



Complete Summary

GUIDELINE TITLE

Public health guidance for community-level preparedness and response to severe acute respiratory syndrome (SARS). Version 2. Supplement B: SARS surveillance.

BIBLIOGRAPHIC SOURCE(S)

Centers for Disease Control and Prevention (CDC). Public health guidance for community-level preparedness and response to severe acute respiratory syndrome (SARS). Version 2. Supplement B: SARS surveillance. Atlanta (GA): Disease Control and Prevention (CDC); 2004 Jan 8. 31 p.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version issued by the Centers for Disease Control and Prevention (CDC) on November 13, 2003.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Severe acute respiratory syndrome (SARS)

GUIDELINE CATEGORY

Management
Prevention

CLINICAL SPECIALTY

Family Practice
Infectious Diseases
Internal Medicine
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Emergency Medical Technicians/Paramedics
Health Care Providers
Hospitals
Nurses
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To present recommendations for severe acute respiratory syndrome (SARS) surveillance

TARGET POPULATION

Surveillance in the *absence* of person-to-person transmission of severe acute respiratory syndrome-associated coronavirus (SARS-CoV) in the world should include:

Persons requiring hospitalization for radiographically confirmed pneumonia with risk factors suggesting SARS-CoV exposure (e.g., travelers to areas previously affected by SARS-CoV, healthcare workers)

Note: Surveillance should be limited to adults, unless there are special circumstances that make the clinician and public health personnel consider a child to be of potentially high risk for having SARS-CoV disease.

Surveillance in the *presence* of person-to-person transmission of SARS-CoV in the world should include:

- Persons with a fever or lower respiratory symptoms with a history of recent exposure to a known case of SARS-CoV or to a setting in which SARS-CoV transmission is occurring
- Persons with a high risk of exposure to SARS-CoV (e.g., persons previously identified through contact tracing or self-identified as close contacts of a laboratory-confirmed case of SARS-CoV disease, persons who are epidemiologically linked to a laboratory-confirmed case of SARS-CoV disease)

INTERVENTIONS AND PRACTICES CONSIDERED

Surveillance Strategies

Healthcare Providers and Facilities

1. Screen for risk factors with focus on:
 - Clinical syndromes (i.e., cases of pneumonia requiring hospitalization)
 - Groups likely to be first affected (e.g., travelers to areas previously affected by severe acute respiratory syndrome-associated coronavirus (SARS-CoV), healthcare workers)
2. Case detection and classification using clinical criteria, epidemiological criteria, laboratory criteria, and exclusion criteria
3. Report possible cases to state and local health departments
4. Infection control measures
5. Community-based surveillance
6. Hospital-based surveillance, including:
 - Healthcare worker surveillance measures
 - Inpatient and visitor surveillance measures

State and Local Health Departments

1. Disseminate surveillance and patient screening guidelines to healthcare providers
2. Information management
 - Electronic reporting system
3. Contact tracing (e.g., identify, interview, evaluate, and monitor)
4. Consult and refer to Centers for Disease Control and Prevention (CDC) as appropriate

MAJOR OUTCOMES CONSIDERED

Effectiveness of public health surveillance measures used to respond to the 2003 severe acute respiratory syndrome epidemic

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The guideline was prepared by the Centers for Disease Control and Prevention's (CDC) Severe Acute Respiratory Syndrome (SARS) Preparedness Committee, which was assembled to prepare for the possibility of future SARS outbreaks. The Committee includes eight working groups, each of which addressed a component of SARS preparedness and response. The working groups derived the guidance document from lessons learned during the 2003 epidemic, other CDC preparedness and response plans, and the advice, suggestions, and comments of state and local health officials and representatives of professional organizations, convened by means of teleconferences and meetings. Meetings were held on August 12-13, 2003 (public health preparedness and response), September 12, 2003 (preparedness in healthcare facilities), and September 18, 2003 (laboratory diagnostics).

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This is an updated version of the draft guidance document issued by the Centers for Disease Control and Prevention (CDC) on November 3, 2003. CDC revised the draft based on comments received from public health partners, healthcare providers, professional organizations, and others.

