



State of New Hampshire
Interim Severe Acute Respiratory Syndrome
(SARS) Epidemic Preparedness Plan

Prepared by
New Hampshire Communicable Disease Epidemic Control Committee
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Abbreviations Used in This Document

| | |
|-----------|--|
| AIIR | Airborne infection isolation room |
| ASTHO | Association of State and Territorial Health Officers |
| BCDC | NH DHHS, Bureau of Communicable Disease Control |
| BCDS | NH DHHS, Bureau of Communicable Disease Surveillance |
| CDC | U.S. Centers for Disease Control and Prevention |
| CDECC | NH Communicable Disease Epidemic Control Committee |
| C/PIT | Contact/Patient Investigation Team |
| DHHS | NH Department of Health and Human Services |
| CSTE | Council of State and Territorial Epidemiologists |
| EOP | Emergency Operation Plan |
| EMS | Emergency Medical Services |
| ESF | Emergency Support Function |
| HCW | Healthcare worker |
| HEICC | Hospital Emergency Incident Command Center |
| HHS | Federal Department of Health and Human Services |
| ICP | Infection Control Personnel |
| ICS | Incident Command Structure |
| MHD | Manchester Health Department |
| NH | New Hampshire |
| NH BEM | New Hampshire Bureau of Emergency Management |
| OCPH | DHHS, Office of Community and Public Health |
| PAPR | Powered, air-purified respirator |
| PHL | DHHS, Public Health Laboratories |
| PIO | DHHS, Public Information Office |
| PPE | Personal protective equipment |
| SARS | Severe acute respiratory syndrome |
| SARS Co-V | SARS Coronavirus (the virus that causes SARS) |
| WHO | World Health Organization |

SECTION I. INTRODUCTION TO SARS EPIDEMIC PLANNING

1. BACKGROUND

SARS, or Severe Acute Respiratory Syndrome, is an atypical pneumonia caused by a previously unknown Coronavirus, now called SARS Co-V. It was first identified in Guangdong Province, China, in November 2002 and later spread to Hanoi, Singapore, and Hong Kong (http://www.who.int/csr/sarsarchive/2003_03_12/en/). It has since spread to 29 countries, with over 8000 probable cases and nearly 800 deaths worldwide.

The spread of SARS was facilitated by the globally mobile nature of our society, with most initial cases being recognized in travelers from SARS-affected areas. In addition, infections among healthcare workers (HCWs) have been one of the hallmarks of the global SARS outbreak. Data available from outbreak investigations in numerous affected countries indicate that a large proportion of secondary SARS transmission (often >50%) occurred in hospital and healthcare settings, among HCWs caring for SARS patients, and other patients and visitors. For many of these cases, transmission could be attributed to initially unrecognized SARS cases, where recommended protective measures and equipment had not been in use. In addition, a substantial proportion of secondary cases have also occurred among close household contacts of SARS patients and exposed HCWs, who failed to use appropriate infection control procedures while caring for SARS patients. There is also clear evidence of the risk of community transmission when appropriate infection control measures were not instituted.

New Hampshire (NH) has acted aggressively to minimize the risk of its citizens being exposed to and infected with the SARS virus. To date, there have been no SARS cases in the State. (Three suspect cases were removed from the Centers for Disease Control and Prevention [CDC] list following the updated SARS case definition in July 2003.)

2. PURPOSE

The purpose of this document is to advise healthcare workers and administrators, public officials and the public in appropriate activities toward preparedness and response in the event of a SARS epidemic. The strategies, guidelines, and tools included in this document are designed to achieve the following objectives:

- Rapidly and efficiently identify SARS cases and their exposed contacts
- Ensure rapid information exchange among clinicians, public health officials, and administrators of healthcare facilities about potential SARS cases
- Rapidly and effectively implement measures to prevent the transmission of SARS-CoV
- Continuously monitor the course and characteristics of a SARS outbreak and promptly revise control strategies as needed
- Implement effective communication and education strategies for the public, the media, community officials, healthcare communities, and public health communities to ensure an appropriate response to SARS
- Coordinate and integrate SARS preparedness and response planning efforts with other preparedness plans and systems

