Emergency Department Visits by Children With Congenital Heart Disease

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Data related to the epidemiology and resource utilization of congenital heart disease (CHD)-related emergency department (ED) visits in the pediatric population is limited. The purpose of this analysis was to describe national estimates of pediatric CHD-related ED visits and evaluate medical complexity, admissions, resource utilization, and mortality. This was an epidemiological analysis of ED visit-level data from the 2006 to 2014 Nationwide Emergency Department Sample. Patients age <18 years with CHD were identified using International Classification of Diseases-9th Revision-Clinical Modification codes. We evaluated time trends using weighted regression and tested the hypothesis that medical complexity, resource utilization, and mortality are higher in CHD patients. A total of 420,452 CHD-related ED visits (95% confidence interval [CI]: 416,897 to 422,443 visits) were identified, accounting for 0.17% of all pediatric ED visits. Those with CHD were more likely to be <1 year of age (43% vs. 13%), and to have ?1 complex chronic condition (35% vs. 2%). CHD-related ED visits had higher rates of inpatient admission (46% vs. 4%; adjusted odds ratio: 1.89; 95% CI: 1.85 to 1.93), higher median ED charges ($1,266 [interquartile range (IQR): $701 to $2,093] vs. $741 [IQR: $401 to $1,332]), and a higher mortality rate (1% vs. 0.04%; adjusted odds ratio: 1.25; 95% CI: 1.07 to 1.45). Adjusted median charges for CHD-related ED visits increased from $1,219 (IQR: $673 to $2,138) to $1,630 (IQR: $901 to $2,799), while the mortality rate decreased from 1.13% (95% CI: 0.71% to 1.52%) to 0.75% (95% CI: 0.41% to 1.09%) over the 9 years studied. Children with CHD presenting to the ED represent a medically complex population at increased risk for morbidity, mortality, and resource utilization compared with those without CHD. Over 9 years, charges increased, but the mortality rate improved.

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