Update: Outbreak of Severe Acute Respiratory Syndrome—Worldwide, 2003

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1 table, 1 figure omitted

CDC and the World Health Organization (WHO) are continuing to investigate the multicity outbreak of unexplained atypical pneumonia referred to as severe acute respiratory syndrome (SARS). 1 Pending development of confirmatory laboratory testing capacity, CDC's interim suspected SARS case definition 2 is based on clinical criteria and epidemiologic linkage to other SARS cases or areas with community transmission of SARS. This case definition will be updated periodically as new information becomes available. Epidemiologic and laboratory investigations of SARS are ongoing. As of April 2, 2003, a total of 2,223 suspected and/or probable SARS cases have been reported to WHO from 16 countries, including the United States. 3,4 The reported SARS cases include 78 deaths (case-fatality proportion: 3.5%). This report summarizes SARS cases among U.S. residents and surveillance and prevention activities in the United States.

Descriptive Epidemiology

As of April 2, CDC had received 100 reports of suspected SARS cases from 28 states; 81 (81%) cases occurred among adults. Of these 100 suspected cases, 94 (94%) persons had traveled within the 10 days before illness onset to the areas listed in the case definition (revised on March 29 to include all of mainland China as an area with documented or suspected community transmission), 4 had household contact with a person with suspected SARS, and 2 were health-care workers (HCWs) who provided medical care to a patient with suspected SARS. Manifestations of SARS have been relatively less severe among patients in the United States than among those reported elsewhere. A majority of U.S. patients had normal chest radiographs, and 23 (23%) were reported to have pneumonia or respiratory distress syndrome on chest radiograph, thereby meeting the WHO case definition of a probable case. 5 As of April 2, of the 40 (40%) patients who were hospitalized for \( \geq 24 \text{ hours} \), 13 (33%) remained hospitalized; one patient had required mechanical ventilatory support, and no deaths have been reported.

Reports on the clinical status of suspected SARS cases are being received by state health departments and CDC, and household and HCW contacts are being monitored for the possibility of secondary transmission. Since SARS investigations in the United States began, some persons believed initially to have suspected SARS have been excluded on the basis of more complete clinical histories (e.g., no documented fever or respiratory symptoms) or because of test results that indicated other etiologies. Alternative diagnoses have included infection with influenza virus, respiratory syncytial virus, *Haemophilus influenzae*, *Streptococcus pneumoniae*, and *Staphylococcus aureus*. Community transmission of SARS has not been identified in the United States; transmission to HCWs has been observed in one cluster involving two HCWs, compared with numerous reports of possible transmission to HCWs in other countries. 6,7

Enhanced Surveillance for SARS Related to Travel

As a precautionary measure, WHO has recommended that persons traveling to Hong Kong and Guangdong Province of China consider postponing all but essential travel. CDC has issued a travel advisory recommending that persons planning nonessential or elective travel to mainland China, Hong Kong, Hanoi, or Singapore consider postponing such travel until further notice. To detect possible SARS cases among travelers returning to the United States from these areas, CDC and state and local health authorities have implemented enhanced surveillance. Since March 16, notices (available in English, Chinese, Japanese, Korean, and Vietnamese) have been provided to approximately 220,000 passengers arriving in the United States on airline flights originating from China, Vietnam, and Singapore to inform disembarking passengers and crew about SARS. Persons disembarking from these countries are urged to monitor their health for 10 days after return, to seek medical care if they develop fever of \( \geq 100.5^\circ \text{F} (37.9^\circ \text{C}) \) and cough or difficulty breathing within 10 days of travel, and to inform their health-care providers about recent travel to regions where SARS cases have been reported.

Laboratory Investigations

Efforts are ongoing to characterize further the role of a previously unrecognized coronavirus in SARS. Polymerase chain reaction–based assays, isolation studies, electron microscopic studies, and histologic studies are being developed to detect virus in specimens from patients with suspected SARS. Indirect immunofluorescence antibody assays and enzyme immunoassays to anti-coronavirus antibody as an indicator of infection have been developed and are being applied to specimens from suspected SARS patients. Laboratory studies at CDC and other laboratories in the WHO–organized SARS Laboratory Network have detected this new coronavirus in SARS patients, which is consistent with an etiologic role in this disease. CDC has detected human metapneumovirus from one SARS patient, and other laboratories also have detected metapneumovirus from SARS patients. The role of these viruses in the pathogenesis of SARS is unclear.

Reported by: CDC SARS Investigative Team; LM Fox, MD, EIS Officer, CDC.
The majority of U.S. residents with SARS have recovered or stabilized clinically without specific antiviral therapy. The U.S. case-fatality proportion is lower than that reported in some other countries. Possible explanations for this include differing case definitions among countries or differences in the sensitivity of surveillance, leading to identification in the United States of patients with less severe or early manifestations of infection or of a larger proportion of patients with other respiratory illnesses. Until confirmatory laboratory testing is available, the case definition will include clinical criteria more likely to identify potentially infectious persons. Various therapies, including antiviral agents (e.g., oseltamivir or ribavirin) and corticosteroids, have been administered to SARS patients, but the efficacy of these therapies has not been determined.

Health-care providers of patients whose illness is consistent with the case definition for SARS should continue diagnostic evaluation for other causes of respiratory illness and, when appropriate, empiric therapy that includes activity against organisms associated with community-acquired pneumonia of uncertain etiology, including both typical and atypical respiratory pathogens. Health-care providers who report suspected SARS cases should notify their state health departments if these patients receive confirmatory testing that indicates a diagnosis other than SARS. Information on suggested diagnostic testing and evaluation for persons with possible SARS is available at http://www.cdc.gov/ncidod/sars/triage_interim_guidance.htm.

In the United States, decisions to admit persons with suspected SARS to health-care facilities should be based on clinical criteria. Patients with suspected SARS who are discharged should limit interactions outside the home and not go to work, school, out-of-home child care, or other public areas until 10 days after resolution of fever and respiratory symptoms. Additional guidance for these patients is available at http://www.cdc.gov/ncidod/sars/ic-closecontacts.htm.