The revised surveillance case definition reflects changes in the interim position statement on severe acute respiratory syndrome surveillance adopted by the Council of State and Territorial Epidemiologists in November 2003.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Priority Activities

- Educate clinicians and public health workers on features that can assist in early recognition of severe acute respiratory syndrome (SARS) and on guidelines for reporting SARS-associated coronavirus (SARS-CoV) cases.
- Develop tools to identify, evaluate, and monitor contacts of SARS-CoV patients.
- Establish an efficient data management system that links clinical, epidemiologic and laboratory data on cases of SARS-CoV disease and allows rapid sharing of information.
- Identify surge capacity for investigation of cases and identification, evaluation, and monitoring of contacts in the event of a large SARS outbreak.

Plan for Surveillance of Cases of SARS-CoV Disease

Surveillance in the Absence of Person-to-Person Transmission of SARS-CoV in the World

Objective: Establish surveillance aimed at early detection of cases and clusters of severe unexplained respiratory infections (i.e., pneumonia) that might signal the re-emergence of SARS-CoV.

Continued vigilance is critical to ensure the rapid recognition and appropriate management of SARS patients if person-to-person SARS-CoV transmission recurs. In the absence of known areas with SARS-CoV transmission, the likelihood that a patient with fever or respiratory symptoms has SARS-CoV disease will be exceedingly low unless the patient has both typical clinical findings and some accompanying epidemiologic evidence that raises the suspicion of exposure to SARS-CoV. Therefore, U.S. surveillance efforts should focus on specific clinical syndromes (i.e., cases of pneumonia requiring hospitalization) in groups likely to be first affected by the re-emergence of SARS-CoV (e.g., travelers to areas previously affected with SARS-CoV, healthcare workers).

The 2003 SARS-CoV outbreak likely originated in mainland China, and neighboring areas such as Taiwan and Hong Kong are thought to be at higher risk due to the large volume of travelers from mainland China. Although less likely, SARS-CoV may also reappear from other previously affected areas. Therefore, clinicians should obtain a complete travel history. If clinicians have concerns about the possibility of SARS-CoV disease in a patient with a history of travel to other previously affected areas (e.g., while traveling abroad, had close contact with another person with pneumonia of unknown etiology or spent time in a hospital in which patients with acute respiratory disease were treated), they should contact the health department.

In the absence of SARS-CoV transmission in the world, the screening of persons requiring hospitalization for radiographically confirmed pneumonia for risk factors suggesting SARS-CoV exposure should be limited to adults, unless there are special circumstances that make the clinician and public health personnel consider a child to be of potentially high risk for having SARS-CoV disease. During the 2003 global outbreaks, infants and children accounted for only a small percentage of SARS cases and had a much milder disease and better outcome than adults. Although information on SARS-CoV disease in pediatric patients is limited, the role of children in transmission is likely much less significant than the role of adults.

Activities: Healthcare Providers

- Consider SARS-CoV disease in patients who require hospitalization for radiographically confirmed pneumonia (or acute respiratory distress syndrome) of unknown etiology and who have one of the following risk factors in the 10 days before illness onset:
 - Travel to mainland China, Hong Kong, or Taiwan, or close contact* with an ill person with a history of recent travel to one of these areas
 - Employment in an occupation associated with a risk for SARS-CoV exposure (e.g., healthcare worker with direct patient contact, worker in a laboratory that contains live SARS-CoV**)
 - Part of a cluster of cases of atypical pneumonia without an alternative diagnosis
- Use SARS-CoV testing judiciously and in consultation with local or state public health officials, given that: 1) the positive predictive value of a positive laboratory test in the absence of SARS-CoV transmission is extremely low, and 2) false-positive tests may generate tremendous anxiety and concern and expend valuable public health resources.
- Be alert for clusters of unexplained pneumonia among two or more healthcare workers who work in the same facility.
- Report to the state or local health department:
 - All persons requiring hospitalization for radiographically confirmed pneumonia who report at least one of the three risk factors listed above
 - Any clusters of unexplained pneumonia requiring hospitalization, especially among healthcare workers
 - Any positive SARS-CoV test result (requires immediate notification of the health department by telephone)

*Close contact: A person who has cared for or lived with a person with SARS-CoV disease or had a high likelihood of direct contact with respiratory secretions and/or body fluids of a person with SARS-CoV disease. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking within 3 feet, and direct touching. Close contact does not include activities such as walking by a person or briefly sitting across a waiting room or office.

**Persons who work in laboratories that contain live SARS-CoV should report any febrile and/or respiratory illnesses to the supervisor. They should be evaluated for possible exposures, and their clinical features and course of illness should be closely monitored. If laboratory workers with fever and/or respiratory illness are found to have an exposure to SARS-CoV, they should be managed according to the recommendations in [Supplement F: Laboratory Guidance](#), Appendix F6.

