Researchers link health-related social needs to hospital readmissions

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Researchers at the Case Western Reserve University School of Medicine have found a clear link between the extent of a patient's social needs and hospital readmissions.

Their work demonstrates that as the extent of health-related social needs, such as unstable housing or limited economic opportunities increase, so do the odds of being readmitted to the hospital.

Their study used health system billing codes which can include data about social needs. They found that, even after controlling for other factors, patients with several social needs have much higher odds of being readmitted to the hospital within 30 days for additional care. The social needs identified include psychosocial, socioeconomic, housing, family, or employment-related issues. Researchers note that including this data in patient records and then regularly analyzing it in aggregate will help hospitals and health systems improve patient care and inform how health systems allocate community benefit investments.

Their findings were published online this month in the *Journal of General Internal Medicine* (*JGIM*).

"Many hospital care-team members and population-health scientists can tell you anecdotally that social needs contribute to health outcomes and hospital admissions," said Wyatt Bensken, a Ph.D. candidate at the School of Medicine. "This study is unique in that we demonstrated this relationship between outcomes and social needs using hospital's own coding systems and showed a dose-response relationship– meaning as social need increased, so did the odds of having a readmission."

Health care providers, hospitals and health systems rely on coding systems that use ICD-10 codes, to document and then bill for various medical procedures. The most commonly used codes reference clinically defined conditions and treatments. Less well-known are codes—called "Z codes" because they begin with the prefix Z—are also available to document employment, family, housing, psychosocial and socioeconomic status concerns. But because these codes do not affect financial reimbursement, only about 2% of coding for hospital care

includes information about a patient's social conditions.

"Tracking social needs—which we can do with the same system we use to track diagnosis and treatment—allows hospitals and health systems to understand how structural and social factors in a patient's life relate to important health outcomes, such as hospital readmission," said Philip M. Alberti, Ph.D., senior director of health equity research and policy at the AAMC (Association of American Medical Colleges) and a coauthor of the study. "This kind of research has important implications for individual patients as well as national implications for striving toward a more equitable health care system."

Researchers drew from a national database of more than 13 million adult and pediatric hospital patients from 2017. They sought to assess the 30-, 60- and 90-day readmission rate by level of ICD-10 identified social or personal needs. While not all hospitals collect detailed data (using ICD-10 Z-codes), researchers were able to extract sufficient data from hospitals that do report on these social or personal needs to make the correlation between these conditions and hospital readmission.

The study showed that:

- Among patients with no noted social needs, only 11.5% had a 30-day hospital readmission;
- Among patients with one of several social needs, 27% had a 30-day readmission;
- Among patients with five social needs, 63.5% had a 30-day readmission;
- Similar trends were observed for 60- and 90-day readmissions;
- Among patients with five social needs, 75% were hospitalized again within 90 days;
- Housing and employment were the two most commonly documented issues, while many patients also had psychosocial

issues, family issues, or other socioeconomic issues.

"Our findings point to possible uses of these coding systems to anticipate patient outcomes, and thus intervene earlier," said Siran Koroukian, Ph.D., associate professor of Population and Quantitative Health Sciences at the School of Medicine and senior author on the study. "For example, hospitals could use these findings to alert their discharge teams to include guidance on housing or other types of assistance, and work with community partners to continue addressing social needs of the patients in their care."

More information: Wyatt P. Bensken et al. Health-Related Social Needs and Increased Readmission Rates: Findings from the Nationwide Readmissions Database, *Journal of General Internal Medicine* (2021). DOI: 10.1007/s11606-021-06646-3

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