adjustment for SES.
- Only 3% to 4% of low SES hospitals would move from being penalized to not with risk adjustment.
- Low socioeconomic status hospitals had fewer patients, were less likely to perform cardiac procedures, and were more likely to be public hospitals and nonteaching hospitals compared to the highest socioeconomic status hospitals

Limitations

At this time, socioeconomic status is not routinely collected and cannot be linked to singular patient-level characteristics. This study used ZIP code and proportion of patients eligible for Medicaid in a hospital's area to determine socioeconomic status. Also, regional variations, financial status, and lack of community support may influence readmission rates, which was outside the scope of this paper. This study does not assess the capability of higher SES hospitals to lower readmission rates compare to lower SES hospitals

Final Thoughts
Further research is needed to determine appropriate pay-for-performance penalties for hospitals who care for a disproportionate amount of patients with low socioeconomic status. As previously mentioned, there may be other factors that contribute to the rate of readmissions for safety-net hospitals and further research is needed to properly evaluate those factors.