Social Determinants of Health and 30-Day Readmissions in an Urban Community Hospital in Northwest Indiana

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Background: Hospital readmission within 30 days of discharge is a quality of care indicator with implications for healthcare systems, payers, and patients. The Hospital Readmission Reduction Program enacted in 2012 aimed to reduce preventable readmissions. Yet in 2018, there were 3.8 million adult 30-day readmissions with an average rate of 14% and estimated cost of $15,200 per readmission. This study examined the influence of social determinants of health (SDOH), demographics, and health behaviors on 30-day readmissions at an urban hospital in Northwest Indiana. This is part of a Community-Based Participatory Research (CBPR) partnership between Indiana University School of Medicine-Northwest and St. Mary Medical Center (SMMC) to address SDOH.

Methods: This retrospective study analyzed a limited dataset generated by SMMC in EPIC™ with SDOH, demographics, health behaviors, and health outcomes measures from inpatient admissions between January 2021 to March 2023. Data analysis consisted of descriptive, bivariate (Chi-Square; $p<0.05$), and multivariate (binary logistic regression; $p<0.05$) analyses in SPSS 29.0. This study was exempted by the Indiana University Human Research Protection Program (IRB #14040).

Results: The sample consisted of 7445 patients, majority 65 years and above (56.5%), white (77.47%), and publicly insured (76.83%). 30-day readmissions represented 10.5% of admissions. The bivariate analysis revealed statistically significant associations between 30-day readmissions and age ($p<0.001$), language ($p=0.008$), insurance type ($p<0.001$), veteran status ($p=0.017$), and smoking ($p<0.001$). The multivariate analysis found that age (OR=1.008; $p=0.004$), being a non-English speaker (OR=1.866; $p=0.009$), public insurance (OR=2.096; $p<0.001$), and former smoking (OR=1.243; $p=0.011$) remained significantly associated with 30-day readmission.

Conclusions: Social and behavioral factors were associated with 30-day readmissions in an urban community hospital. Incorporating SDOH and behavioral interventions into hospital readmission reduction programs may reinforce these programs. The upcoming CBPR phase will conduct advanced analysis on these findings to uncover new relationships relevant to SMMC's objectives.