Activities: State and Local Health Departments

- Disseminate surveillance guidelines regarding timely recognition, evaluation, and reporting of possible SARS-CoV cases to healthcare providers, particularly triage, emergency department, and hospital-based providers.
- Establish a surveillance system to receive reports of:
 - Persons who require hospitalization for radiographically confirmed pneumonia and who are found to be at greater risk for SARS-CoV disease based on the provider-based screening described above
 - Clusters of persons with unexplained pneumonia
 - Positive SARS-CoV test results
- Review and obtain information needed to assess reported pneumonia cases and clusters for the likelihood of SARS-CoV disease. Considerations that increase the likelihood of SARS-CoV disease include:
 - Illness onset dates grouped within a 10-day period
 - Ill travelers who had contact with healthcare settings or persons hospitalized for unexplained respiratory infection while abroad and within 10 days of illness onset
 - Clusters of pneumonia among any group of persons for whom alternative diagnoses have been reliably excluded or clusters in which one case is linked to travel to a previously affected area or to an ill healthcare worker
- Review reports of persons who are hospitalized for pneumonia and are at increased risk for SARS-CoV disease to ensure that:
 - Adequate testing is done to rule out other infectious causes of pneumonia
 - SARS-CoV testing is ordered only when appropriate (see [Clinical Guidance on the Identification and Evaluation of Possible SARS-CoV Disease among Persons Presenting with Community-Acquired Illness](#))
- Consult the Centers for Disease Control and Prevention (CDC) as needed about cases or clusters of special concern.
- Report to CDC any positive SARS-CoV test results.
- Inform CDC of other cases or clusters of pneumonia that are of particular concern by calling 770-488-7100.

Activities: CDC

- Provide guidance to health departments, hospitals, and healthcare providers on SARS surveillance.
- Assist state and local health departments in the development of an electronic reporting system and related forms to facilitate uniform reporting.
- Assist states, as requested, in investigations of cases and clusters of persons with possible SARS-CoV disease.
- Collect and review reports of pneumonia requiring hospitalization in travelers and clusters of healthcare workers associated with a high index of suspicion for SARS-CoV disease, as specified in the preceding section.

Surveillance in the Presence of Person-to-Person Transmission of SARS-CoV in the World

Objective: Establish surveillance to promptly identify and report all new U.S. cases of SARS-CoV disease to facilitate outbreak management and control.

If person-to-person SARS-CoV transmission is documented in the United States or abroad, the likelihood that a person with fever or lower respiratory symptoms might be infected with SARS-CoV will increase but will remain low unless the person has a history of recent exposure to a known case of SARS-CoV disease or to a setting in which SARS-CoV transmission is occurring. Surveillance efforts should be modified to incorporate available risk factor information, particularly regarding geographic transmission patterns. The scope of surveillance activities in specific communities may differ substantially depending on the extent of disease in both the community and local healthcare facilities or institutions. Ongoing analysis of surveillance data and other information will be critical to inform decisions about the need to implement or discontinue various elements of enhanced surveillance.

Surveillance activities should also be enhanced or accelerated as needed by a particular community or institution. *Basic surveillance activities* should be initiated in areas with no or little SARS-CoV transmission and continued in areas with increased transmission. *Enhanced surveillance activities* should be considered if a community or facility experiences a significant increase in number of cases, if epidemiologic links between cases cannot be readily established, or if changing transmission patterns are identified. Enhanced surveillance activities should focus both on increasing the sensitivity of case detection through use of less specific clinical criteria when screening cases (see note below) and on evaluation of suspicious illnesses regardless of identification of an epidemiologic link.

Note: For persons with a high risk of exposure to SARS-CoV (e.g., persons previously identified through contact tracing or self-identified as close contacts of a laboratory-confirmed case of SARS-CoV disease, persons who are epidemiologically linked to a laboratory-confirmed case of SARS-CoV disease), respiratory symptoms used to screen patients should be expanded to include upper respiratory symptoms such as sore throat and rhinorrhea, in addition to any other early non-respiratory symptoms of SARS-CoV disease such as chills, rigors, myalgia, headache, or diarrhea. The more common early symptoms include chills, rigors, myalgia, and headache; in some patients, myalgia and headache may precede the onset of fever by 12-24 hours. However, diarrhea, sore throat, and rhinorrhea may also be early symptoms of SARS-CoV disease.

