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HEALTH ADVISORY – Severe Acute Respiratory Syndrome (SARS)

March 18, 2003

This Advisory notifies you of the presence of an outbreak of severe acute respiratory syndrome (SARS) of unknown etiology and informs you of appropriate actions if you suspect you are caring for a patient with SARS.

SARS was first recognized on February 26, 2003 in Hanoi, Vietnam. As of March 17, 2003, countries reporting cases of SARS to the World Health Organization (WHO) include: Hong Kong Special Administrative Region of China (95), Vietnam (40), Singapore (20), Guangdong Province in the People's Republic of China (case numbers unavailable) and Canada (8). There have been reports of SARS activity in Indonesia, Philippines, and Thailand, but none of these have been officially reported to the WHO. There have also been cases of travelers presenting with, and being evaluated for, SARS in the United States of America, Switzerland, and Germany. To date, there are no confirmed cases of SARS in the United States.

Clinical features

SARS is an illness of currently unknown etiology that presents with influenza-like symptoms including fever, myalgias, headache, sore throat, non-productive cough, and sometimes pneumonia by chest x-ray. Some patients with SARS (currently estimated at 10-20%) have developed more severe signs and symptoms, such as shortness of breath, hypoxia, and respiratory distress requiring intubation and mechanical ventilation. Thrombocytopenia and leukopenia have also been reported. As of March 17, 2003, fewer than 5 deaths associated with SARS have been reported to the World Health Organization (WHO) from Hong Kong, Vietnam, and Canada. Although information on the clinical course of SARS is rapidly evolving, it is presently believed that the incubation period averages 5-7 days. To date, there is no evidence linking avian influenza (H5N1) to SARS.

Case definition (Suspected Case)

- Persons with respiratory illness of unknown etiology with onset since February 1, 2003.
- A person presenting with one or more signs or symptoms of respiratory illness including cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of pneumonia or acute respiratory distress syndrome;
  - **AND** fever >38° C (100.4ºF);
  - **AND** one or more of the following:
- **Close contact within 10 days** of onset of symptoms with a person under investigation or suspected of having SARS;
- **Travel within 10 days of onset** of symptoms to an area with documented transmission of SARS (see list).

Note: Suspect cases with either radiographic evidence of pneumonia or respiratory distress syndrome; or evidence of unexplained respiratory distress syndrome by autopsy are designated "probable" cases by the WHO case definition.

* Close contact is defined as having cared for, having lived with or having had direct contact with respiratory secretions and /or body fluids of a patient suspected of having SARS.

List of areas with transmission of SARS: Hong Kong Special Administrative Region and Guangdong province, Peoples' Republic of China; Hanoi, Vietnam; Singapore; and Toronto, Canada.

Diagnosis

Because the etiology for SARS is presently unknown, SARS is currently a **clinical diagnosis** based on the above case definitions. Basic diagnostic testing should be performed at local hospital laboratories, while more specialized testing should be referred to state and national public health laboratories. Initial diagnostic testing should include:

- Chest x-ray
- CBC with differential
- Sputum for Gram stain and routine bacterial culture and sensitivity
- Sputum for *Legionella* culture and Direct Fluorescent Antibody (DFA), and urine for *Legionella pneumophila* serogroup 1
- Blood cultures
- Nasopharyngeal washings for viral DFA testing and viral culture, specifically testing for influenza A/B, parainfluenza, and respiratory syncytial virus (RSV)
- Acute and convalescent sera for specialized serological studies, including serology for *Chlamydia pneumionae* and *Mycoplasma pneumoniae* (interpret results with caution)

Clinicians are asked to remind laboratories not to discard any SARS-related specimens, and to have serum frozen for potential further studies.

Who to refer for State of California DHS Viral and Rickettsial Disease Laboratory (VRDL) testing

Any **hospitalized patients** with unexplained pneumonia **AND** with travel to China, Vietnam, Indonesia, Philippines, Singapore OR Thailand (or with history of close contact with persons with respiratory illness having the aforementioned travel) **within 10 days of symptom onset**.

Clinicians must also notify the SFDPH, Communicable Disease Control Unit for suspected cases, Phone: (415) 554-2830, FAX: (415) 554-2848, After hours on-call pager: (415) 809-7839.

