Asthma severity, etc. Nonetheless, this study points the way to future research about and implementation of new systems of asthma care.

**ASTHMA AMONG HOMELESS CHILDREN: UNDERCOUNTING AND UNDERTREATING THE UNDERSERVED**


**Purpose of the Study.** To determine the prevalence of asthma among a population of homeless children.

**Study Population.** A total of 740 children whose families entered 3 family shelters in New York City, New York, from June 1998 to September 1999, representing 75% of all children entering these shelters.

**Methods.** On entry into the shelters, the investigators attempted to screen children with a 1-page, 11-item survey that included questions about daytime and nighttime symptoms, previous diagnosis of asthma, current medications, use of an emergency department for respiratory symptoms, and demographic characteristics. The asthma-symptom questions were coded to allow for staging as outlined in nationally recognized guidelines. The validity of the screening instrument was assessed by comparing the screening results of 117 children with a clinical assessment by a pediatrician or pediatric nurse practitioner. With this assessment, the sensitivity of the screening instrument was 77%, and the specificity was 92%.

**Results.** The prevalence of asthma in the children who were screened was 39.8%, with 26.9% having a prior physician diagnosis of asthma and 12.9% having no prior diagnosis but symptoms consistent with moderate to severe asthma. Furthermore, 50.3% of these children had current symptoms consistent with mild intermittent to severe asthma. Of those children who were <5 years old, 34.2%, 9.8%, 30.1%, and 25.9% had current symptoms consistent with mild intermittent, mild persistent, moderate, and severe asthma, respectively. Of those children who were ≥5 years old, 45%, 17%, 18%, and 20% had current symptoms consistent with mild intermittent, mild persistent, moderate, and severe asthma, respectively. Of those children with a prior physician diagnosis of asthma, the percentage of patients receiving anti-inflammatory treatment was 4%, 11%, 16%, 28%, and 20% for patients with no symptoms and current symptoms consistent with mild intermittent, mild persistent, moderate, and severe asthma, respectively. Finally, 48.6% of children with current asthma symptoms consistent with severe asthma visited an emergency department in the last year for respiratory symptoms, whereas 54.9% of severe asthmatics (and 68% of mild persistent asthmatics) with a prior physician diagnosis of asthma visited an emergency department in the last year for respiratory symptoms.

**Conclusions.** The data suggest that the routine use of a screening instrument for asthma would identify many at-risk children, an essential first step to providing them with appropriate medical care. Another remarkable finding is the low rate of use of anti-inflammatory medication even among severe asthmatics. This finding, taken along with the high rate of use of emergency department care for respiratory symptoms, provides evidence for a high rate of undertreatment of asthma among homeless children.

**Reviewer’s Comments.** This study, which provides evidence for a surprisingly high rate of asthma among homeless children, as well as undertreatment with anti-inflammatory medication and overuse of the emergency department, should be viewed by health care providers as a call to action. The medical system seems to have failed these children, and new approaches to their care are worth considering, such as routine screening for asthma, regular visits with primary care providers, and education of caregivers about asthma.

**A SCHOOL-BASED CASE IDENTIFICATION PROCESS FOR IDENTIFYING INNER CITY CHILDREN WITH ASTHMA: THE BREATHMOBILE PROGRAM**


**Purpose of the Study.** To evaluate the effectiveness of a school-based screening survey to detect asthma in a large population of inner-city schoolchildren.

**Study Population.** Parents of schoolchildren in the Los Angeles, California, area.

**Methods.** A bilingual 7-question self-administered parental asthma-screening survey was administered to 675 consecutive parents before enrolling their children in a free mobile asthma program, the Breathmobile. Participants were recruited by either fliers distributed at the school or referral from school nurses. Surveys were validated by comparing responses to the presence and severity of asthma as determined by the allergist evaluating the patient on the Breathmobile using National Heart, Lung, and Blood Institute guidelines. The surveys (n = 27 526) then were distributed to 1212 classrooms in 24 participating schools, with incentives offered to the teachers for high return rates.

**Results.** For survey validation, parental responses for 636 children were compared with physician classification, and the combination of questions that provided the best overall sensitivity and specificity were determined. Based on this algorithm, an abbreviated 5-question survey was developed with a positive classification resulting from a “yes” to asthma diagnosis or to any 3 of the following: chest tightness, trouble breathing, or exercise-induced and daytime symptoms. This survey was evaluated in a larger population of schoolchildren, yielding a sensitivity of 83.4%, specificity of 85.4%, positive predictive value of 93.9%, and negative predictive value of 65.5%. Offering a $25 school-supply gift-certificate incentive increased survey return rates from 35.3% to 65%, with return rates of ≥80% in many classrooms. A prevalence estimate of 14.1% children with probable asthma in Los Angeles schoolchildren was calculated by using this model.

**Conclusions.** The abbreviated 5-question survey yielded similar results when compared with the 7-question original survey. The surveys were easily distributed and analyzed with limited personnel using scanning software. The survey has been a useful tool for screening schoolchildren who may benefit from Breathmobile services and is an effective screening tool to identify children with probable asthma in this population of inner-city schoolchildren.

**Reviewer’s Comments.** This article describes the utility of a brief survey in identifying children with asthma in an inner-city, primarily Hispanic population. This survey has been used by the Los Angeles Breathmobile to screen >25 000 children, and it has been the model for similar surveys used by the 4 other Breathmobile programs in the country. Jones et al should be commended for their trail-
### Asthma Among Homeless Children: Undercounting and Undertreating the Underserved

Brian A. Smart

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