Frequent, potentially avoidable readmissions are major driver of pediatric health care costs

February 15 2011

Hospital readmissions are increasingly viewed as an indicator of quality of care. If patients receive appropriate discharge care planning and coordinated outpatient follow-up when leaving the hospital, they should transition safely home without the need to return to the hospital. n a retrospective study of inpatient records at 37 free-standing children's hospitals between 2003 and 2008, nearly 20 percent of admissions and one-quarter of inpatient expenditures ($3.4 billion) were accounted for by a small group (2.9 percent) of patients who were readmitted to the same hospital four or more times within a one year period, according to a study in the February 16 issue of the *Journal of the American Medical Association*.

Some children with chronic health conditions may require multiple, unavoidable, and necessary re-hospitalizations, such as for chemotherapy for leukemia, to improve their health status. However, an analysis of more than 300,000 patients found that many of the readmissions experienced by the children readmitted the most frequently might have been avoidable with improved inpatient and outpatient care coordination, care planning and community health care support, according to study authors.

In "Hospital Utilization and Characteristics of Patients Experiencing Recurrent Readmissions Within Children's Hospitals," Jay G. Berry, MD, MPH, an attending physician in the Complex Care Service at

Children's Hospital Boston, John Neff, MD, from Seattle Children's Hospital, and colleagues at six other Child Health Corporation of America (CHCA) member hospitals, examined inpatient utilization of children experiencing recurrent hospital readmissions within a 365 day interval following an index admission and evaluated their clinical and demographic characteristics and reasons for readmission.

The retrospective analysis was based on data from the Pediatric Hospital Information System, a database of hospitalization data from 37 freestanding, tertiary care pediatric hospitals. The analysis relied on administrative data and did not include direct patient health record review.

As readmission frequency increased from zero to four or more, increases were seen in:

- children ages 13 to 18 years;
- patients older than 18 years;
- patients who had public insurance;
- non-Hispanic black patients;
- patients with one or more complex chronic conditions (CCC); and
- patients requiring technology assistance.

Potentially-preventable readmissions were deemed those related to ambulatory care sensitive conditions (ACSCs) or those readmissions related to the same medical problem, such as recurring sickle cell crises.

Among patients with four or more readmissions within the 365-day interval following an initial admission, 28.5 percent were hospitalized repeatedly for a problem in the same organ system. Among the percentage of hospitalizations associated with an ambulatory care-sensitive condition (ACSC), asthma was the most common reason for admission, followed by pneumonia and seizures.

Additionally, the authors found that neuromuscular complex chronic conditions (CCCs), such as cerebral palsy or brain malformations associated with severe developmental disabilities, were the most prevalent disease group among patients frequently readmitted, and gastrostomy tubes were the most frequent medical technology utilized by these patients. The authors suggest that there may be readmissions among these children that could be considered ambulatory care sensitive but are not included within the current ACSC set. For instance, multiple readmissions for aspiration pneumonia in a child with cerebral palsy may be considered care sensitive if providers feel the readmissions are potentially reducible with coordinated surgical and ambulatory reflux, digestive motility, and oromotor dysfunction management.

Recurrent readmissions may be a difficult experience for patients and families, according to Berry, and each hospital and their surrounding community healthcare systems will need to perform a root cause analysis to determine the true reasons why some children are readmitted so frequently. "It's really daunting to think about a child and family going through four readmissions in a row–-one right after the other–-and how disruptive the hospitalizations are to their lives. It's our duty to figure out if we can mitigate these readmissions. We suspect several factors may contribute to them, including the lack of proactive care plans to implement when these children start to get sick and the communication disconnect between the acute care setting and the outpatient setting," says Berry. "Primary care physicians may not be prepared to manage patients with complex problems or technology assistance because they

have not been apprised of the details of the inpatient care or involved in the discharge planning. If they don't have clear instructions to guide them should the patient's health status worsen or have a high comfort level taking a shot at helping the patient, then the patient ends up back in the emergency room and is readmitted again. "

Patients with multiple CCCs and technology assistance often have a complicated hospital discharge process, requiring communication, proactive care planning, and follow-up appointments with primary care and multiple outpatient specialty providers, equipment specialists, and home and school nurses at discharge. According to Berry, initiatives are needed to better integrate these providers, bringing them together to systematically sort through the different factors that are causing the readmissions. Dr. John Neff from Seattle Children's Hospital and a co-author, added that many of these families are under considerable financial and personal stress, and without help managing the complexities of their child's condition at home, the child may end up back in the hospital.

Readmissions of patients with ACSCs would also be lowered with better integration between hospital and community providers. Children's Hospital Boston's Community Asthma Initiative demonstrates this. Over the last five years, the asthma management program has reduced emergency room visits by 62 percent and admissions by 82 percent. Families with children with who used to have expensive, frequent episodes of hospital care are "prescribed" asthma management plans, vacuums and new bedding to remove asthma triggers from the home, along with case management home visits, environmental assessments to detect household mold and moisture, and legal assistance to pressure landlords to remove pests and repair areas with mold or water leaks.

According to the authors, even with the best planning, future readmissions may not be preventable in children with complex chronic

health conditions if community providers and the health system are underequipped to meet the patients' health care needs, optimally manage their acute illnesses, and minimize their chronic illness exacerbations. However, the payment reform movement sweeping the nation now may begin to address these issues, says Berry. As tertiary care hospitals are driven to lower their costs, and global payment contracts require primary care providers and hospitals to share the cost risk of caring for patients, better integration and communication may be forced on healthcare providers.

More information: JAMA. 2011;305[7]682-690.

Provided by Children's Hospital Boston