Activities: Healthcare Providers

Community-based Surveillance

Basic Activities

- Continue case detection and reporting as detailed above ("Surveillance in the Absence of Person-to-Person Transmission of SARS-CoV in the World") to identify potential SARS cases with no known epidemiologic links.
- Consider screening all patients presenting to outpatient clinics with a fever or lower respiratory symptoms for SARS risk factors. SARS risk factors include:
 - Travel within 10 days of illness onset to a foreign or domestic location with documented or suspected transmission of SARS-CoV (see www.cdc.gov/ncidod/sars/travel.htm)
 - Close contact within 10 days of illness onset with a person with known or possible SARS-CoV disease.
- If a patient with a fever or evidence of respiratory illness has a SARS risk factor, notify the local health department, and evaluate and isolate the patient according to the algorithm in [Clinical Guidance on the Identification](#)

[and Evaluation of Possible SARS-CoV Disease among Persons Presenting with Community-Acquired Illness](#)

Enhanced Activities

- If epidemiologic links between some local SARS cases cannot be readily established (i.e., the source of infection is unclear), consider SARS-CoV disease in the differential diagnosis and management of all patients with fever or lower respiratory symptoms, regardless of whether the patient has SARS risk factors (see the National Guideline Clearinghouse [NGC] summaries [Supplement C: Preparedness and Response in Healthcare Facilities](#) and [Supplement I: Infection Control in Healthcare, Home, and Community Settings](#) for guidance on triage and infection control).

Hospital-based Surveillance

This section includes recommendations for SARS surveillance in healthcare facilities. For detailed recommendations on screening and triage, access controls, and infection control measures in healthcare settings, see NGC summaries [Supplement C: Preparedness and Response in Healthcare Facilities](#) and [Supplement I: Infection Control in Healthcare, Home, and Community Settings](#).

Healthcare Facility with No Cases of SARS

Basic Activities

- Continue to implement case detection and reporting efforts as detailed above ("Surveillance in the Absence of Person-to-Person Transmission of SARS-CoV in the World") to identify potential SARS patients for whom an epidemiologic link is unknown.
- Screen all patients presenting to emergency rooms or hospital clinics with a fever or respiratory symptoms for SARS risk factors.
- Infection control personnel, occupational health officials, and providers should be alert for clusters of pneumonia requiring hospitalization among healthcare workers. Any clusters with illness with onset within the same 10-day period should be reported to local or state health officials.
- Report any potential SARS cases to the state or local health department according to their instructions.

Enhanced Activities

If SARS-CoV transmission is occurring in the surrounding community, screen all visitors upon entry to the facility for fever or lower respiratory symptoms. Screen symptomatic persons for SARS risk factors. Patients with risk factors should be isolated and evaluated according to the algorithm in [Clinical Guidance on the Identification and Evaluation of Possible SARS-CoV Disease among Persons Presenting with Community-Acquired Illness](#).

Healthcare Facility with a Few SARS Cases, but no Evidence of Nosocomial Transmission

Basic Activities

Continue all recommended surveillance plans outlined in the previous section. Implement daily monitoring of all healthcare workers caring for SARS patients. If a healthcare worker caring for SARS patients develops fever or lower respiratory symptoms or two or more early symptoms of SARS-CoV disease (chills, rigors, myalgia, headache, diarrhea, sore throat, rhinorrhea), notify the local health department, begin SARS isolation precautions, and initiate a clinical evaluation as outlined in the algorithm in [Clinical Guidance on the Identification and Evaluation of Possible SARS-CoV Disease among Persons Presenting with Community-Acquired Illness](#). The more common early symptoms of SARS-CoV disease include chills, rigors, myalgia, and headache; in some patients, myalgia and headache may precede the onset of fever by 12-24 hours. However, diarrhea, sore throat, and rhinorrhea may also be early symptoms of SARS-CoV disease.

Enhanced Activities

Screen all patients, visitors, and employees upon entry to the facility for fever or lower respiratory symptoms. Screen symptomatic persons for SARS risk factors. Patients with risk factors should be isolated and evaluated for both alternative respiratory illnesses and SARS-CoV disease (www.cdc.gov/ncidod/sars/clinicalguidance.htm).

