Severe Acute Respiratory Syndrome (SARS) Information for MTF Healthcare Workers

A Collaborative Effort of DOD-GEIS, DHCC, USACHPPM, AFIOH, NHRC, NEHC, & WRAMC

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Severe acute respiratory syndrome (SARS) is a viral respiratory illness caused by a coronavirus, called SARS-associated coronavirus (SARS-CoV). SARS begin in October/November 2002 and was first reported in Asia in February 2003, spread to more than two dozen countries in North America, South America, Europe, and Asia, and was contained in July 2003. If SARS re-emerges, early case detection is critical to prevent the disease from spreading. This fact sheet outlines key actions that healthcare workers (HCWs) should take to prepare for the possibility that SARS may re-emerge.

Key Clinical and Epidemiologic Concepts:

- SARS has a non-specific clinical presentation (i.e., difficult to distinguish from other respiratory illnesses).
- Early clinical recognition of SARS still relies on a combination of clinical and epidemiological features.
- Only travel/contact information will assist in differentiating a new SARS case from all other respiratory diseases.
- Laboratory tests can be helpful but do not reliably detect infection early in the illness.
- Nearly all lab-confirmed cases had x-ray evidence of pneumonia by day 7 of the illness.
- Early case diagnosis can prevent further transmission.

Patients with respiratory symptoms should be provided with surgical masks and should be kept in an area of the waiting room where they can remain at least 3 feet from other patients. HCWs should wear surgical masks when evaluating these patients. During reception, technicians should remain at least 3 feet from unmasked patients. If possible, patients with respiratory symptoms should be placed in a private room or cubicle for further evaluation.

SARS Surveillance

Detecting "Sentinel" Cases in the Absence of SARS Activity
The Centers for Disease Control and Prevention (CDC) recommends that providers ask individuals with radiographic evidence of pneumonia or Acute Respiratory Distress Syndrome (ARDS) requiring hospitalization:

- "In the last 10 days, have you traveled to mainland China, Hong Kong or Taiwan, or been in close contact with other ill persons who have?"
- "Are you employed as a healthcare worker with direct patient contact?"
- "Do you have close contacts who have been told they have pneumonia?"

If the answer to any of the 3 questions is "Yes", healthcare providers will need to:

- Institute droplet precautions.
- Report through the service specific reporting system and notify the state/local health department.
- Evaluate for alternative diagnoses as clinically indicated.
- Consider SARS testing if the etiologic agent is not found within 72 hours of hospitalization.

Detection Should SARS Re-Emerge
If SARS re-emerges, increased surveillance for early case finding is the key to effective control. In addition to asking the three questions above, HCWs should screen all patients presenting with fever or respiratory symptoms for the following SARS risk factors:

- Travel within 10 days of the illness' onset to foreign or domestic locations with documented or suspected SARS-CoV, or close contact with an ill person with such exposure history.
- Close contact within 10 days of the illness' onset with a person who has known or suspected SARS infection.
- Exposure to a facility or setting with recent or ongoing SARS transmission.

SARS Diagnosis

Follow the CDC's case definition for SARS-CoV posted on its website at http://www.cdc.gov/ncidod/sars/. This website contains the most current SARS information and may change rapidly and frequently during another outbreak.

SARS Work Up

Again, refer to http://www.cdc.gov/ncidod/sars/,
the CDC SARS-CoV site, for the most up-to-date information.

Initial testing may include:

- CBC with differential.
- Pulse oximetry.
- Blood cultures.
- Sputum Gram stain and culture.
- Acute Serum sample.

- Testing for viral respiratory pathogens, notably influenza A and B and respiratory syncytial virus (RSV).
- Legionella and pneumococcal urinary antigen testing if radiographic evidence exists of pneumonia.

