factors, such as lack of access to health care and psychosocial issues, were also noted.

**Reviewers’ Comments.** This article presents several key risk factors for life-threatening asthma that may assist health care providers in recognizing those high-risk asthmatics. There were some weaknesses of the study that were also mentioned by the author, including the lack of a control group, the fact that data were based on self-or proxy reportings, and that the study was limited to 1 urban community. Overall, however, any data on the risk factors for fatal asthma are worth noting.

SALLY Joo, MD
ROBERT A. Wood, MD
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THE BURDEN OF INFLUENZA ILLNESS IN CHILDREN WITH ASTHMA AND OTHER CHRONIC MEDICAL CONDITIONS

Neuzil KM, Wright PF, Mitchel EF, M.S., Griffin MR. *J Pediatr.* 2000;137:856–864

**Purpose of the Study.** To measure the burden of influenza among children with asthma and other medical conditions, many of whom do not receive influenza vaccination.

**Study Population.** Study participants included black and white children aged <15 years who were enrolled in the Tennessee Medicaid program from 1973–1993. Three high-risk patient categories were included: asthma, other lung disease, and other chronic disease. The second data set included ongoing prospective virus surveillance system at Vanderbilt University, which permits precise definition of the influenza season on an annual basis.

**Methods.** A retrospective cohort analysis was used to determine the rates of hospitalization for acute cardiopulmonary disease, outpatient visits, and antibiotic courses throughout the year. Annual differences between event rates when influenza virus was circulating and event rates during winter months when there was no influenza in the community were used to calculate influenza-attributable morbidity.

**Results.** Influenza accounted for an average of 19, 8, and 2 excess hospitalizations for cardiopulmonary disease yearly per 1000 high-risk children aged <1 year, 1 to <3 years, and 3 to <15 years, respectively. For every 1000 children, an estimated 120 to 200 outpatient visits and 65 to 140 antibiotic courses were attributed to influenza annually. Specifically in the group of asthmatic children <15 years, an estimated 10% to 20% had an additional outpatient visit during an average influenza season, and approximately 14% of these children received an additional antibiotic prescription.

**Conclusions.** Children <15 years with asthma and other chronic medical conditions experience substantial morbidity requiring inpatient and outpatient care during the influenza season. The hospitalization rates in this study are comparable to rates in adult high-risk populations for whom influenza vaccination is recommended. More effective targeting of this population for annual influenza immunization is warranted.

**Reviewer’s Comments.** Despite an increase in published medical evidence supporting the benefits of immunizing children with chronic lung diseases, particularly asthma, the rates of actual vaccination remain low. For example, in the United States, it is estimated that only up to 25% of children with moderate to severe asthma receive the influenza vaccine. In an average year, up to 30% of children will be infected with influenza, and this disease may cause substantial morbidity in children with and without chronic illnesses such as asthma. Current vaccine coverage rates for influenza among children with asthma remain unacceptable and creative strategies to utilize this preventive therapy, especially in patients with asthma, will continue to be a challenge that health care providers need to resolve.

JOHN M. JAMES, MD
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DOES INFLUENZA VACCINATION PREVENT ASTHMA EXACERBATIONS IN CHILDREN?


**Objective.** Influenza is known to aggravate asthma; however, the effectiveness of the influenza vaccine in preventing influenza-related asthma is not known.

**Study Population.** Children 1 through 6 years old with asthma from 4 large health maintenance organizations.

**Methods.** This was a population-based, retrospective cohort study that used medical and vaccination records from 4 large health maintenance organizations within the United States during the 1993–1994, 1994–1995, and mid-1995–1996 influenza seasons. Children with asthma were identified by searching computerized databases of medical encounters and pharmacy records. The main outcome measures were exacerbations of asthma that were treated in the emergency room or hospital.

**Results.** Unadjusted rates of asthma episodes were higher after influenza vaccination than before vaccination. However, after adjusting for asthma severity, the incidence rate ratios of asthma exacerbations after vaccination were 0.78, 0.59, and 0.65 compared with the period before vaccination during the 3 respective influenza seasons.

**Conclusion.** After controlling for asthma severity, the authors found that influenza vaccination protects against acute asthma exacerbations in children.

**Reviewer’s Comments.** This is a useful study in that it supports the recommendation to provide influenza vaccinations to children with asthma, especially for those children with more severe asthma. Although other viruses clearly cause more asthma exacerbations than influenza, at least this one can be prevented. Additional prospective studies in larger populations to confirm these results would be very helpful.

