Community Asthma Initiative: Evaluation of a Quality Improvement Program for Comprehensive Asthma Care

**PURPOSE OF THE STUDY.** To evaluate the cost-effectiveness of a quality improvement (QI) program in decreasing asthma emergency department (ED) visits, hospitalizations, limitation of physical activity, patient missed school, and parent lost work.

**STUDY POPULATION.** Urban, low-income patients with asthma from 4 Boston-area zip codes were determined through records of ED visits or hospitalizations.

**METHODS.** The selected families were given the option of increased care encompassing nurse care management and home visits. QI assessment centered on parent interviews at enrollment and at 6- and 12-month contacts. Administrative hospital information was used to evaluate ED visits and hospitalizations at enrollment and 1 to 2 years after enrollment. Hospital expenditures of the program were compared with hospital expenditures of a comparable neighboring community.

**RESULTS.** The program serviced 283 children (55% male; ~40% African American, 52% Latino; 73% received Medicaid; 71% had household income <$25 000). The 12-month results demonstrated significant decline in any (≥1) asthma ED visits (68%), hospitalizations (85%), days of significant physical limitation (42.6%), missed school (41%), and parent lost work time (49.7%) (P < .0001 for all). There was a significant decline in hospital expenditures compared with comparable community costs (P < .0001), and the investment return was calculated at 1.46.

**CONCLUSIONS.** The study program generated enhanced health outcomes and cost-effectiveness and provided knowledge that will guide future advocacy to finance comprehensive asthma management.

**REVIEWER COMMENTS.** Despite the limitations of this study, which was not randomized and did not have comparable hospital administrative data on controls, the community asthma program provided a cost-effective home chronic care model. This model of a medical home is a culturally sensitive program conjoining case management and home visits to facilitate the management of patients who require a higher level of care to achieve better control of their asthma.

Parent Misperception of Control in Childhood/Adolescent Asthma: The Room to Breathe Survey

**PURPOSE OF THE STUDY.** To compare parent and child subjective assessments of asthma severity and control by using validated measures such as the Childhood Asthma Control Test (C-ACT) and the Scottish Intercollegiate Guidelines Network/British Thoracic Society (BTS) definitions of control.

**STUDY POPULATION.** Families (N = 1284) with a child who had physician-diagnosed asthma who lived in Canada, Greece, Hungary, Netherlands, United Kingdom, or South Africa were included in this cross-sectional survey.

**METHODS.** Families were interviewed by using a telephone survey, which included the C-ACT and Global Initiative for Asthma (GINA)/BTS guidelines and subjective questions on asthma symptoms, severity, and control.

**RESULTS.** Overall, 34.9% of children/adolescents reported a severe asthma attack requiring oral corticosteroids or hospitalization; >50% of the children had awakened at night at least once due to their asthma in the past 4 weeks and two-thirds of the children had used reliever medication in the past 4 weeks. Thirty-three percent of the parents described their child’s asthma as intermittent, 39.9% as mild, 21.1% as moderate, and 6% as severe. Forty percent of subjects had a C-ACT score <19 (indicating poor control); 85% of children/adolescents had incompletely controlled asthma as defined according to GINA guidelines. Thirty-eight of 42 children who described their asthma as “very bad” had poor asthma control according to GINA guidelines; there was poor agreement between parents’ and children’s scores (κ score: 0.119).

**CONCLUSIONS.** Parents often overestimate their child’s asthma control as measured by the comparison between the telephone survey questionnaire and the C-ACT and GINA or BTS/Scottish Intercollegiate Guidelines Network guidelines. The child’s self-reporting of asthma severity showed a stronger correlation with guideline-defined asthma control than the parent’s reporting of the child’s asthma severity.

**REVIEWER COMMENTS.** These results underscore a common clinical observation, that asking parents to assess a child’s asthma status might paint a falsely positive picture. The authors suggest that parents might have difficulty recognizing their child’s asthma symptoms. Thus, these results should encourage clinicians to assess control with pediatric patients by directly asking the child about asthma symptoms, administering validated questionnaires such as
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 outcomes measured.

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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