Work-Related Asthma At A Syntactic Foam Manufacturer Detected Through Surveillance

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INTRODUCTION: The American Thoracic Society estimates that 15% of adult asthma can be attributed to occupational factors, making work-related asthma (WRA) a prevalent occupational respiratory disease. Since 1987, the National Institute for Occupational Safety and Health (NIOSH) has sponsored state health department-based surveillance for occupational respiratory diseases including WRA. Using the Sentinel Event Notification System for Occupational Risks (SENSOR) model, health departments identify case-patients, conduct interviews, provide workplace follow-up, and initiate prevention strategies. This surveillance system is the only source of case-based WRA data that provides information on exposure, industry, and occupation. Case definitions for WRA, occupational asthma, work-exacerbated asthma, and reactive airways dysfunction syndrome are uniform and applied using a decision logic and case classification scheme. Each state program has developed criteria for determining which workplaces will be selected for follow-up investigations and interventions.
METHODS: In Massachusetts, case finding includes evaluation of healthcare provider reports, hospital inpatient data, emergency department visits and workers' compensation claims. From 2008 to 2010, the Massachusetts Department of Public Health (MADPH) received reports of eight workers with WRA at a syntactic foam manufacturing facility, submitted from five different physicians. MADPH conducted an investigation in 2010 that included a tour of the facility, review of production process materials and interviews with managers. In 2012, a NIOSH Health Hazard Evaluation (HHE) was initiated by employee requests. It includes an exposure assessment and a health and work history questionnaire offered to the facility's 165 current employees.
RESULTS: Workers with WRA complained of dyspnea, wheezing, cough, chest pain, and throat pain that began after hire and improved away from work. Materials used at the facility included respiratory irritants and recognized sensitizers and/or asthmagens. Changes to materials and processes were noted to have preceded the onset of symptoms. MADPH recommended lowering chemical exposures and encouraged further evaluation. NIOSH's ongoing HHE is aimed at establishing the prevalence of and risk factors for asthma symptoms and diagnoses among current workers. The company has made changes at the facility to protect worker health based on recommendations from MADPH and NIOSH.
CONCLUSIONS: The eight cases of WRA were identified through state-based surveillance supported by NIOSH. By conducting surveillance for WRA and treating individual cases as sentinel health events, this system identified emerging occupational health risks resulting in workplace investigations and preventive interventions. Physician recognition and reporting of WRA is critical to the success of this surveillance program and initiation of public health response.

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