mary care providers (PCPs) would increase adherence with the National Asthma Education and Prevention Program guidelines and whether this would improve medical service utilization.

STUDY POPULATION. Children between 6 months and 18 years of age (n = 8324) who presented for care at any of 6 primary care clinics in Hartford, Connecticut, between 1998 and 2002 and had enrolled in either Medicaid or the State Children’s Health Insurance Plan (SCHIP).

METHODS. Enrollment in the Easy Breathing asthma management program for PCPs included completing a survey regarding the child’s clinical history, provider assessment of asthma severity, and a written asthma treatment plan for the caregiver. Providers underwent training in the Easy Breathing curriculum. Data regarding demographics for enrolled patients were obtained from the survey and compared with all resident children in Hartford. Claims data were obtained. Utilization of medical services and prescriptions was examined. Children were continuously enrolled in the program during the 4-year analysis period. Relative rates of utilization (in event/child-months) were compared for the same children before and after enrollment.

RESULTS. Of the 1799 children with persistent asthma, only 38% were treated with antiinflammatory therapy before Easy Breathing; after enrollment, this improved to 96%, with 85% of those treated specifically with an inhaled corticosteroid. After enrollment in Easy Breathing, the rate of hospitalization for all children with asthma decreased 35% (P < .006), and the decrease was sustained over 3 years. There was a 27% overall decrease in emergency department (ED) visits for asthma (P < .01) and less seasonal variation in hospitalizations. Adjusted relative rates for total and asthma-specific ED and hospital visits decreased significantly for children with persistent asthma. Decreases in adjusted rates of outpatient visits after enrollment were also found for children overall (19%; P < .0001). This was true for children with intermittent asthma (22%; P < .001) and persistent asthma (18%; P < .001).

CONCLUSIONS. Adherence to National Asthma Education and Prevention Program guidelines by PCPs managing asthma for low-income minority children decreased their total number of hospitalizations and asthma-specific ED visits and outpatient visits. The authors believe that contributors to the success of the program include the standardized approach to therapy, including inhaled corticosteroids when indicated, as well as the development of a written, individualized asthma treatment plan. The benefits of the program continued through the 3 years.

REVIEWER COMMENTS. Despite a few limitations (nonrandomized, use of claims data), this study strongly reinforces the idea that improving asthma management relies not only on patient adherence but also physician review and faithful implementation of the current guidelines. PCPs managing asthma in low-income, urban, minority children would benefit the community by participating in such standardized programs that are focused on diagnosis and treatment. This not only decreases the morbidity related to asthma in these children but also alleviates the financial burden involved in excessive utilization of medical services.

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Saba Sharif, MD
Michael S. Kaplan, MD
Los Angeles, CA

A Multisite Randomized Trial of the Effects of Physician Education and Organizational Change in Chronic Asthma Care: Cost-effectiveness Analysis of the Pediatric Asthma Care Patient Outcomes Research Team II (PACI PORT II)

PURPOSE OF THE STUDY. To estimate the cost-effectiveness of 2 different asthma care interventions: a peer leader–based physician behavior-change intervention (PLE) and a practice-based redesign called the planned asthma care intervention (PACI).

STUDY POPULATION. Participants were 638 children (aged 3–17 years) with mild-to-moderate asthma. More than half of the subjects were on maintenance medication.

METHODS. This was a 3-arm cluster-randomized trial conducted in 42 primary care practices. These practices were randomly assigned to PLE (n = 226), PACI (n = 213), or usual care (n = 199). The PLE strategy involved training a pediatrician at each of the practice sites as an asthma expert and champion. This leader provided support, education, and feedback to the other members of the practice with regard to asthma management. The PACI strategy included all the components of the PLE arm and also included scheduled asthma care visits with an asthma nurse, who provided standardized assessments, care planning, coordination with the primary care physician, and self-management tools. Practices in the usual-care arm received copies of the National Asthma Education and Prevention Program Expert Panel Report 2 and patient-information handouts 12 months into the study. The subjects were followed for 2 years. The primary outcome was symptom-free days (SFDs). Costs included asthma-related health care utilization and intervention.