3. PROCESS

The NH SARS Epidemic Preparedness Plan was developed by the NH Communicable Disease Epidemic Control Committee (CDECC), which consists of representatives from the two local health departments, physicians specializing in infectious diseases and epidemiology, representatives from the NH Bureau of Emergency Management (NH BEM), the State and Deputy State Epidemiologists, other officials from DHHS, and partners such as the NH Hospital Association. The plan was modeled on CDC guidance, *SARS Public Health Guidelines*, Draft October 10, 2003, which bases SARS response on the extent of SARS activity in the community and within healthcare facilities. The NH SARS Epidemic Preparedness Plan is intended to undergo periodic revisions as situations in the State change and as guidance from CDC is updated. It will be reviewed regularly by the NH CDECC, and revised as appropriate.

The development of *NH SARS Epidemic Preparedness Plan* was based on the following assumptions:

- There will likely be limited/no vaccination or specific treatment options
- SARS will likely emerge in a country other than the United States, but can become epidemic in the United States and possibly in NH
- The federal government has limited resources allocated for state and local plan implementation, and therefore, the State will provide supplementary resources in the event of an epidemic, which may include the redirection of personnel and monetary resources from other programs
- This plan is synergistic with the previously published, “State of New Hampshire SARS Surveillance and Clinical Response Guidelines”, available at the DHHS website (<http://www.dhhs.state.nh.us>)

4. RESPONSIBILITIES AND LEGAL AUTHORITY IN PUBLIC HEALTH EMERGENCY PLANNING

The preparation for and response to an outbreak of SARS requires a coordinated response by public health authorities and other emergency response entities at the local, state, and federal levels of government. State and local governments have primary responsibility for responding to an outbreak of SARS within their jurisdictions, but the federal government has authority to support affected states or jurisdictions as necessary.

4.1 Federal Authority

The U.S. Government Interagency SARS Concept of Operations Plan (CONPlan) describes plans for the federal response to a future outbreak of SARS. According to this plan, the Department of Health and Human Services (HHS) is the U.S. Government’s lead agency for the preparation, planning, and response to a SARS outbreak. As such, HHS will coordinate the U.S. Government’s response to the public health and medical requirements of a SARS outbreak. The HHS Secretary’s Command Center will serve as the national incident command center for all health and medical preparedness, response, and recovery activities.

As the component of HHS responsible for disease prevention and control, CDC will have primary responsibility for tracking a SARS outbreak and managing the operational aspects of the public health response. To this end, CDC will augment local and state resources for disease surveillance, epidemiologic response, diagnostic laboratory services and reagents, education and communication, and disease containment and control.

Table 1. Statutory Authority

| Statute | Agency | Authority |
|---|--------------------|---|
| US Public Law 93-288 | Federal government | Provides authority to respond to emergencies and provide assistance to protect public health; implemented by Federal Emergency Management Act |
| RSA 107-C: Emergency Management Act | Governor NH BEM | Allows Governor to declare a state of emergency Gives Governor direction and control of emergency management Allows Governor to delegate authority to NH BEM Director to carry out necessary functions to preserve lives of the people of NH during an emergency |
| RSA 141-C: Communicable Disease | DHHS | Authorizes the DHHS to purchase and distribute pharmaceutical agents to prevent the acquisition and spread of communicable disease Authorizes the DHHS to adopt rules to distribute prescription pharmaceuticals in public clinics Establishes a vaccine purchase fund for the purchase of antitoxins, serums, vaccines and immunizing agents |
| RSA 99-D: Defense & Indemnification of State Officers & Employees | DHHS | Protects State employees who administer immunizations as part of their official duties |
| RSA 541-A | State Agencies | Allows State agencies to adopt emergency rules when there is imminent peril to public health or safety, without going through normal rule making process |

4.2. State Authority

The State of NH has designated the CDECC to oversee the SARS planning process, in cooperation with local health agencies and other partners. DHHS will continue normal day-to-day operations during pre-epidemic periods. During an epidemic, DHHS will have primary responsibility for 1) making recommendations to aid in controlling the spread of SARS, 2) maintaining surveillance systems to monitor the spread of disease, and 3) keeping the public informed. When the capacity of DHHS to carry out these functions has been reached, the NH BEM will assist.

