

Inner-city asthma: Control can be achieved!

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The article by Scott et al¹ entitled “Achieving and maintaining asthma control in inner-city children” in this month’s issue of the *Journal* demonstrates that, through the use of mobile school-based clinics, guidelines-based asthma care can and is being delivered regularly and effectively to children known to have the highest degree of asthma-associated morbidity: those who reside in our inner cities. This finding is a very encouraging one because regular receipt of quality asthma care, which is often difficult in these populations, is known to be critically necessary in achieving long-term asthma control.

ASTHMA MORBIDITY IN THE INNER CITY

It has been known for many years that asthma-associated morbidity has been increasing in the United States and that inner-city minority populations are disproportionately affected.² During the years 1980 through 2005, a US Centers for Disease Control and Prevention report found that non-Hispanic black and Puerto Rican children had higher asthma prevalence rates compared with non-Hispanic white children and that black children had a 260% higher emergency department (ED) visit rate, a 250% higher hospitalization rate, and a 500% higher death rate compared with white children.³ Moreover, although ambulatory care visits for asthma have increased since 2000, there has been a lower rate of ambulatory care visits noted among black children compared with white children, suggesting that black children underuse ambulatory care services.

Ginde et al⁴ also saw similar trends when they examined data from the National Hospital Ambulatory Medical Care Survey 1993-2005. Although the national asthma-related visit rate to EDs decreased by 25% from 1998 to 2005 in white subjects, the rate for black subjects was constant. The asthma-related ED visit rate was shown to be highest in this group, as well as in Hispanic subjects, children less than 10 years of age, women, and patients with asthma living in the northeastern United States.

Importantly, access to primary care does not appear to be the reason behind the increasing asthma morbidity seen in minority populations. Flores et al,⁵ on examining 220 minority children

who had had an ED visit or inpatient admission for asthma, found that 92% of the children had a primary care provider. However, despite having this care, only 44% of the children had an asthma action plan, and only 17% had an asthma specialist. Moreover, the majority of the children studied used the ED for their source of usual asthma care. Kruzick et al⁶ also found that children with asthma in the Denver Public Schools had poorly controlled asthma despite having a primary care provider.

US ASTHMA INITIATIVES

In the early 1990s, the National, Heart, Lung, and Blood Institute formed the National Asthma Education and Prevention Program to address the growing asthma problem in the United States. More specifically, this panel focused on 3 main issues: asthma prevalence and the fact that it was increasing, asthma morbidity and the fact that it was affecting certain populations disproportionately, and asthma pathogenesis. The program, which consisted of a multidisciplinary group of asthma specialists, was tasked with the development of guidelines for the diagnosis and management of asthma that were to be based on current science. The guidelines that were developed,⁷ along with those from the global asthma initiative,⁸ form the basis of the asthma-management “bible” that is used throughout the country and the world.

In addition to the efforts launched by the National, Heart, Lung, and Blood Institute, the National Institute of Allergy and Infectious Diseases similarly focused its attention on the growing asthma-based health concern. In 1991, it launched a comprehensive program, one that focused on one of the populations at greatest risk for asthma-associated morbidity: children with asthma who lived in poor urban communities. The first study that was performed by this agency was the National Cooperative Inner-City Asthma Study, and its first phase was an observational study designed to capture use and symptom data for a large sample of inner-city children with asthma. A total of 1528 children aged 4 to 9 years were evaluated, with eligibility being inner-city residence, a physician’s diagnosis of asthma, and the presence of asthma symptoms within the last year. The results of this observational study, published by Kattan et al⁹ in 1997, showed that this group of children not only had frequent asthma symptoms but also that they had difficulty accessing regular follow-up asthma care and tended to have numerous aeroallergen sensitivities.

A number of important findings were gleaned from this first National Institute of Allergy and Infectious Diseases-sponsored network. First, it confirmed that multiple factors, including poor access to quality care, psychological issues, and poor understanding of controller medication importance and use, contribute to asthma-associated morbidity in inner-city children. Moreover, it showed that a key environmental factor, specifically cockroach allergen sensitization and exposure, is an important determinant of asthma outcomes in these children.^{10,11} These initial National

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Cooperative Inner-City Asthma Study findings thus set the stage for several subsequent National Institute of Allergy and Infectious Diseases–sponsored interventional studies, 2 of which focused on enhancing the quality of asthma care provided to children with asthma living in inner cities^{12,13} and one of which focused on reducing exposure to indoor allergens and pollutants known to exacerbate asthma.¹⁴ Importantly, all of these interventional studies were successful in reducing disease activity in the populations studied, thus demonstrating that asthma control indeed could be achieved in children who had difficult-to-control disease and who lived in inner-city environments.

A common finding from the numerous studies that have been done in urban children with asthma is that these children often have both insurance and primary care providers. However, despite having a medical provider, these children do not seek regular medical care for their disease. The obvious question then is this: Why is regular asthma care not being sought? Although there are likely many answers to this question, 2 reasons are at the forefront. First, because asthma is an episodic disease, not having daily reminders of the disease might cause families not to seek regular medical care but to seek care only during asthma exacerbations. Second, because inner-city families are known to have numerous stressors in their lives, it is probable that obtaining regular care for a chronic illness, such as asthma, is not a high priority for the family.

THE BREATHMOBILE PROGRAM

In 1995, the Southern California Chapter of the Asthma and Allergy Foundation of America, the Los Angeles County Department of Health Services, and the Los Angeles Unified School District made a commitment to develop and implement a community outreach program that was designed to improve the health of children with asthma living in Los Angeles.¹⁵ This outreach program, known as the Breathmobile program, started very simply, with a single mobile unit in the city of Los Angeles. However, over a short time, the program evolved into a more comprehensive and integrated pediatric asthma disease management program that now consists of several mobile units in 4 major cities in 4 states. Scott et al,¹ in this issue of the *Journal*, now demonstrate that not only does this program work but also that it works well. In the more than 8000 children who have been enrolled in the program for more than a year, there has been a dramatic decrease in the percentage of patients reporting ED visits (mean, 66%), hospitalizations (mean, 84%), and 5 or more missed school days per year (mean, 78%). Moreover, well-controlled asthma was achieved by visit 3 for approximately 80% of patients, and very importantly, for those who were adherent to controller therapy, it was maintained. What a remarkable feat!

What do these results mean in this era of trillion dollar budget deficits and drastic programmatic cuts? That remains to be seen. It is only hoped that the leaders of our health care initiatives will take notice of the Breathmobile program and others like it. The message is clear: disease-specific management programs can be operationalized to high-risk underserved populations and, as importantly, they work.

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