Specimen Collection Information

Diagnostic Test	Pathogens	Specimens Required
Viral culture and PCR*	Broad range of viral pathogens including influenza A/B, parainfluenza, RSV, adenovirus, metapneumovirus, and *Mycoplasma*	ET aspirate (if intubated) and NP swab in viral transport media (VTM)
Acute serum (IgM) ≤ 7 days after onset	*Mycoplasma* and *Chlamydia*	1 red top tube ≥3cc
Convalescent serum (10-14 days after onset)	*Mycoplasma*, *Chlamydia*, influenza A/B, parainfluenza, RSV, adenovirus.	1 red top tube ≥3cc

- Specimens that test negative for all the above tests will be referred to CDC for further testing.
- Keep all specimens on cold pack.
- For other specific questions on specimen collection, call David Cottam, VRDL at (510) 307-8585

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* These PCR tests are experimental in nature and have not been validated for diagnostic use but may be helpful for epidemiological studies.

Infection control (interim recommendations)[1]

- As of March 15, 2003, the majority of cases have occurred in people who have had very close contact with other cases and over 90% of cases have occurred in healthcare workers. If a patient with suspected or probable SARS is admitted to hospital, infection control personnel should be notified immediately.
- Although the exact route of transmission for the agent which causes SARS is unknown, CDC is currently recommending *airborne precautions* (private isolation room with negative pressure ventilation, and the use of N-95 respirator masks for persons entering the room) as well as *contact precautions* (use of gloves and gowns for contact with the patient or their environment, and handwashing). In addition, *standard precautions* should be followed, with special attention to good hand hygiene. When caring for patients with SARS, clinicians should wear eye protection for all patient contact.
- To minimize the potential of transmission outside the hospital, suspected patients should limit interactions outside the home until the routes of transmission are better understood.
- Outside the hospital setting, placing a surgical mask on case patients in ambulatory care settings, during transport and during contact with others is prudent.

Treatment

As the exact cause of SARS remains unknown, no specific treatment recommendations can be made at this time. For patients with more severe illness, empiric therapy should include coverage for organisms that usually cause community-acquired pneumonia. Healthcare providers are instructed to follow currently available clinical practice guidelines for community-acquired pneumonia[2]. Intensive supportive care, including intubation and mechanical ventilation, may be indicated. For patients requiring hospitalization, consultation with infectious disease specialists is recommended.

Reporting

Cases of SARS should be reported to the SFDPH, Communicable Disease Control Unit at (415) 554-2830, FAX # (415) 554-2848. After hours, page the on-call physician at (415) 809-7839.

Current travel advisories

CDC advises that persons planning elective or nonessential travel to areas affected by the outbreak may wish to postpone their trips until further notice. http://www.cdc.gov/travel/other/acute_resp_syn_multi_031503.htm

According to WHO, there is presently no recommendation for people to restrict travel to any destination. WHO is now offering limited guidance for travelers, airline crew and airlines.
Press release: http://www.who.int/mediacentre/releases/2003/pr23/en/

Additional Resources:

Additional documents will be available at SFDPH website URL: http://www.sfdph.org

- CDHS Infection Control Recommendations (03/17/03)
- CDHS Severe Acute Respiratory Syndrome Screening Form for Clinicians
- VRDL Severe Acute Respiratory Syndrome Specimen Submission Form

Centers for Disease Control and Prevention Website updates available at URL:http://www.cdc.gov/ncidod/sars/index.htm

World Health Organization website URL: http://www.who.int/en/

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[1] Garner JS, Hospital Infection Control Practices Advisory Committee. Guideline for isolation precautions in hospitals. Infect Control Hosp Epidemiol 1996;17:53-80, and Am J Infect Control 1996;24:24-52. http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm

[2] Bartlett JG, Dowell SF, Mandell LA, File Jr, TM, Musher DM, and Fine MJ. Practice Guidelines for the Management of Community-Acquired Pneumonia in Adults. Clin Infect Dis 2000;31:347-82. http://www.journals.uchicago.edu/CID/journal/issues/v31n2/000441/000441.web.pdf