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Articles

National estimates of 30-day readmissions among children hospitalized for asthma in the United States

Sreenivas P Veeranki, MBBS, DrPH , Michael U. Ohabughiro, BS , Jacob Moran, BS , Hemalkumar B. Mehta, PhD , Bill T Ameredes, MS, PhD , Yong-Fang Kuo, PhD & ...show all

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ABSTRACT

Objective: Previous single-center studies have reported that up to 40% of children hospitalized for asthma will be readmitted. The study objectives are to investigate the prevalence and timing of 30-day readmissions in children hospitalized with asthma, and to identify factors associated with 30-day readmissions. Methods: Data (n = 12,842) for children aged 6–18 years hospitalized for asthma were obtained from the 2013 Nationwide Readmission Database (NRD). The primary study outcome was time to readmission within 30 days after discharge attributable to any cause. Several predictors associated with the risk of admission were included: patient (age, sex, median household income, insurance type, county location, and pediatric chronic complex

condition), admission (type, day, emergency services utilization, length of stay (LOS), and discharge disposition), and hospital (ownership, bed size, and teaching status). Cox's proportional hazards model was used to identify predictors. Results: Of 12,842 asthma-related index hospitalizations, 2.5% were readmitted within 30-days post-discharge. Time to event models identified significantly higher risk of readmission among asthmatic children aged 12–18 years, those who resided in micropolitan counties, those with >4-days LOS during index hospitalization, those who were hospitalized in an urban hospital, who had unfavorable discharge (hazard ratio 2.53, 95% confidence interval 1.33–4.79), and those who were diagnosed with a pediatric complex chronic condition, respectively, than children in respective referent categories. Conclusion: A multi-dimensional approach including effective asthma discharge action plans and follow-up processes, home-based asthma education, and neighborhood/community-level efforts to address disparities should be integrated into the routine clinical care of asthma children.

KEYWORDS:

Asthma | readmission or repeat hospitalization | Nationwide Readmission Database

Declaration of interests

The authors declare they have no conflicts of interest related to this study.

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Guarantor statement

Dr. Veeranki takes the responsibility of the content of the manuscript, including the data and analysis.

Author contributions

All authors made a significant contribution to one or more stages of the study. Dr. Veeranki conceived the study. Drs. Calhoun, Ameredes and Kuo participated in the study design. Dr. Veeranki acquired the data, and conduct data management and analyses with assistance from Mr. Ohabughiro, Mr. Moran and Drs. Kuo, and Mehta. All authors participated in the interpretation of the results. Dr. Veeranki drafted the initial manuscript with assistance and all authors contributed to critical revisions and approved the final version of the manuscript.