

# SENSOR

# Occupational Lung Disease Bulletin

Massachusetts Department of Public Health

Occupational Health Surveillance Program, 2 Bolyston Street, 6th fl, Boston, MA 02116

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March 2004

Dear Health Care Provider,

This issue of the *Occupational Lung Disease Bulletin* provides a summary of the Severe Acute Respiratory Syndrome (SARS) pandemic, which affected over 8,000 people worldwide. The original outbreak in Beijing led to cases among healthcare workers in more than 70 hospitals, transmission to patients and visitors, and closing and quarantining of hospitals. Among probable cases analyzed in the Beijing outbreak, 16% occurred in healthcare workers (Liang W et al. *Severe acute respiratory syndrome, Beijing, 2003*. Emerging Infectious Disease 10(1) Jan 2004. [www.cdc.gov/eid](http://www.cdc.gov/eid)). In the US, only 161 probable cases were identified, and very few cases were reported among healthcare workers. Lack of transmission may have resulted from treating few highly infectious patients or using few high-risk procedures (Park BJ et al *Lack of SARS transmission among healthcare workers, United States* Emerging Infectious Disease 10(2) Feb 2004. [www.cdc.gov/eid](http://www.cdc.gov/eid)).

To protect healthcare workers and prevent amplification in health care facilities, OSHA has emphasized the importance of workplace precautions. These include: appropriate ventilation, including isolation rooms with negative pressure and HEPA filtration; standard precautions, including work practices and PPE (N95 respirator, gowns, gloves); and housekeeping. Early case identification and hospital practices that protect against airborne diseases are crucial steps to ensure that healthcare workers are protected.

Sincerely,  
Kathy Raleigh, MPH  
Occupational Health Surveillance Program

To receive your *Bulletin* by e-mail or provide comments, send a message to [Occupational.Asthma@state.ma.us](mailto:Occupational.Asthma@state.ma.us)

## Severe Acute Respiratory Syndrome (SARS)

By Jocelyn Isadore MPH, Division of Epidemiology and Immunization, MA Department of Public Health

In March of 2003, the World Health Organization (WHO) alerted the global public health community to an ongoing outbreak of a new highly communicable and lethal respiratory

illness that became known as Severe Acute Respiratory Syndrome (SARS). Over the ensuing months, unprecedented global cooperation resulted in the identification of the causal agent, development of diagnostic laboratory assays, identification of risk factors for transmission, and development of effective infection-control practices to prevent disease transmission.

It is believed that the SARS pandemic began in China in November of 2002. By July 30, 2003, 8,098 cases were identified worldwide. In the United States, 161 suspect or probable cases were identified with 8 cases laboratory confirmed. In Massachusetts, 23 suspect or probable cases were investigated, and 15 of these were ultimately ruled out by laboratory testing. The remaining 8 cases could not be confirmed or ruled out as SARS cases because convalescent laboratory specimens were not available for testing. All cases in Massachusetts were exposed through travel to Asia or Toronto.

The potential reemergence of SARS on a global scale has led to the development of specific SARS surveillance criteria and demands the cooperation of healthcare providers, public health professionals, and the research community. The Centers for Disease Control and Prevention (CDC) has developed *Public Health Guidance for Community-Level Preparedness and Response to SARS* ([www.cdc.gov/ncidod/sars/guidance](http://www.cdc.gov/ncidod/sars/guidance)). Based upon this guidance, the Massachusetts Department of Public Health (MDPH) has developed a *SARS Surveillance and Response Plan for Massachusetts* that provides guidelines for the identification, management and control of SARS ([www.state.ma.us/dph/cdc/epii/sars/sars.htm#surv](http://www.state.ma.us/dph/cdc/epii/sars/sars.htm#surv)).

SARS is caused by a novel coronavirus known as SARS-CoV. The incubation period for SARS generally averages 2 to 7 days but may be as long as 10 days. SARS typically begins with the onset of a fever, chills, headache and body aches. After 3 to 7 days, the patient typically develops a dry, non-productive cough and shortness of breath and in some cases progresses to pneumonia and adult respiratory distress syndrome (ARDS). Chest x-rays often indicate a diffuse pneumonia; however, radiographic changes may not be evident until 7 to 10 days into the illness. Transmission of SARS-CoV is thought to be primarily through respiratory droplets (person-to-person, droplet-borne, and via fomites); however, clusters of illness suggestive of airborne transmission and fecal-oral transmission have been described and these modes of transmission may not

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be ruled out. Further studies are necessary to fully understand all the potential modes of transmission and their role in outbreaks. Many cases of SARS-CoV lead to little or no transmission. However, some cases have been identified as “super-spreaders” as defined by transmission to at least 8 contacts. More studies are needed to understand the characteristics of “super-spreaders” and their role in disease transmission.