Respiratory specimens should be collected for viral and bacterial diagnostics. These include: nasopharyngeal wash/aspirates, nasopharyngeal and oropharyngeal swabs, broncheoalveolar lavage, tracheal aspirate, pleural tap, sputum, and stool. Nasopharyngeal wash/aspirates are the specimen of choice to detect most respiratory viruses and are the preferred collection method among children under 2 years of age. The acute serum sample and other available clinical specimens (respiratory, blood, and stool) should be saved for additional testing until a specific diagnosis is made. In addition, every effort should be made to obtain a convalescent serum sample 2 to 3 weeks after onset of illness for suspected cases.

Several laboratory tests can be used to detect SARS-CoV. A reverse transcription polymerase chain reaction (RT-PCR) test can detect SARS-CoV in clinical specimens, including blood, stool, and nasal secretions. Serologic testing also can be performed to detect SARS-CoV antibodies produced after infection. In addition, viral culture has been used to detect SARS-CoV.

Although current SARS tests can be sensitive and specific, they also can yield false positive results in a low-disease prevalence setting. In addition, laboratory capacity may be limited in some settings. **Therefore, testing for SARS-CoV should only be done with prior consultation with public health professionals from the respective military services.**

SARS Infection Control

All healthcare facilities need to reemphasize the importance of basic infection control measures to control SARS. Most transmission appears to occur through droplets, close contact, and, possibly, fomite contact; however, airborne transmission remains a possibility.

Suspected SARS patients who need hospitalization should be placed in an airborne infection isolation room as soon as possible.

SARS Treatment

No specific treatment recommendations can be made at this time. Empiric therapy should include coverage for organisms associated with any community-acquired pneumonia of unclear etiology, including agents with activity against both typical and atypical respiratory pathogens. Treatment choices may be influenced by severity of the illness. Infectious disease consultation is recommended. Clinicians evaluating suspected cases should use standard precautions (e.g., hand hygiene) together with droplet (e.g., surgical mask) and contact (e.g., gowns, gloves, and eye protection) precautions. N95 respirators are recommended when performing airway management on suspected SARS patients (e.g., intubation).

SARS Testing Laboratories

In addition to providing specimens to local public health authorities as requested, clinical specimens may be sent to the Air Force Institute for Operational Health (AFIOH), the Naval Health Research Center (NHRC), the Armed Forces Institute of Pathology (AFIP), or the US Army Medical Research Institute of Infectious Diseases (USAMRIID). Appropriate media and storage conditions are critical for optimal recovery and diagnosis. In addition, laboratory capacity may be limited in some settings. **Therefore, contact and consult with the receiving laboratory prior to shipping.**

Contact information is located at http://www.geis.ha.osd.mil/GEIS/SurveillanceActivities/Laboratory/LabTestsRespDisFinJG16Jul03.doc

SARS Reporting

Report all potential SARS cases through existing service reportable event systems and to the state/local health department. Service specific contact information is below:

Air Force: Air Force Institute for Operational Health episervices@brooks.af.mil, DSN 240-3471, commercial 210-536-3471

Army: U. S. Army Office of the Surgeon General (OTSG), Paula.Underwood@otsg.amedd.army.mil, 703-681-3160

Coast Guard: CG Commandant Health and Safety Directorate, Operational Medicine Division: sludwig@comdt.uscg.mil

Navy: Navy Environmental Health Center, CDR Mark Malakooti, malakootim@nehc.med.navy.mil, (757) 953-0700, DSN 377-0700, after hours (757) 621-1967

Additional Information on SARS

Centers for Disease Control and Prevention
http://www.cdc.gov/ncidod/sars/index.htm

World Health Organization
http://www.who.int/csr/sars/en/

DOD Global Emerging Infections System (also contains DOD guidance and policy documents)
http://www.geis.ha.osd.mil/GEIS/IDTopics/SARSmenu.asp

Laboratory Testing and Pathology Exploration Resources for Respiratory Disease Cases
http://www.geis.ha.osd.mil/GEIS/SurveillanceActivities/Laboratory/LabTestsRespDisFinJG16Jul03.doc

Deployment Health Clinical Center
www.pdhealth.mil

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