

# Hospital-Level Compliance with Asthma Care Quality Measures at Children's Hospitals and Subsequent Asthma-Related Outcomes

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**CONTEXT:** The Children's Asthma Care (CAC) measure set evaluates whether children admitted to hospitals with asthma receive relievers (CAC-1) and systemic corticosteroids (CAC-2) and whether they are discharged with a home management plan of care (CAC-3). It is the only Joint Commission core measure applicable to evaluate the quality of care for hospitalized children.

**OBJECTIVES:** To evaluate longitudinal trends in CAC measure compliance and to determine if an association exists between compliance and outcomes.

**DESIGN, SETTING, AND PATIENTS:** Cross-sectional study using administrative data and CAC compliance data for 30 US children's hospitals. A total of 37,267 children admitted with asthma between January 1, 2008, and September 30, 2010, with follow-up through December 31, 2010, accounted for 45,499 hospital admissions. Hospital-level CAC measure compliance data were obtained from the National Association of Children's Hospitals and Related Institutions. Readmission and postdischarge emergency department (ED) utilization data were obtained from the Pediatric Health Information System.

**MAIN OUTCOME MEASURES:** Children's Asthma Care measure compliance trends; postdischarge ED utilization and asthma-related readmission rates at 7, 30, and 90 days.

**RESULTS:** The minimum quarterly CAC-1 and CAC-2 measure compliance rates reported by any hospital were 97.1% and 89.5%, respectively. Individual hospital CAC-2 compliance exceeded 95% for 97.9% of the quarters. Lack of variability in CAC-1 and CAC-2 compliance precluded examination of their association with the specified outcomes. Mean CAC-3 compliance was 40.6% (95% CI, 34.1%-47.1%) and 72.9% (95% CI, 68.8%-76.9%) for the initial and final 3 quarters of the study, respectively. The mean 7-, 30-, and 90-day postdischarge ED utilization rates were 1.5% (95% CI, 1.3%-1.6%), 4.3% (95% CI, 4.0%-4.5%), and 11.1% (95% CI, 10.5%-11.7%) and the mean quarterly 7-, 30-, and 90-day readmission rates were 1.4% (95% CI, 1.2%-1.6%), 3.1% (95% CI, 2.8%-3.3%), and 7.6% (95% CI, 7.2%-8.1%). There was no significant association between overall CAC-3 compliance (odds ratio [OR] for 5% improvement in compliance) and postdischarge ED utilization rates at 7 days (OR, 1.00; 95% CI, 0.98-1.02), 30 days (OR, 0.97; 95% CI, 0.90-1.04), and 90 days (OR, 0.96; 95% CI, 0.77-1.18). In addition, there was no significant association between overall CAC-3 compliance (OR for 5% improvement in compliance) and readmission rates at 7 days (OR, 1.00; 95% CI, 0.99-1.02), 30 days (OR, 0.99; 95% CI, 0.96-1.02), and 90 days (OR, 1.01; 95% CI, 0.90-1.12).

**CONCLUSION:** Among children admitted to pediatric hospitals for asthma, there was high hospital-level compliance with CAC-1 and CAC-2 quality measures and moderate compliance with the CAC-3 measure but no association between CAC-3 compliance and subsequent ED visits and asthma-related readmissions.

Authors:

Morse RB, Hall M, Fieldston ES, McGwire G, Anspacher M, Sills MR, Williams K, Oyemwense N, Mann KJ, Simon HK, Shah SS