Healthcare facility with a Larger Number of SARS Cases OR Nosocomial Transmission with All Cases Linked to a Clearly Identified Source

Activities

- Continue all recommended surveillance plans outlined in the previous section.
- Monitor *all* healthcare workers daily for fever or lower respiratory symptoms. If a healthcare worker has fever or lower respiratory symptoms, begin SARS isolation precautions (refer to the NGC summary [Supplement I: Infection Control in Healthcare, Home, and Community Settings](#)), obtain a chest x-ray, and initiate a preliminary clinical evaluation (www.cdc.gov/ncidod/sars/clinicalguidance.htm). Continue to screen all healthcare workers caring for SARS patients using the expanded clinical criteria. In addition to fever or lower respiratory symptoms, screen for the presence of any of the following: chills, rigors, myalgia, headache, diarrhea, sore throat, and rhinorrhea.
- Begin inpatient surveillance. Monitor patients daily for new or worsening respiratory symptoms. If found, investigate the patient for exposure to known or suspected SARS patients. If there is evidence of exposure, isolate the patient and test for alternative respiratory illnesses and SARS-CoV disease (www.cdc.gov/ncidod/sars/clinicalguidance.htm).

Healthcare Facility with Cases Attributed to Nosocomial Transmission with no Clearly Identified Source

Activities

- Continue all recommended surveillance plans outlined in the previous section.

- Expand inpatient surveillance. Test any patient with new or worsening fever or respiratory symptoms for SARS-CoV regardless of whether the patient has an epidemiologic link to a SARS case (www.cdc.gov/ncidod/sars/clinicalguidance.htm).
- Consider surveillance for illness and absenteeism among healthcare workers.

Activities: State and Local Health Departments

- Continue activities outlined above, as appropriate.
- Identify, evaluate, and monitor exposed contacts of SARS cases to identify previously unrecognized or secondary cases, as outlined below.
- Disseminate modified surveillance and patient screening guidelines to providers through the state/local Health Alert Network.
- Facilitate reporting from hospitals. If necessary, consider placing surveillance staff in hospitals with multiple SARS admissions.
- Review reports daily of persons reported from hospitals/providers to: 1) evaluate the level of risk for SARS, 2) ensure adequate testing to rule out SARS-CoV, 3) identify new clusters that might require special attention, 4) identify contacts and ensure that they are evaluated and monitored (as outlined below), and 5) monitor trends.
- Once person-to-person SARS-CoV transmission is documented anywhere in the world, report to CDC any person who meets the case definition for a probable case of SARS-CoV disease or a confirmed case of SARS-CoV disease, as defined by the Council of State and Territorial Epidemiologists (CSTE) (see Appendix B1 in the original guideline document).
- Immediately report to CDC any positive SARS-CoV test results.
- Following discussions between CDC and CSTE, CDC may also require reporting of other potential SARS-CoV cases (e.g., SARS reports under investigation [SARS RUIs]) as needed to meet national surveillance objectives. Updated national reporting requirements will be circulated to state and local health departments and posted on CDC's [SARS Web site](#) as indicated.

Activities: CDC

- Continue activities outlined above, as appropriate.
- Ensure that all states have systems to identify and monitor potential SARS cases and contacts.
- Ensure that states and hospitals have adequate guidance to implement effective surveillance and containment measures.
- As SARS activity evolves, work with CSTE to determine what surveillance information and related reporting mechanisms are needed to meet national surveillance objectives.
- Monitor the level of activity of SARS-CoV disease nationwide to:
 - Monitor the effectiveness of U.S. efforts to diagnose and contain SARS-CoV
 - Provide timely feedback to states in the form of data and other information
 - Mobilize additional resources and arrange surge capacity as needed
 - Report activity to the World Health Organization (WHO) to assist with global surveillance and control

- Oversee surveillance at ports of entry to aid in the identification of possible imported SARS-related illnesses, as outlined in the NGC guideline summary [Supplement E: Managing International Traveler-Related Transmission Risk](#).
- Facilitate coordinated surveillance and related activities in settings that may not be under state/local jurisdiction (e.g., military bases).
- Provide guidance regarding possible laboratory-acquired SARS-CoV infections, as outlined in the NGC guideline summary [Supplement F: Laboratory Guidance](#).

Reporting of Cases of SARS-CoV Disease

Reporting in the Absence of Person-to-Person Transmission of SARS-CoV in the World

Objective: Ensure adequate reporting of cases of severe respiratory illness (pneumonia requiring hospitalization) among persons who have risk factors for potential exposure to SARS-CoV.

