Children's Hospital of Philadelphia
PolicyLab

Association of Hospital and Provider Types on Sickle Cell Disease Outcomes

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OBJECTIVES: Adolescents and young adults (A/YA) with sickle cell disease (SCD) are hospitalized in both children's and general hospitals. We determined the effect of hospital type and provider specialty on outcomes of hospitalized A/YA with SCD and acute chest syndrome (ACS).

METHODS: This retrospective cohort study used the 2007–2009 Premier Database, a large multi-institutional database, to identify 1476 patients ages 16 to 25 years with 2299 admissions with SCD and ACS discharged from 256 US hospitals from 2007 to 2009. Multilevel logistic regression and zero-truncated negative binomial regression were performed after adjustment for patient demographic, clinical, and hospital characteristics to test the association of hospital type and provider specialty on death, endotracheal intubation, simple or exchange transfusion, length of stay (LOS), and 30-day readmission.

RESULTS: Of all admissions, 14 died and 45% were intubated. General hospitals had 13 deaths and were associated with higher intubation rates (predicted probability [PP], 48% [95% confidence interval (CI), 43%–52%]) and longer LOS (predicted mean LOS, 7.6 days [95% CI, 7.2–7.9]) compared with children's hospitals (PP of intubation, 24% [95% CI, 5%–42%]; and predicted mean LOS, 6.8 days [95% CI, 5.6–5.8]). There was no difference by hospital type or provider specialty in PP of simple or exchange transfusion, or 30-day readmission.

CONCLUSIONS: General hospitals carry higher intubation risks for A/YA with SCD and ACS compared with children's hospitals. We need to better understand the drivers of these differences, including the role of staff expertise, hospital volume, and quality of ongoing SCD care.

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