4.3. Local Authority

Each community in the State, including those without existing health departments, should consider developing a SARS epidemic plan, using this document as a template.

5. LEGAL PREPAREDNESS

Legal preparedness is a key component of SARS preparedness and response. A response to an outbreak of SARS may require coordination of federal, state, and local legal authorities to impose a variety of emergency public health and containment measures, at both the individual and community levels. These measures might include:

- Active surveillance of potential cases and their contacts
- Isolation
- Quarantine

In the United States, the President signed an executive order on April 4, 2003, adding SARS to the list of quarantinable communicable diseases. This executive order provides CDC with the legal authority (<http://www.cdc.gov/ncidod/sars/executiveorder040403.htm>) to implement isolation and quarantine measures for SARS, as part of its transmissible disease-control measures. The CDC, through its Division of Global Migration and Quarantine, is empowered to detain, medically examine, and/or conditionally release persons suspected of having certain communicable diseases.

In general, the federal government has primary responsibility for preventing the introduction of communicable diseases from foreign countries into the United States, and the State and local NH jurisdictions have primary responsibility for isolation and quarantine within their borders. By statute, the HHS Secretary may accept state and local assistance in the enforcement of federal quarantine and other health regulations and may assist the State and local officials in the control of communicable diseases. Because isolation and quarantine are “police power” functions, public health officials at the federal, State, and local levels may seek the assistance of their respective law enforcement counterparts to enforce a public health order.

The State of NH is following recommendations for legal preparedness from the CDC and the ASTHO (*State and Local Health Officials Epidemic SARS Checklist: Is Your Jurisdiction Ready?*). DHHS legal counsel confirms that:

- NH’s laws and procedures on quarantine, isolation, closing premises and suspending public meetings have been reviewed and can be implemented to help control an epidemic
- NH’s statutes regarding medical licensure, liability, and compensation for in-State, out-of-State, returning retired, and non-medical volunteers have been reviewed. NH law allows the State to enter into mutual aid agreements for reciprocal emergency management aid and assistance. Parties to such agreements shall be entitled to the same immunities and exemptions as are afforded by statute to NH entities engaged in emergency management functions. During a public health emergency requirements for a professional license shall not apply to authorized emergency management workers. Dentists, nurses, and student nurses shall be regarded as authorized emergency management workers and may perform certain medical procedures that fall outside the scope of their usual practice. Emergency management workers from outside the State of NH shall possess the same powers, duties, immunities, and privileges as the worker would normally possess if performing his or her regular duties in their state of origin
- During the course of a public health emergency, rules and regulations regarding licensure can be suspended or modified as necessary to allow healthcare institutions to use temporary facilities as necessary for the provision of medical care and treatment

- Worker's Compensation and Unemployment Compensation laws have been reviewed to determine if and how they would or could be used in the event that a person misses work due to being subjected to an order of isolation or quarantine. The State will be considering what provisions need to be in place to allow a person subject to such orders to be compensated for the time that the person is out of work

6. EMERGENCY OPERATIONS AND INCIDENT COMMAND STRUCTURE

The sustained, coordinated efforts required to control SARS lend themselves to the principles and structure of incident command and management systems. The NH Public Health Incident Command Structure (NH ICS) is currently under development; it will be a predetermined organizational structure for potential mass casualty events that address planning, operations, logistics, finance, and administration.

In the event that the SARS epidemic reaches the status of a public health emergency, the NH Emergency Operations Plan (EOP) will be activated. The EOP provides an all-hazards approach to disaster response and recovery, and outlines the roles and responsibilities of organizations and state agencies that would likely be involved in an emergency situation. At the heart of the EOP are 16 Emergency Support Functions (ESF). One or more of these ESFs might be activated in the event of a disaster. Each ESF is headed by one primary agency, with one or more support agencies assigned to the ESF to help with operations. DHHS is the primary agency for ESF-8, Health and Medical Services, and plays a support role in seven other ESFs.

