# Severe acute respiratory syndrome

This article was sent to press on Mar. 26. Given the evolving situation, please check e*CMAJ* for updated information (www.cmaj.ca/misc/sars.shtml).

***Background and epidemiology:*** Severe acute respiratory syndrome (SARS) is the name given to cases of severe pneumonia that have been occurring since February 2003. A previously unidentified strain of coronavirus (the family of viruses responsible for the common cold) has been found in infected tissues from 2 patients. Antibody tests revealed seroconversion in 3 patients. Along with initial genetic sequencing, this evidence suggests that the virus is new and that it is the causal agent.

After an incubation period of 2–7 days, the illness begins with a prodrome of fever (temperature > 38°C) sometimes associated with chills, rigors and other symptoms such as headache, malaise and myalgia. After 3–7 days of prodromal symptoms, a respiratory phase begins with onset of dry, nonproductive cough or dyspnea, which may progress to hypoxia. Between 10% and 20% of patients have required mechanical ventilation.

Chest radiographs often show focal interstitial infiltrates that progress to more generalized, patchy infiltrates, and in late stages there can be evidence of consolidation. At the peak of illness, about 50% of patients have leukopenia and thrombocytopenia. Patients have also had elevated creatine phosphokinase and hepatic transaminase levels.

On Mar. 26, WHO stated that 1323 cases of SARS had been reported from 12 countries and that 49 people had died.

SARS can be transmitted through close contact with patients, particularly by family members and health care workers. In Canada, the 11 reported cases occurred in people who had recently travelled to Hong Kong or who had close contact with family members who had recently travelled there or with health care workers who cared for patients with SARS.

***Clinical management:*** WHO and the US Centers for Disease Control and Prevention (CDC) have established a case definition (see box).

Treatment should be supportive. Because the cause is uncertain, physicians should manage patients as they would anyone with undiagnosed pneumonia or acute respiratory distress syndrome. However, Hong Kong's secretary of health, welfare and food has reported that 85% of patients treated with ribavarin and steroids appear to show some improvement.


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***Prevention and control:*** Patients with SARS and those with atypical pneumonia who have any possible link to the outbreaks should be managed in hospital using isolation and infection control techniques. Attention to handwashing and standard isolation techniques is important. Respiratory precautions should be used if patients need a respirator, and health care workers should wear eye protection during all direct contact with patients.

Patients being transported or in ambulatory health care settings should wear a surgical mask. They should also do so when in contact with other people in their homes.

Because SARS is transmitted through close personal contact and not through exposure in public places, WHO continues to recommend no travel restrictions. However, Health Canada has issued a travel advisory.

Physicians should report known or suspected cases of SARS or of travel contacts of cases to their local public health officials. Health Canada has set up an information line to answer questions from the general public (tel 800 454-8302). Cases or suspected cases in the United States can be reported to the CDC's SARS Investigative Team (tel 770 488-7100). Information for clinicians about SARS, including infection control guidance, is available on the CDC Web site (www.cdc.gov/ncidod/sars/clinicians.htm).

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**Interim case definition of severe acute respiratory syndrome (SARS)***

Respiratory illness of unknown cause with onset after Feb. 1, 2003, and the following criteria:

- Measured temperature > 38°C [100.4° F]), **and**
- One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of either pneumonia or acute respiratory distress syndrome), **and**
- History of travel within 10 days of onset of symptoms to Hong Kong or Guangdong Province in the People's Republic of China; Hanoi, Vietnam; or Singapore **or**

  Close contact within 10 days of onset of symptoms with either a person with a respiratory illness who has the above travel history or a person under investigation or suspected of having SARS. (Close contact includes having cared for, lived with or had direct contact with respiratory secretions or body fluids of a person suspected of having SARS.)

*Source: US Centers for Disease Control and Prevention (www.cdc.gov/ncidod/sars/casedefinition.htm [released 2003 Mar. 22]).