

Massachusetts Department of Public Health

Occupational Health Surveillance Program, 250 Washington Street, 6th fl, Boston, MA 02108  
 Tel: (617) 624-5632 \* Fax: (617) 624-5696 \* [www.state.ma.us/dph/bhsre/ohsp/ohsp.htm](http://www.state.ma.us/dph/bhsre/ohsp/ohsp.htm)

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Dear Health Care Provider,

Welcome to the updated *Occupational Lung Disease Bulletin*, now available electronically. If you or your colleagues would like to receive the *Bulletin* by email, please send a message to the address listed below. Please specify whether you would like to receive the *Bulletin* in both formats or electronic only.

Occupational.Asthma@state.ma.us

- Please note, effective immediately, regulations regarding reporting of work-related asthma and other work-related conditions have been broadened. Regulations promulgated under 105 CMR 300.00 "Reportable diseases and isolation and quarantine requirements" now state that "other health care providers" are also mandated reporters.
- This issue of the *Bulletin* provides results from the occupational asthma questions included in the BRFSS telephone survey, indicating that 27,000 adults in Massachusetts have work-related asthma. Please continue to report cases so we can work together to identify hazardous exposures and prevent this serious disease.

Sincerely,  
 Elise Pechter MPH, CIH

Michigan and California -- added several specific questions about work-related asthma. Findings from the Massachusetts BRFSS are reported below.

A total of 8,268 interviews were completed in Massachusetts in 2001. The results in Table 1 are based on responses to the CDC core asthma questions: "Have you ever been told by a doctor, nurse or other health professional that you have asthma?" and, if yes, "Do you still have asthma?" If a respondent answered yes to the first question, they were considered to have lifetime asthma. If they responded yes to both questions, they were considered to have current asthma. Information was also collected about age when first diagnosed with asthma. As shown in Table 1, 9.5% of Massachusetts' adults reported that they currently have asthma. Women were more likely to have current asthma (11.3%) than men (7.4 %). Approximately five percent (5.3%) of adults reported having current asthma that developed when they were 16 years or older (adult onset), whereas 3.9% of adults reported having current asthma that first developed when they were children (less than 16 years). The current asthma prevalence among Massachusetts' adults was higher than that reported for the country as a whole in 2000 (9.5% vs 7.2%).<sup>1</sup>

## Work-Related Asthma in Massachusetts, 2001 Results from the Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual, random-digit-dial telephone survey of adults aged 18 years and older that collects information on health risks, preventive behaviors and health conditions. The survey is conducted in all states as a joint effort of the Centers for Disease Control and Prevention (CDC) and state health departments. The survey consists of core questions developed by CDC that are asked in all states, optional CDC modules on specific health issues, and state-added questions on additional topics. In 2001, the core survey included two questions about asthma. That year, three states -- Massachusetts,

**Table 1. Estimated prevalence of lifetime and current asthma in Massachusetts, BRFSS, 2001**

	All Respondents	Males	Females
<i>Lifetime asthma</i>	<b>13.1%</b> (12.2-14.0)	<b>11.0%</b> (9.7-12.3)	<b>15.0%</b> (13.7-16.2)
<i>Childhood onset</i>	<b>5.9%</b> (5.3-6.6)	<b>5.9%</b> (4.9-6.9)	<b>6.0%</b> (5.1-6.9)
<i>Adult onset</i>	<b>6.7%</b> (6.1-7.3)	<b>4.7%</b> (3.8-5.6)	<b>8.5%</b> (7.6-9.2)
<i>Current asthma</i>	<b>9.5%</b> (8.7-10.3)	<b>7.4%</b> (6.3-8.5)	<b>11.4%</b> (10.2-12.5)
<i>Childhood onset</i>	<b>3.9%</b> (3.2-4.5)	<b>3.6%</b> (2.7-4.4)	<b>4.3%</b> (3.5-5.1)
<i>Adult onset</i>	<b>5.3%</b> (4.7-5.8)	<b>3.7%</b> (2.9-4.4)	<b>6.7%</b> (5.9-7.5)

Numbers in parentheses are 95% confidence intervals. Adult onset is defined as onset at 16 years of age or older.

Individuals with lifetime and current asthma were asked two questions regarding work-related asthma: "Were you ever told by a doctor or other medical person that

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your asthma was related to any job you ever had?" and, "Did you ever tell a doctor or other medical person that your asthma was related to any job you ever had?" Results regarding work-relatedness of current asthma are presented in Table 2.

