

The Illinois Emergency Department Asthma Collaborative

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The Illinois Emergency Department Asthma Collaborative (IEDAC) was established to develop an Emergency Department (ED) based surveillance system that would provide a detailed, ongoing assessment of asthma severity, treatment and outcomes in patients presenting to six hospital emergency departments in Chicago, Rockford, and Springfield.

Methods:

This ED-based surveillance system consists of an asthma risk assessment instrument, a process of ED care evaluation and an outcome assessment. The risk assessment questionnaire evaluates asthma control, proper medications, and frequency of recent past events to characterize the situation in the communities served by those institutions, at least among those asthmatics who receive emergency care. The six hospitals distributed self-administered risk questionnaires and collected standard information about ED asthma treatment, aiming for 15 surveillance subjects each month. Follow-up information was collected for outcome assessment and validation of risk assessment and treatment as part of the research framework. A multi-disciplinary quality improvement team was established at each hospital, where members participated in a six month learning collaborative. The teams used the surveillance information and participated in periodic meetings across all hospitals to: 1) change practice in asthma education, 2) change practice in prescription of inhaled steroids at discharge, and 3) enhance referral practices.

Chicago Community Asthma Prevention Program (CAPP)

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service agencies, provider training, community education, and home visits by educators hired at three sites. A similar program targeting the Englewood and West Englewood communities has recently been funded by the Merck Childhood Asthma Network through ALAMC.

Collaborations established through these programs have mobilized resources to encourage policy changes by Chicago Public Schools, Chicago

Housing Authority, private insurance providers, Medicaid, and the City of Chicago. Initiatives have included integrated pest management in schools, public housing, and day care settings; increased coverage for inhalers and spacers by private insurance and Medicaid; modification to building demolition procedures in the city; decreased idling of school buses; smoking prevention legislation; and minimizing adverse effects arising

from the Dan Ryan renovations.

Conclusions:

There are large differentials in asthma mortality and morbidity in Chicago reflecting the complex multi-factorial nature of the disease. The Chicago Community Asthma Prevention Program is an effort to address these issues through enhancing and linking infrastructures serving children with asthma.

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Hazard-Based Surveillance: Asthmagenic Isocyanate Use in Illinois Industry

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Isocyanates are a class of reactive compounds used in the polymerization of paints, coatings, and polyurethane foams. Many isocyanates are allergenic, and are one of the most common causes of allergic occupational asthma. Sensitization rates among exposed workers may range up to 5 – 10%. The purpose of this study was to identify sites of asthmagenic diisocyanate use in Illinois and to estimate the number of workers potentially exposed.

Methods:

A list of industries in which asthmagenic isocyanates are used was generated from several sources, including using reports of isocyanate asthma in the medical literature, reports of NIOSH Health Hazard Evaluations in isocyanate industries and the EPA's Toxic Regulatory Inventory (TRI). Each identified industry was coded using the North American Industry Classification System. This code was then evaluated for the specificity with which it reflects isocyanate activities. Those codes judged to be relatively isocyanate-specific were used to search the Bureau of Labor Statistics (BLS), and the additional potential isocyanate-using establishments and

the number of employees were totaled. The number of workers potentially exposed to asthmagenic isocyanates was calculated using an estimate of the proportion of workers at each establishment involved in production.

Results:

Codes that were judged to be relatively isocyanate-specific and could be used for searching the BLS for isocyanate-related industries included 18 non-foundry and 4 foundry industries. A total of 2,195 non-foundry and 109 foundry establishments were identified. The most frequent industry was automotive body (1,814), followed by wood window and door manufacturing (53) and industrial pattern making (48). There were 16,057 employees in non-foundry industries potentially exposed to asthmagenic isocyanates in Illinois.

Conclusions:

The number of employees potentially exposed to asthmagenic isocyanates can be estimated using the BLS, and high-frequency industries can be determined. This data can be used to prioritize target industries for outreach efforts to control exposure.

For more information on future workshops contact

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Funding for this project was provided by AstraZeneca and GlaxoSmithKline.

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Chicago Asthma
Consortium

Ninth Annual Data Workshop

Winter 2005

Variation in Diagnosed Asthma Prevalence in an Urban School-Age Population

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This study (supported by funding from NHLBI 1 U01 HL072496-03) involved implementing a cross sectional survey screening for asthma among family members of students attending public and Catholic elementary and middle schools in Chicago

during the 2003-2004 and 2004-2005 school years.

Methods:

Schools were eligible for asthma screening if they did not have on-site asthma screening within the previous two years. The sampling pool of 531 eligible schools had a student body size of 317,187 (2002 school census). Chicago Public School and Chicago Catholic Archdiocesan databases were used to stratify elementary schools prior to selection by ethnicity (based on > or < 50% of student body self described African-Americans) and income (based on > or < 70% of student body receiving free school lunch) in order to enhance the likelihood of a heterogeneous sample. One hundred-six schools were selected using population-proportionate sampling methods within the predetermined four ethnicity-income categories. 35,886 students were enrolled, ranging in age from 6 to 12 years. All students were assessed using a previously validated screening tool for asthma and possible asthma (BPAS+, Wolf Ann Allergy Asthma Immunol 2003;90:500).

Results:

Data from the study population

showed that approximately equal numbers of students had a diagnosis of asthma (12.6%) or symptoms consistent with asthma but without a diagnosis (12.7%). Male gender, self-described African-American ethnicity and having a parent with asthma were independently associated with increased odds of having a diagnosis of asthma. Adjusted odds ratios (AOR) were 1.5, 2.0, 4.8, respectively ($p < 0.001$). Among 14,637 respondents describing themselves as Hispanic, completing the form in Spanish was associated with reduced odds of having an asthma diagnosis (AOR 0.56, $p < 0.001$) but increased odds of having asthma symptoms without a diagnosis (AOR 1.2, $p < 0.001$).

Conclusions:

Diagnosed asthma is prevalent in elementary school-aged children in Chicago with prevalence rates in this sample significantly higher than national averages would predict. Asthma is more common in boys, African-Americans, and those with a parent with asthma in this study population. It appears that a diagnosis of asthma is less likely in Hispanic children when caregivers choose to respond in Spanish.

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