CHRISTOPHER RANDOLPH, MD
Waterbury, CT

INSIGHT INTO PATIENT DISSATISFACTION WITH ASTHMA TREATMENT


**Purpose.** Measures of patient satisfaction or dissatisfaction with treatment are increasingly being used as indicators of quality of care. As these measures become more widely used, it is important to know if patient dissatisfaction is associated with important processes or outcomes of medical care.

**Patient Population and Methods.** Survey of patient-reported asthma management issues using the Asthma Therapy Assessment Questionnaire in a Kaiser health maintenance organization in the Pacific Northwest. Associations between patient dissatisfaction with asthma treatment and patient-reported measures of asthma control, patient-provider communication, and belief in asthma medications (self-efficacy) were examined.
Results. Of the 5181 adult members with asthma enrolled in the health maintenance organization, 30% indicated dissatisfaction with current treatment. Dissatisfaction was higher among patients with a higher number of asthma control problems, patient-provider communication problems, or belief in medication problems (eg, failure to believe their medications are useful and inability to take asthma medications as directed). The odds of dissatisfaction with treatment were 2.8 (95% confidence interval [CI]: 2.4–3.3; P < .001) for asthma control problems, 2.0 (95% CI: 1.6–2.6; P < .001) for communication problems, and 8.0 (95% CI: 6.7–9.5; P < .001) for belief in medication problems compared with patients without these perceived problems.

Conclusion. Patient dissatisfaction with treatment may be related to important asthma disease management issues.

Reviewer’s Comments. We’ve seen this sort of stuff before. The twist here is the asthma care provided by physicians with “self-reported expertise” in addition to specialists. This suggests that primary care physicians who are willing to gain knowledge in asthma care and devoted the necessary time required, can achieve outcomes similar to specialists.

Allen Adinoff, MD
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MATERNAL DEPRESSIVE SYMPTOMS AND EMERGENCY DEPARTMENT USE AMONG INNER-CITY CHILDREN WITH ASTHMA


Purpose of the Study. Inner-city minority children with asthma use emergency departments (EDs) frequently. This study examines whether maternal depressive symptoms are associated with this increased ED use.

Study Population. Children in kindergarten to fifth grade from inner-city schools in Baltimore and Washington, DC, were eligible for enrollment in the study. Children from these schools were eligible if they had an asthma diagnosis listed on their health records and their mothers reported that they had 1) asthma diagnosed by a physician, 2) day or night asthma symptoms, including wheezing, shortness of breath, and/or a cough at least once a week during the past 2 weeks, and/or 3) at least 1 visit for asthma to the ED in the previous 6 months or 1 overnight hospitalization for asthma in the previous year. Ninety-eight percent of the children were African American. One hundred fifty-eight of 338 respondents participated in both the baseline and follow-up surveys.

Methods. Telephone surveys were conducted at baseline and 6 months to evaluate ED use relative to child and maternal measures. The primary outcome measure was the number of ED visits (that did not result in hospitalization) reported by the mother between the baseline and 6-month follow-up interview. Independent variables evaluated included asthma morbidity, maternal age, maternal depressive symptoms (as measured by the Center for Epidemiologic Studies–Depression Scale), and other psychosocial data.

Results. Among mothers, nearly half reported significant levels of depressive symptoms. There were no demographic or asthma-related differences between the children of mothers with high and low depressive symptoms. However, in bivariate analyses, mothers with high depressive symptoms were 40% (prevalence ratio [PR]: 1.4; 95% confidence interval [CI]: 1.0–1.9; P < .05) more likely to report taking their child to the ED. Mothers aged 30 to 35 years were more than twice as likely (PR: 2.2; 95% CI: 1.9–2.5; P < .001) to report ED use, as were children with high morbidity (PR: 1.9; 95% CI: 1.4–7.1; P = .006). Child age and family income were not predictive of ED use. After controlling for asthma symptoms and mother’s age, mothers with depressive symptoms were still 30% more likely to report ED use.

Conclusions. Depression is common among inner-city mothers of children with asthma. Beyond asthma morbidity, maternal age and depressive symptoms are strong predictors of reports of ED visits. Identifying and addressing poor psychological adjustment in mothers may reduce...
# Insight Into Patient Dissatisfaction with Asthma Treatment

**Allen Adinoff**  
*Pediatrics* 2002;110;453

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Allen Adinoff
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