

SENSOR Occupational Lung Disease Bulletin

A project of the Massachusetts Department of Public Health's Occupational Health Surveillance Program, the Massachusetts Thoracic Society, and the Massachusetts Allergy Society

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Dear Health Care Provider:

Work-related asthma includes both new onset asthma caused by workplace exposure to sensitizers or irritants and pre-existing asthma made worse by exposures at work. Both new onset and work-aggravated asthma are reportable to the Massachusetts Department of Public Health. This issue of the *Bulletin* looks at the latter - work-aggravated asthma.

Approximately 10% of individuals reported to the Massachusetts SENSOR asthma program from 1993-1998 who completed interviews fell into this category. Because not all cases of work-related asthma are reported, we do not know if this 10% figure represents the underlying distribution of work-aggravated asthma in the population. We suspect that work-aggravated asthma may be less likely to be recognized and reported than new onset asthma caused by exposures at work.

Colleagues from the Division of Respiratory Disease Studies of the National Institute for Occupational Safety and Health (NIOSH) have recently completed a report on work-aggravated asthma based on an analysis of work-related asthma data from the four states with SENSOR asthma projects. For this *Bulletin*, we asked them to comment.

Sincerely,
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The Recognition and Management of Work-Aggravated Asthma

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Pre-existing asthma that is exacerbated by workplace exposures, or work-aggravated asthma, is a serious but often preventable occupational lung condition that may lead to chronic impairment if it remains unrecognized and untreated.⁽¹⁾ The National Institute for Occupational Safety and Health (NIOSH) funds surveillance activities for work-related asthma (WRA) under the Sentinel Event Notification Systems for Occupational Risks (SENSOR) program in California, Massachusetts, and Michigan. New Jersey also conducts surveillance for WRA utilizing the

SENSOR model. According to the standard SENSOR classification scheme, individuals with WRA are classified as having work-aggravated asthma if the following conditions are met: (1) the affected individual has experienced asthma symptoms or had treatment for asthma in the two years prior to entering a new work setting; and (2) they have experienced an increase in asthma symptoms or increased use of their asthma medications after entering that new exposure setting.⁽²⁾ The new exposure setting could include starting a new job, a change of work processes, and/or the introduction of new agents in the workplace. An individual who had asthma as a child but was asymptomatic as an adult until developing WRA would be classified as having new-onset WRA, not work-aggravated asthma.⁽¹⁾ Several studies have reported the proportion of WRA cases in the SENSOR program that are work-aggravated, which have ranged from 7% to 35%.^(2,3,4,5) We recently evaluated SENSOR data and found that individuals with work-aggravated asthma are more likely to be employed in the service industry and working in technical, sales, and administrative support occupations than those with new-onset WRA.

Little published information exists that deals specifically with the diagnosis, treatment, and prevention of work-aggravated asthma. Friedman-Jiménez et al. (2000) propose a stepwise approach that clinicians may use for the diagnosis of WRA, including work-aggravated asthma.⁽⁶⁾ The clinical evaluation of work-aggravated asthma would proceed in the same manner as for any WRA; physicians and other health care providers should obtain a complete medical and work history, including current and pertinent former employment, as well as look for temporal patterns and characteristics of WRA. Some important questions to be answered include: 1) Do asthma symptoms worsen at work or on nights after work, improve on days off, and then recur on returning to work? 2) Do symptoms progressively worsen towards the end of the work week?

Report February and March Cases Now
By March 31st, report all occupational lung disease cases seen for the first time in February and March, 2002. If you have NOT seen any cases, it is not necessary to return the reporting form.

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3) Has the patient identified specific agents or activities in the workplace that trigger asthma symptoms? 4) Does the patient also report work-related eye irritation or rhinitis?^(2,6,7) As with any WRA, the recommended evaluation of work-aggravated asthma also would include obtaining objective physiologic evidence, such as serial peak flow measurements and/or spirometry, to verify the exacerbation of pre-existing asthma during a patient's regular work schedule if doing so is not medically or otherwise contraindicated.⁽⁶⁾

Once work-aggravated asthma is clinically recognized, an evaluation of the workplace should be considered to determine the feasibility of controlling or modifying the implicated workplace conditions. Workplace evaluations can be conducted by industrial hygienists employed at the company where the suspected problem exists. These evaluations also might be conducted by staff from the state-based SENSOR program, OSHA, or NIOSH in response to requests from workers or management. Workplace modifications can include reducing or eliminating exposure in the workplace through substitution of a less problematic agent for the offending agent, engineering controls, or the use of personal protective equipment.⁽⁷⁾

Medical treatment of individuals with work-aggravated asthma is similar to treatment of other forms of asthma.⁽⁶⁾ Patients who continue to work in these environments should be monitored closely by a physician or other health care provider, maintain peak expiratory flow diaries, and have readily available access to emergency care.⁽⁶⁾ However, if an individual with work-aggravated asthma continues to have severe symptoms or requires long-term use of systemic corticosteroids to manage their asthma, it may be necessary to advise the patient to discontinue working in that particular workplace, occupation, or industry.⁽⁶⁾ Workplace intervention can also include notifying similarly exposed co-workers so they can be aware about the potential for work-related respiratory problems. Identification of individuals with work-aggravated asthma and the subsequent reduction or elimination of exposures in the workplace can limit morbidity, disability, and impairment in those already affected, reduce associated costs, and prevent additional future cases.⁽⁶⁾

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Work-Related Asthma Cases Reported to Massachusetts SENSOR March 1992 – February 2002

Nov 2001	Dec 2001	Jan 2002	Feb 2002	Total to Date (3/92-2/02)
15	5	3	0	857

In the News...

- Conference proceedings reported in the January issue of the *Journal of Allergy and Clinical Immunology* include an abstract on how vacuuming carpets, even with a HEPA-filter vacuum, increases exposure to dust mite allergens.
- Eight employees at the Gilster-Mary Lee Corporation microwave popcorn plant in Jasper, MO developed bronchiolitis obliterans, apparently due to exposure to butter flavoring vapors, according to NIOSH investigators. Diacetyl in the butter flavoring is the suspected trigger.