**Table 2. Percent of adults with current asthma whose asthma may be related to work, Massachusetts, BRFSS, 2001**

	<i>Percent told by HCP* asthma work-related</i>	<i>Percent told to HCP* asthma work-related</i>	<i>Percent told to or by HCP* asthma work-related</i>
<i>All adults with current asthma</i>	<b>6.0%</b> (4.0-7.9)	<b>4.7%</b> (3.2-6.2)	<b>8.4%</b> (6.2-10.6)
<i>Child onset</i>	<b>2.6%</b> (0-5.4)	<b>1.6%</b> (0.3-2.9)	<b>3.5%</b> (0.6-6.5)
<i>Adult onset</i>	<b>8.4%</b> (5.6-11.2)	<b>6.7%</b> (4.2-9.1)	<b>11.8%</b> (8.5-15.0)

Numbers in parentheses are 95% confidence intervals. Adult onset is defined as onset at 16 years of age or older.

\*HCP: Health Care Provider

Six percent (6%) of Massachusetts' adults with current asthma had been told by their health care providers that their asthma was related to work. Nearly five percent (4.7%) reported that they had told their providers their asthma was work-related. Considered together, 8.4% of adults with current asthma reported that either they or their health care provider identified an association with work. Among those diagnosed as adults, the percentage was even higher; 11.8% identified an association with work. It is also possible to have childhood onset asthma aggravated by exposures at work as an adult, and 2.6% of those with current childhood onset asthma, reported having been told by health care providers that their asthma was work-related. The findings also suggest that health care providers were more likely than their patients to identify links between asthma and work.

### Discussion

What are the implications for Massachusetts? According to the 2000 Census, there were 4,850,710 people 18 years or older living in Massachusetts in 2000. Applying the 2001 BRFSS findings to this population figure, an estimated 458,000 Massachusetts adults currently have asthma. Among these are an estimated 27,000 adults with asthma who were told by their health care providers that their asthma was related to work. This estimate may be conservative. Blanc and Toren, based on a comprehensive review of the scientific literature, estimated that 15% of asthma is attributed to factors in the workplace.<sup>ii</sup> Milton et al found that 21% of clinically significant adult asthma cases among enrollees aged 15

to 55, in a large Massachusetts HMO, were work-related. Among the asthma cases, 21% did not recall being told by a physician that they had asthma. Only 15% of medical charts of adults with asthma documented that a provider had asked about workplace triggers.<sup>iii</sup>

The Massachusetts Department of Public Health (MDPH) is currently working with Michigan and California to compare the BRFSS findings on work-related asthma across states. MDPH has also repeated the questions about work-related asthma in the 2002 survey and included questions about the work asthmatic adults were doing when they first developed asthma symptoms. Findings will be covered in future reports.

These self-reported data from the BRFSS suggest that workplace factors contribute to the overall burden of asthma among Massachusetts' adults. Because it is possible to control workplace exposures, these findings underscore that there are opportunities to prevent development of asthma as well as to reduce asthma symptoms. At a time when asthma morbidity is taking a substantial toll in terms of both human suffering and utilization of health care services, efforts to prevent work-related asthma are critical. Better information about the industries, occupations and workplace exposures associated with asthma is essential to guide these prevention efforts. Yet only a very small percentage of cases of work-related asthma are reported to the MDPH, as required by public health regulations. Health care providers can play an invaluable role in prevention by reporting cases of work-related asthma – both new onset asthma and asthma aggravated by workplace exposures – to the Massachusetts Department of Public Health. *MDPH continues to need clinician's diagnostic acumen and willingness to take the time to report work-related asthma, to help reduce the human and economic burden of asthma in Massachusetts.*

<sup>i</sup> CDC: Self-Reported Asthma Prevalence Among Adults – United States, 2000. MMWR 201: 50(32); 682-6

<sup>ii</sup> Blanc PD, Toren KJ (1999): How much asthma can be attributed to occupational factors? Am J Med (107): 580-587.

<sup>iii</sup> Milton DK, Solomon GM, Rosiello RA, Herrick RF (1998): Risk and incidence of asthma attributable to occupational exposure among HMO members. Am J Ind Med (33): 1-10.

### Number of Work-Related Asthma Cases reported to Massachusetts SENSOR, March 1992 - Present

Dec 2002	Jan 2003	Feb 2003	Total to Date (3/92-present)
1	6	6	913

**Mail or fax the enclosed form to report new occupational lung disease cases.**