RESULTS. Patients in the usual-care arm of the study had in increase in SFDs of 14.8 per year. Patients in the PLE and
PACI arms had an additional gain of 6.5 and 13.3 SFDs per year, respectively, compared with the usual-care arm. When the costs of development were excluded, the cost for SFDs gained compared with usual care was $18 for PLE and $68 for PACI.

CONCLUSIONS. It is possible to increase SFDs in children and to move organizations toward guideline recommendations for asthma management. However, the improvements were associated with an increase in the costs associated with asthma care.

REVIEWER COMMENTS. This trial was designed to provide cost analyses to both health care providers and health maintenance organizations. It is difficult, however, to establish a threshold for cost-effectiveness. The authors cite other trials to provide a context for this question. For example, the cost-effectiveness of inhaled corticosteroids in the treatment of children ranges from $7 to $12 per SFD gained. A social worker–based intervention had a cost-effectiveness ratio of $9 per SFD gained. What is it worth to patients, their families, and their health care providers to have an extra SFD?

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Brian A. Smart, MD
Glen Ellyn, IL

**A Randomized Trial of Primary Care Provider Prompting to Enhance Preventive Asthma Therapy**


**PURPOSE OF THE STUDY.** To determine if systematic school-based asthma screening, coupled with primary care provider notification of asthma severity, would prompt providers to prescribe a new preventive medication or change a current dose.

**STUDY POPULATION.** The study included 151 children (aged 3–7 years) with mild persistent to severe asthma living in an urban setting.

**METHODS.** A routine school health-and-development form was sent to parents of schoolchildren. When asthma was indicated on this form, the parents were contacted by telephone. To be eligible for the trial, the child’s parent needed to report that a physician had diagnosed their child as having asthma, and the child’s symptoms needed to be consistent with mild persistent asthma or worse according to National Heart, Lung, and Blood Institute guidelines. The intervention arm of the study involved notification of the primary care providers via fax of the child’s symptoms and recommendations for action on the basis of national criteria. Confirmation of receipt was received from 90% of providers. In the control arm of the study, primary care providers were not contacted. Interviewers then contacted the parents 3 to 6 months later to determine if preventive actions were taken.

**RESULTS.** Children in the provider-notification group were not more likely to receive a preventive medication action than children in the control group (21.9% vs 26%). Additional preventive measures such as encouraging compliance with medications, recommending environmental modifications, and referrals to specialty care also did not differ between the 2 groups. The only factors that significantly predicted the occurrence of a preventive action were acute visits for asthma and baseline use of preventive medications. At the end of the study, 52.4% of children in both groups with no medications change were still experiencing symptoms.

**CONCLUSIONS.** School-based asthma screening identified many symptomatic children in need of medication modification, but notification of their primary care providers did not improve preventive care.

**REVIEWER COMMENTS.** Asthma is a complex disease, and there are many barriers to effective care. These barriers include steroid phobia, cost of medication, denial of the presence or severity of the disease, access to health care, exposure to asthma triggers, and poor adherence to treatment. It is concerning that another barrier to effective care of asthma, as illustrated by this study, is a poor response of health care providers to supportive education, such as treatment guidelines. In an effort to better understand this deficit, the authors queried the providers: “Was the information in the original notification helpful?” Only 27 of 73 providers responded: 10 said the information was helpful (7 changed medications); 9 replied that their patients had mild, intermittent asthma and did not need changes; 4 replied that their patients already were on preventive medications; and 4 replied that they were unable to contact their patients for follow-up.

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Brian A. Smart, MD
Glen Ellyn, IL

**Asthma-Related Health Care Resource Use Among Asthmatic Children With and Without Concomitant Allergic Rhinitis**


**PURPOSE OF THE STUDY.** To determine the incremental effect of allergic rhinitis on health care resource use in children with asthma.
A Multisite Randomized Trial of the Effects of Physician Education and Organizational Change in Chronic Asthma Care: Cost-effectiveness Analysis of the Pediatric Asthma Care Patient Outcomes Research Team II (PAC-PORT II)

Brian A. Smart

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Brian A. Smart

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