

Research finds substantial variation in readmission rate among children's hospitals

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In a national sample of 72 children's hospitals, 6.5 percent of hospitalized children experienced an unplanned readmission within 30 days, with significant variability in readmission rates across conditions and hospitals, according to a study appearing in the January 23/30 issue of *JAMA*.

"Clinicians, hospitals, [health systems](#), patients, and purchasers of health care are using readmission rates as an indicator of the quality of care that patients receive during a [hospital admission](#) and after discharge," according to background information in the article. "Although readmissions for adults have been the subject of substantial research, readmissions for children have received less attention. ... To understand potential opportunities to improve pediatric practice and reduce readmissions, information is needed on which diseases have the highest number of readmissions and whether there are differences in readmission rates across hospitals."

Jay G. Berry, M.D., M.P.H., of Boston Children's [Hospital](#), and colleagues conducted a study to examine the percentage of hospitalized children who have unplanned readmissions, which admission diagnoses have the most readmissions, and whether readmission rates vary across hospitals. The analysis included data from 568,845 admissions at 72 children's hospitals between July 2009 and June 2010 in the National Association of Children's Hospitals and Related Institutions Case Mix Comparative data set. The primary outcome measures for the study were 30-day unplanned readmissions following admission for any diagnosis and for the 10 admission diagnoses with the highest readmission prevalence.

The researchers found that the 30-day readmission rate was 6.5 percent (n = 36,734); among readmitted children, 39.0 percent (n = 14,325) were readmitted in the first 7 days and 61.6 percent (n = 22,628) in the first 14 days. Readmission rates were higher for children 13 to

18 years of age (7.6 percent) than for children ages 5 to 12 years (6.1 percent), 1 to 4 years (6.2 percent), and less than 1 year (6.2 percent).

"Adjusted rates were 28.6 percent greater in hospitals with high vs. low readmission rates (7.2 percent vs. 5.6 percent). For the 10 admission diagnoses with the highest readmission prevalence, the adjusted rates were 17.0 percent to 66.0 percent greater in hospitals with high vs. low readmission rates. For example, sickle cell rates were 20.1 percent vs. 12.7 percent in high vs. low hospitals, respectively," the authors write.

The highest rates for condition-specific unadjusted 30-day readmissions were for admissions for anemia or neutropenia (22.5 percent), ventricular shunt procedures (18.1 percent), and sickle cell anemia crisis (16.9 percent). For each condition-specific admission, 27.3 percent to 86.2 percent of readmissions were for a diagnosis involving the same organ system or a related etiology as the index admission. According to the authors, "For 9 of 10 index admission diagnoses, the most common readmission diagnosis was the same as the index diagnosis. Sickle cell had the highest percentage of readmissions (79.4 percent) that were for the same [diagnosis](#) as the index admission."

"... we found substantial readmission rate variation across children's hospitals that remained after controlling for patient age and chronic conditions. If hospitals with the highest readmission rates in this study were able to achieve the rates of the best performing hospitals, then the overall count of readmissions would be much smaller. It is possible that the distribution of pediatric [readmission rates](#) in this study could help hospitals interpret their own performance, identify target conditions for quality improvement, and determine whether an examination of the causes of their readmissions would be useful," the authors write.

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the University of Utah Health Sciences Center, Salt Lake City, and Ron Keren, M.D., M.P.H., of the University of Pennsylvania School of Medicine, Philadelphia, comment on the findings of this study in an accompanying editorial.

"More research is needed to understand to what extent pediatric readmissions are due to poor adherence to evidence-based best practices as opposed to patient and family resources and capabilities or some combination. Given that the overall rate of pediatric readmissions is 6.5 percent, clinicians, researchers, and policy makers will need to focus their efforts on conditions and patient characteristics associated with the highest baseline rate of readmissions and the greatest variation in rates across hospitals. A reasonable place to start would be with children with medical complexity who experience frequent hospitalizations and readmissions. Research needs to better determine how many readmissions are due to poor hospital quality of care vs. other reasons for readmissions and how many are preventable."

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