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Asthma Prevalence in the Philadelphia Public Schools

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Asthma Prevalence in the Philadelphia Public Schools

Children with untreated asthma, in addition to having an unattended medical condition, also experience poor school performance due to high-absenteeism rates. Asthma is the leading cause of absenteeism with nearly 14 million school days lost every year.¹ To address asthma in children, the AsthmaBUS, part of Thomas Jefferson University's community education and outreach program, visits middle schools on a weekly basis. The AsthmaBUS is a London double-decker bus refitted as a mobile asthma educational and screening vehicle. It is staffed by a public health educator and driver, as well as the Asthma BUSTers, five cartoon characters who entertain and teach children about asthma symptoms and triggers using three themes: Asthma-See-It (asthma recognition), Asthma-Treat-It (asthma care), and Asthma-Beat-It (asthma "success"). We first reported on the AsthmaBUS in the December 2000 issue of this newsletter.

Between 2000 and 2003, the AsthmaBUS reached more than 9,000 children from 81 Philadelphia schools and has collected a wealth of demographic and clinical information on children with asthma symptoms in an urban environment, many residing in poor and minority communities. To screen children, we used the widely employed and validated ISAAC video survey (International Study of Asthma and Allergies in Children).² ISAAC consists of five vignettes on asthma, presenting various symptoms linked to a self-administered multiple-choice questionnaire. We also asked children directly if they knew they had asthma.

Table 1: Self-Reported Asthma by Ethnicity (n=9,024*)					
Philadelphia AsthmaBUS 2000-2003					
Ethnicity	Self-Reported Asthma DX				Chi-sq P value
	No		Yes		
	#	%	#	%	
African-American	3,916	75.4%	1,276	25.0%	<0.0001
Asian	391	84.6%	71	15.5%	
Hispanic	652	70.0%	280	29.2%	
White	810	81.9%	179	18.2%	
Other	1,001	77.5%	290	21.8%	
TOTAL	6,770	76.4%	2,096	23.6%	

**numbers do not sum to 9,024 because of missing values for ethnicity.*

Of the students screened, 23.6% (n=2,096) self-reported having asthma (Table 1). The proportion of these known asthmatics varied significantly by ethnicity, with Hispanic and African American children having higher rates. In an analysis of children who had any of three common wheezy symptoms using ISAAC responses (wheezing

on exertion, wheezing at night, wheezing at rest), 43.8% (n=3,907) of all screened children had at least one of these symptoms during the previous year. Of these, over half (57.2%) were unaware of having asthma. This lack of knowledge about asthma symptoms also varied significantly by ethnicity, with Hispanics and African Americans having lower levels of knowledge. Our findings of self-reported asthma are comparable to data from New York City in similar minority populations.³

The AsthmaBUS has proven to be an effective tool for increasing awareness and improving education, especially in reaching out to neighborhoods of greater asthma risk.^{4,5} In a project funded by the Aetna Foundation, we plan to identify children whose asthma symptoms are not being addressed and who also have high school absenteeism rates and to connect these children and their families with appropriate medical professionals who will provide them with ongoing medical treatment and monitoring. We will partner with the Child with Asthma Link Line, or Asthma Call Center, a telephone-based information and referral/follow-up service for children with asthma and their families. The Call Center bilingual care coordinators link families to neighborhood asthma services and resources such as primary care, care management, community-based asthma education, and home visits for trigger remediation.

We also hope to be able to screen children via the Internet in a web-based platform. Compared to the standard bus version of ISAAC, an Internet modality would be less time-consuming, personnel intensive, and capable of analyzing results efficiently. However, the Internet lacks the "people" quotient, which the AsthmaBUS readily supplies. A combined approach where a web-based screening identifies problems in large populations, followed by targeted interventions by the AsthmaBUS, may be an optimal way to identify, educate, and treat children with asthma. Because individual families' ability to access the Internet may vary, this approach may best be located in the schools or other community gathering places. Therefore, the viability of these screening modalities becomes contingent upon securing more than adequate funding and adoption by health departments, school districts and communities desiring to address the problem of asthma and its effect on their children.

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