Healthcare providers and healthcare facilities are crucial for the early detection of the reemergence of SARS. The CDC has developed SARS surveillance guidelines for the early detection of potential SARS cases. These guidelines are based on the belief that if SARS reemerges it will most likely reemerge (1) at the original site of introduction from animal to human (through reintroduction from the animal reservoir) or (2) at a location with previous person-to-person transmission (through persistent human infection).

Since December 16, 2003, four cases of SARS have been reported from Guangdong Province, China (3 laboratory

confirmed and 1 probable). The cases included a TV journalist, a waitress, a business man, and a physician/hospital director. Of the four cases, three were males and one was female and all cases were between the ages of 20 and 40.

All four SARS patients have recovered and have been discharged from the hospital. No secondary cases of SARS have been identified as a result of these reported cases and the source of infection in these individuals has not been identified. In response to these cases of SARS in Asia, the CDC has instituted interim criteria for surveillance for SARS: (See table below)

<p><b>For additional information on SARS:</b></p> <p>MDPH SARS web site:  <a href="http://www.state.ma.us/dph/cdc/epii/sars/sars.htm">www.state.ma.us/dph/cdc/epii/sars/sars.htm</a>                  OSHA SARS web site: <a href="http://www.osha.gov/dep/sars">www.osha.gov/dep/sars</a>                  NIOSH SARS web site:  <a href="http://www.cdc.gov/niosh/topics/SARS/">www.cdc.gov/niosh/topics/SARS/</a>                  CDC SARS web site: <a href="http://www.cdc.gov/ncidod/sars/">www.cdc.gov/ncidod/sars/</a>                  WHO SARS web site: <a href="http://www.who.int/csr/sars/en/">www.who.int/csr/sars/en/</a></p>
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**Case Identification:** Please immediately notify MDPH (617-983-6800) and the local board of health of any patients who meet **all** of the following criteria listed below. *The submission of specimens for laboratory testing must be pre-approved by an MDPH epidemiologist.*

Symptoms	Travel History <sup>1</sup> (within 10 days of symptom onset)	Recommended testing	Testing priority
Hospitalized with radiographically confirmed pneumonia or acute respiratory distress syndrome (ARDS) for which an alternative diagnosis has not been established	Guangdong Province, China  Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Laos, Taiwan, Thailand, Vietnam	SARS and Influenza  Influenza	Immediate. Contact MDPH at (617) 983-6800 prior to specimen submission
18 years or older <sup>2</sup> , hospitalized with fever >100.4°F and radiographically confirmed pneumonia or ARDS without identifiable etiology <b>AND</b> one of the following risk factors within 10 days of symptom onset: 1. Travel to locations indicated in the travel history column or contact with an ill person with history of travel to these areas, <b>OR</b> 2. High-risk occupation (healthcare worker with direct patient care or worker in lab containing SARS-CoV, <b>OR</b> 3. Part of a cluster of atypical pneumonia with unknown etiology	China, Hong Kong, Taiwan	SARS	Consider. Consult with MDPH at (617) 983-6800 prior to specimen submission

<sup>1</sup>For an up-to-date listing of influenza A (H5N1)-affected countries see [www.oie.int/eng/en\\_index.htm](http://www.oie.int/eng/en_index.htm) (for animal case information) or [www.who.int/en/](http://www.who.int/en/) (for human case information). For an up-to-date listing of SARS-affected countries see [www.who.int/csr/sars/areas/en/](http://www.who.int/csr/sars/areas/en/).

<sup>2</sup>Highly suspicious cases in patients less than 18 years of age will be considered on a case-by-case basis upon consultation with MDPH.

*MDPH epidemiologists are available 24 hours per day/7days per week at (617) 983-6800 to assist you in the evaluation of suspect SARS or Influenza A (H5N1) patients. The State Laboratory Institute can perform both serology and RT-PCR testing for SARS. Guidance on specimen collection may be found at [www.state.ma.us/dph/cdc/epii/sars/surveillance/responseplan\\_app3.ppt](http://www.state.ma.us/dph/cdc/epii/sars/surveillance/responseplan_app3.ppt)*

**Number of Work-Related Asthma Cases Reported to Massachusetts SENSOR, Total Cases from March 1992 - February 2004=962**

<b>Oct 2003</b>	<b>Nov 2003</b>	<b>Dec 2003</b>	<b>Jan 2004</b>	<b>Feb 2004</b>
3	3	7	2	3