Activities: Healthcare Providers

- Report to the state or local health department:
 - All persons requiring hospitalization for radiographically confirmed pneumonia who report at least one of the three risk factors for exposure to SARS-CoV outlined above
 - Any clusters (two or more persons) of unexplained pneumonia, especially among healthcare workers
 - Any positive SARS-CoV test result

Note: In the absence of SARS-CoV transmission worldwide, any **SARS-CoV-positive test result** should be communicated immediately by telephone to the state or local health department for confirmation and implementation of urgent and appropriate isolation precautions, contact tracing, and follow-up. See <http://www.cdc.gov/ncidod/sars/absenceofsars.htm> for details.

Activities: State and Local Health Departments

- Report any SARS-CoV-positive test result to CDC.
- Inform CDC of cases or clusters of pneumonia that are of particular concern by calling 770-488-7100.

Reporting in the Presence of Person-to-Person Transmission of SARS-CoV in the World

Objective: Ensure adequate reporting of all new potential and confirmed U.S. cases of SARS-CoV disease.

Activities: Healthcare Providers

- Continue to report to the state or local health department:
 - Persons requiring hospitalization for radiographically confirmed pneumonia who report at least one of the three risk factors for exposure to SARS-CoV outlined above and for whom an alternate diagnosis is not made

- Any clusters of unexplained pneumonia
- Any positive SARS-CoV test result
- Also report to state or local health departments:
 - Any patient with fever or lower respiratory illness who has a SARS risk factor (travel within 10 days of illness onset to a foreign or domestic location with ongoing transmission of SARS-CoV infection [<http://www.cdc.gov/ncidod/sars/travel.htm>] or close contact within 10 days of illness onset with a person with known or suspected SARS-CoV disease).

Activities: State and Local Health Departments

- Report to CDC any person who meets the case definition for a probable case of SARS-CoV disease or a confirmed case of SARS-CoV disease, as defined by CSTE (see Appendix B1 in original guideline document).
- Immediately report to CDC any positive SARS-CoV test result.
- Following discussions between CDC and CSTE, CDC may also require reporting of other potential SARS-CoV cases (e.g., SARS RUIs) as needed to meet national surveillance objectives. Updated national reporting requirements will be circulated to state and local health departments and posted on the CDC's [SARS Web site](#) as indicated.

Activities: CDC

CDC will report confirmed or potential cases of SARS-CoV disease to WHO, as required per international reporting guidelines.

Plan for Surveillance of Contacts of SARS Cases

Surveillance of contacts of SARS cases is essential to control efforts. Rapid identification, evaluation, and monitoring of exposed asymptomatic contacts and prompt isolation of those who are found to be clinically ill can prevent further transmission of disease.

Infectiousness in patients with SARS-CoV disease appears to begin with the onset of clinical illness. Although the exact duration of infectiousness is not known, it is recommended that patients with SARS-CoV disease avoid contact with other persons for up to 10 days after resolution of fever and improving or absent respiratory symptoms. Contact tracing is the systematic identification of persons who may have been exposed to patients with suspected or confirmed SARS-CoV disease during the infectious period. In some instances, public health officials should also consider identifying persons who had contact with a SARS patient before the patient's onset of illness, if there is a chance that the contacts might have been exposed to the same source of infection as the case. Such situations would include those in which the SARS patient's source of infection is unclear or not previously recognized (e.g., an index case among a group of tourists).

Objective 1: Prepare to conduct surveillance of contacts by ensuring the availability of personnel and other resources.

Activities: State and Local Health Departments

- Designate one person to coordinate activities related to contact tracing, interviewing, evaluation, and monitoring.
- Identify additional personnel to manage contact tracing and monitoring in different regions of the state. Personnel can be provided from state or other resources as needed. Ideally, select staff with field experience involving contact tracing (e.g., from sexually transmitted disease [STD], tuberculosis [TB], or human immunodeficiency virus [HIV] control programs).
- As needed, modify and adopt sample forms provided by CDC (see Appendix B3 in original guideline document).

Additional recommendations related to preparedness planning for surveillance and management of SARS contacts, including community containment measures such as non-hospital isolation and quarantine, are provided in the NGC guideline summary [Supplement D: Community Containment Measures, including Non-Hospital Isolation and Quarantine](#).

Objective 2: Identify all contacts of all SARS cases.

