the C-ACT or GINA guidelines, and reinforcing asthma symptom identification with the parent.


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Hospital-Level Compliance With Asthma Care Quality Measures at Children’s Hospitals and Subsequent Asthma-Related Outcomes

PURPOSE OF THE STUDY. To evaluate longitudinal trends in compliance with the Joint Commission Children’s Asthma Care (CAC) process measure set and to determine possible associations between CAC compliance and outcomes.

STUDY POPULATION. Sample of randomly selected pediatric inpatients (aged 2–17 years) with a principal discharge diagnosis of asthma.

METHODS. Administrative and CAC compliance data from 30 US hospitals were reviewed. A standardized data collection tool measured the following: (1) if children received relievers (CAC-1); (2) if they received systemic corticosteroids (CAC-2); or (3) if they were discharged with an individualized home management care plan (HPMC) (CAC-3) and subcomponent measures. Outcome measures were postdischarge emergency department (ED) utilization and asthma-related readmission rates at 7, 30, and 90 days.

RESULTS. A total of 37,267 children with 45,499 asthma hospital admissions were included. The compliance rates reported for CAC-1 and CAC-2 were high (>90%); hence, association with outcomes was not analyzed. There was interhospital and temporal variation for CAC-3 compliance (best mean value: 72.9%). Mean postdischarge ED utilization rates and quarterly readmission rates ranged from 1.5% to 11.1% and 1.4% to 7.6% at 7 and 90 days, respectively. There was no significant association between CAC-3 compliance and any of the outcome measures.

CONCLUSIONS. Compliance with CAC-1 and CAC-2 measures in pediatric hospitals was high. The lower compliance with the CAC-3 measure was not linked to ensuing ED visits and readmissions.

REVIEWER COMMENTS. The findings of this study are reassuring in that use of bronchodilators and systemic steroids in patients hospitalized for asthma is standard of care. The CAC-3 measure, in its current form, indicates that an HPMC document was completed and given to the patient. However, the quality and methods of executing the interventions postdischarge in the HPMC were not evaluated. The outcome measure may be inappropriate in its expectation that high-quality discharge leads to a decrease in ED/hospital “bounce-backs.” Therefore, pending an established link between CAC-3 compliance and improved outcomes, the Joint Commission should reassess the use of the CAC-3 component as an “accountability measure” appropriate for public reporting, accreditation, or pay for performance.


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Low Rates of Controller Medication Initiation and Outpatient Follow-up After Emergency Department Visits for Asthma

PURPOSE OF THE STUDY. To determine what proportion of patients who are seen in the emergency department (ED) for asthma receive inhaled corticosteroids (ICSs) or attend follow-up appointments.

STUDY POPULATION. The sample included a total of 3435 patients in the South Carolina Medicaid database between 2007–2009 aged 2 to 18 years with an ED visit for asthma. Patients who were in the top 99th percentile for total number of ED visits, had been admitted for asthma, or had an ICS claim in the 2 months preceding the ED visit were excluded.

METHODS. The study was a retrospective cohort analysis. The diagnosis of asthma was identified by using International Classification of Diseases, Ninth Revision, Clinical Modification codes. ED visits were identified by using Current Procedural Terminology codes and by an ED flag provided in the data set. Pharmacy claims filled were examined to identify ICSs, ICSs/long-acting β-agonists, and leukotriene modifiers. The primary and secondary outcomes were a pharmacy claim for any ICS or ICS/long-acting β-agonist during the month of or the month after the ED visit and any outpatient visit with a primary diagnosis of asthma within 2 months after the ED visit, respectively. Data on gender, age, race, rural residence, and asthma severity also were collected.

RESULTS. Only 18% of the patients filled a prescription for an ICS during either the month of or the month after the ED visit, and only 12% of patients attended an outpatient follow-up appointment within the 2 months after the ED visit. In addition, only 5.2% of patients received an ICS and attended a follow-up visit for asthma. Patients aged 7 to 12 years were more likely to receive ICSs or leukotriene modifiers and attend follow-up appointments.

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Outcomes Following Admission to Intensive Care for Asthma

PURPOSE OF THE STUDY. To describe the subsequent course of children who are admitted to an ICU for asthma.

STUDY POPULATION. All children with asthma aged 2–18 years admitted to the ICU at the Royal Children’s Hospital Melbourne between 1990 and 2004.

METHODS. Data were collected by reviewing medical records and through telephone interviews.

RESULTS. A total of 410 children were identified, with a mean duration of follow-up of 10.3 ± 4.6 years. Twelve patients (1.8%) subsequently died of asthma (5% of those who required ventilation at their index admission). Risk factors for mortality were multiple ICU admissions (adjusted odds ratio [aOR]: 5.0; 95% confidence interval [CI]: 1.3–19) and mechanical ventilation (aOR: 4.5; 95% CI: 1.3–15.7). Sixty-seven percent of patients were readmitted to the hospital for asthma at least once, with 17% readmitted to the ICU. Risk factors for ICU readmission were admission for asthma in the preceding year (aOR: 4.7; 95% CI: 2.4–9.3) and mechanical ventilation (aOR: 2.4; 95% CI: 1.0–5.3).

CONCLUSIONS. Admission to the ICU for asthma is a predictor of hospital readmission. Those who require ventilation are at significant risk of mortality.

REVIEWER COMMENTS. Although asthma mortality has declined to some extent in recent years, children continue to die of this disease. Most of these deaths are almost certainly preventable. Children who have required admission to the ICU and especially those who have required mechanical ventilation are at much higher risk and deserve close monitoring and follow-up in a specialty clinic.

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Adherence to Inhaled Corticosteroids: An Ancillary Study of the Childhood Asthma Management Program Clinical Trial

PURPOSE OF THE STUDY. To compare subjective and objective measurements of adherence to inhaled corticosteroids versus placebo and to determine if adherence to study medications modified treatment-related outcomes.

STUDY POPULATION. One hundred forty children aged 5 to 12 years who were diagnosed with mild or moderate asthma were enrolled from 3 of 8 sites from the Childhood Asthma Management Program (CAMP) study.

METHODS. This was a prospective study over a 4-year study period. The study population was categorized with mild or moderate asthma based on criteria established in the CAMP trial. Subjects were randomly assigned to receive either placebo, budesonide, or nedocromil twice daily over 4 years; those in the placebo and budesonide arms were included in this ancillary adherence report from 3 centers. Adherence measures were categorized as either self-reported or objective. Self-reported adherence consisted of daily diary entries by patient or caregiver that were reviewed at follow-up visits every 4 months. Objective adherence measures included counting the doses remaining in the Turbuhaler device (ie, doses dispensed).

RESULTS. Objective adherence measurements were significantly lower than self-reported adherence measurements. There was poor agreement between self-reported and objective measures of adherence, with 75% of participants demonstrating 80% adherence by objective measurements, whereas only 5.8% of self-reported adherence values were <80%. Self-reported adherence overestimated objective adherence measures by 30% (93.6% vs
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