

Title:

Operational Hospital Metrics and Healthcare Delivery: Exploring Disparities in Communities of Focus

Abstract:

Two measures often used to determine hospital efficiency include cause-specific 30-day readmission rate (CSR) and patient length of stay (LOS), which tracks patient hospital stays from the time of hospital admission to the time of discharge. These measures are often confounded by risk factors like disease complications, regionality, and socioeconomic differences that have made the establishment of a direct relationship between LOS and CSR unclear. By isolating the impact of different risk factors, we can identify communities at risk and correct for previously confounded hospital quality reports. To investigate the relationship between LOS and CSR across Washington state and in six local Communities of Focus (CoF) faced with poor social determinants of health, we used multivariate logistic regression on a Washington state database of inpatient hospital records ((Comprehensive Hospital Abstract Reporting System (CHARS))). We discovered that each day in the hospital correlated to a 0.5% increase in risk of CSR [Odds Ratio (OR): 1.005]. Patients aged 55-65 years had positive correlations with CSR (OR: 3.477) whereas female patients had negative correlations CSR (OR: 0.816). Finally, CoF patients had a greater chance for readmission compared to the rest of Washington state patients (OR: 3.973). Our findings suggest that patients with more LOS and for communities containing more elderly, male-populated, and CoF patients may experience higher CSR despite having equal or greater hospital resource utilization efficiency. Further, to avoid inaccurate hospital efficiency evaluations in at-risk communities, analyses should incorporate the aforementioned risk factors.