Activities: State and Local Health Departments

- Identify contacts of known or possible cases of SARS-CoV disease. Obtain information from the case-patient, next of kin, workplace representative, or others with appropriate knowledge of the case-patient's recent whereabouts and activities.
- Trace each contact whose name, address, and/or telephone number is provided.
- When contact information is unknown or incomplete, use a variety of resources (e.g., work and school contact numbers, telephone directories, voting lists, neighborhood interviews, site visits, visits to "hangouts") to trace contacts. If contacts cannot be found through these mechanisms, other methods for notifying potential contacts (e.g., media announcements) may have to be considered.
- Locate and interview each contact to: 1) confirm exposure to the SARS case, 2) document the presence or absence of fever or lower respiratory symptoms⁺, and 3) identify additional contacts.
- For persons who are free of symptoms at the time of interview, initiate plans for ongoing symptom monitoring or other restrictions implemented by public health officials (see the NGC guideline summary [Supplement D: Community Containment Measures, including Non-Hospital Isolation and Quarantine](#)) for 10 days after the last contact with the SARS case.

⁺ For persons with a high risk of exposure to SARS-CoV (e.g., persons previously identified through contact tracing or self-identified as close contacts of a laboratory-confirmed case of SARS-CoV disease, persons who are epidemiologically linked to a laboratory-confirmed case of SARS-CoV disease), clinical criteria should be expanded to include, in addition to either fever or lower respiratory symptoms, the presence of any of the early symptoms of SARS-CoV disease (i.e., chills, rigors, myalgia, headache, diarrhea, sore throat, and rhinorrhea) as a potential trigger to initiate a clinical evaluation for SARS-CoV disease.

Objective 3: Prioritize contacts on the basis of estimated risk of exposure if necessary.

Contact tracing should include detailed interviews so that contacts can be prioritized on the basis of their estimated risk of SARS-CoV exposure. This process allows identification of the contacts at greatest risk and more efficient use of the resources needed for follow-up and monitoring. In some instances, however, resource limitations (e.g., limited number of skilled interviewers) or large numbers of potential contacts may preclude focused contact tracing and require follow-up and monitoring of a large number of contacts with less definite risks.

Activities: State and Local Health Departments

- Consider establishing priorities among contacts based on the following factors:
 - Probability of SARS-CoV disease in the index case (e.g., contacts of confirmed and probable SARS-CoV cases would be highest priority)
 - Duration and spatial proximity (e.g., <3 feet) of the contact's exposure to the case
 - History of exposure(s) known or suspected to be at higher risk for transmission (e.g., SARS patient care, participation in an aerosol-generating procedure, intimate contact)
 - Documented secondary
- After a review of contact priority lists and available resources, state authorities may decide to adopt different levels of contact follow-up and monitoring activities for different categories of contacts. For detailed recommendations for management of contacts, see the NGC guideline summary [Supplement D: Community Containment Measures, including Non-Hospital Isolation and Quarantine](#).

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation. The working groups derived the guidance document from lessons learned during the 2003 epidemic, other Centers for Disease Control and Prevention (CDC) preparedness and response plans, and the advice, suggestions, and comments of state and local health officials and representatives of professional organizations.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Early detection of cases and clusters of respiratory infections that might signal the re-emergence of severe acute respiratory syndrome-associated coronavirus (SARS-CoV) disease while minimizing unnecessary laboratory

- testing, concerns about SARS-CoV, implementation of control measures, and social disruption
- Prompt and complete identification and reporting of potential cases to facilitate outbreak control and management
 - Identification and monitoring of contacts of cases of SARS-CoV disease to enable early detection of illness in persons at greatest risk

POTENTIAL HARMS

Healthcare providers are advised to use severe acute respiratory syndrome-associated coronavirus (SARS-CoV) testing judiciously and in consultation with local or state public health officials, given that: 1) the positive predictive value of a positive laboratory test in the absence of SARS-CoV transmission is extremely low, and 2) false-positive tests may generate tremendous anxiety and concern and expend valuable public health resources.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Information Management

Rapid and timely reporting of cases of severe acute respiratory syndrome-associated coronavirus (SARS-CoV) disease and dissemination of surveillance information are key to the management of a SARS outbreak. As part of the SARS Incident and Command Management System (see the National Guideline Clearinghouse [NGC] summary [Supplement A: Command and Control](#)), the Centers for Disease Control and Prevention (CDC) has developed a web-based reporting system for SARS reports under investigation (RUIs) and SARS-CoV disease cases. This system allows states to report data on SARS RUIs and cases via one of two secure mechanisms based on the capacities at the state health departments: 1) direct entry into a web-based interface, available to all states with minimal technological requirements, or 2) upload of data from electronic databases maintained at the state into the web-based interface. Data that are reported to CDC will be exported to state health departments daily as an analyzable data set in a pre-defined format. Results of laboratory testing at CDC will be integrated into the data transmitted to the states. For more information on the web-based reporting system, contact the CDC Secure Data Network staff via telephone (800-532-9929) or email: cdcsdn@cdc.gov.

SARS-CoV disease has recently been designated a nationally notifiable disease to be reported to the Nationally Notifiable Diseases Surveillance System (NNDSS). CDC is encouraging states to use either direct entry into or data upload to the SARS web information system for SARS RUI and SARS-CoV disease cases. When clinical, epidemiologic, and laboratory data reported from states to the CDC SARS web-based reporting system meet the criteria for a reportable SARS-CoV disease case, a record will automatically be added to NNDSS and states will be notified of the transfer of data to NNDSS.

Contact tracing and monitoring will require substantial data management resources. The information technology needs for timely surveillance and

management of contacts of SARS cases are currently under discussion among CDC and partners in state and local health departments, and development of a contact tracing database is ongoing.

Appendices

The appendices in the original guideline document include information to assist implementation of SARS Surveillance at the local and state level.

- Appendix B1 provides the revised Council on State & Territorial Epidemiologists (CSTE) SARS surveillance case definition, including clinical criteria, epidemiologic criteria, laboratory criteria, and exclusion criteria.
- Appendix B2 is a sample SARS domestic case reporting form

IMPLEMENTATION TOOLS

Patient Resources
Slide Presentation

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Centers for Disease Control and Prevention (CDC). Public health guidance for community-level preparedness and response to severe acute respiratory syndrome (SARS). Version 2. Supplement B: SARS surveillance. Atlanta (GA): Disease Control and Prevention (CDC); 2004 Jan 8. 31 p.

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 Nov 3 (revised 2004 Jan 8)

GUIDELINE DEVELOPER(S)

Centers for Disease Control and Prevention - Federal Government Agency [U.S.]

SOURCE(S) OF FUNDING

United States Government

GUIDELINE COMMITTEE

Centers for Disease Control and Prevention Severe Acute Respiratory Syndrome (SARS) Preparedness Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version issued by the Centers for Disease Control and Prevention (CDC) on November 13, 2003.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Centers for Disease Control and Prevention (CDC) Web site:

- [HTML Format](#)
- [Microsoft Word](#)
- [Portable Document Format \(PDF\)](#)

Print copies: Available from the Centers for Disease Control and Prevention, MMWR, Atlanta, GA 30333. Additional copies can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325; (202) 783-3238.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- In the absence of SARS-CoV transmission worldwide: guidance for surveillance, clinical and laboratory evaluation, and reporting. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2004 Jan 8. 15 p.

Electronic copies: Available from the [CDC Web site](#).

- Clinical guidance on the identification and evaluation of possible SARS-CoV disease among persons presenting with community-acquired illness. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2004 Jan 8. 15 p.

Electronic copies: Available from the [CDC Web site](#).

- PowerPoint Slide Set: SARS Surveillance: Preparing for Potential Re-emergence of Disease.

Electronic copies: Available from the [CDC Web site](#) in PDF format and as Microsoft PowerPoint downloads.

See also:

- Appendix B1: Revised Council of State and Territorial Epidemiologists (CSTE) SARS Surveillance Case Definition.
- Appendix B2: SARS Domestic Case Reporting Form.
- Appendix B3: SARS Contact Report Forms (under development).

Electronic copies: Available from the [CDC Web site](#) in PDF format and as Microsoft Word downloads.

Print copies: Available from the Centers for Disease Control and Prevention, MMWR, Atlanta, GA 30333. Additional copies can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325; (202) 783-3238.

PATIENT RESOURCES

The following is available:

- Information for SARS Patients and Their Close Contacts. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2004 Feb 6.
- Infection Control Precautions for SARS Patients and Their Close Contacts in Households. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2004 Jan 8.

Electronic copies: Available from the [Centers for Disease Control and Prevention \(CDC\) Web site](#).

Print copies: Available from the Centers for Disease Control and Prevention, MMWR, Atlanta, GA 30333. Additional copies can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325; (202) 783-3238.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for

them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on February 10, 2004.

COPYRIGHT STATEMENT

No copyright restrictions apply.

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at <http://www.guideline.gov/about/inclusion.aspx>.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

© 1998-2008 National Guideline Clearinghouse

Date Modified: 9/29/2008