DHHS roles and responsibilities when the EOP- ESF 8 is invoked are:

- Activate the DHHS' Incident Management Team, as well as ESF-8 and its support agencies as needed to support emergency operations
- Coordinate with ESF-2, Communications and Alerting, to establish and maintain a secure communication capability within the health, human services and medical groups
- Coordinate all emergency operations and activities of this ESF to ensure that emergency health, medical and human services capabilities are sustained during emergency operations
- Coordinate with ESF-7, Resource Support, to obtain additional medical equipment and supplies, as needed and as available
- Coordinate with ESF-10, Hazardous Materials, for decontamination capabilities at hospitals and other medical facilities, as needed. Provide information on health risk assessment and injury prevention to first responders and the general public
- Coordinate with support agencies to help assure the health, medical, human services and mental health needs of disaster victims and first responders are being met
- Coordinate with ESF-1, Transportation, for the provision of vehicles to deploy personnel and resources to the field
- Provide personnel and resources to conduct patient tracking, trace backs, epidemiological investigations and medical surveillance, as required
- Provide appropriate monitoring and surveillance capabilities
- Provide for the collection, transfer and testing of laboratory samples, as needed
- Provide personnel and resources to help ensure drug safety, as well as the safety of the public's food and potable water supplies

- Coordinate with ESF-14, Public Information, for the dissemination of public health and safety information, and to control and dispel rumors
- Coordinate with ESF-4, Firefighting, ESF-13, Law Enforcement & Security, and ESF-15 Volunteers and Donations, to help ensure the health, safety and mental well being of emergency workers
- Provide crisis counseling and critical incident stress debriefing and management as needed or requested
- Coordinate with ESF-13, Law Enforcement & Security, to provide necessary security, transportation and escort
- Prioritize resource requests and allocations, as needed
- Coordinate interfacility transfers using State and Federal resources
- Coordinate with ESF-15, Volunteers and Donations, to recruit and use volunteer health practitioners and non-clinician volunteers to support disaster victims and emergency response personnel
- Coordinate with the Medical Examiner's Office to manage the deceased
- Ensure that an Incident Action Plan is developed for each operational period and that it is coordinated with the EOC Operations Officer and ESF-5, Information and Planning
- Collect and maintain status information pertinent to ESF-8 and coordinate with ESF-5, Information and Planning, to ensure that it is included in the Situation Report.
- Coordinate with ESF-13, Law Enforcement & Security, to conduct joint incident investigations as necessary
- Coordinate with ESF-10, Hazardous Materials, to ensure the proper disposal of hazardous materials
- Communicate necessary health-related information to responders
- Coordinate the provision of acute crisis, intermediate, and long-term mental health support to patients, families, general community and responders
- Coordinate with colleges and universities as necessary

In summary, in the event of a SARS epidemic, the goal will be to maximize the use of limited resources, monitor the status of the outbreak, collect and organize situational information, manage staffing needs and requirements, monitor/supply persons in isolation and quarantine, maintain an inventory of respirators and other PPE equipment, track the status of/procure essential supplies, operate special/temporary facilities, and manage administrative and financial aspects of the response.

7. DEFINITIONS

A **case** of SARS-CoV disease is a person with an illness that is clinically compatible with the features of SARS described previously and with laboratory evidence of SARS-CoV infection.

Community containment measures refer to the separation of infected or exposed persons from non-infected persons by use of isolation, quarantine, or other restrictions on movement and activities.

A **contact** is a person who has been exposed to a SARS case during the infectious period. A **close contact** is a person who has cared for or lived with someone with SARS or had direct contact with respiratory secretions or body fluids of a patient with SARS. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking to someone within 3 feet,

and touching someone directly. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief time.

Contact tracing involves the identification, evaluation, counseling, and monitoring of persons who may have been exposed to a patient with SARS-CoV infection. Contact tracing may result in strict or modified quarantine and regular monitoring for evidence of illness.

Healthcare worker refers to any employee who has close contact (i.e., within 3 feet) of 1) patients, 2) patient-care areas (i.e., patient rooms, procedure areas), or 3) patient-care items (i.e., linens and other waste).

The **incubation period** is the time from exposure to an infectious disease to symptom onset.

Infection control measures practiced by healthcare personnel in healthcare facilities decrease the risk for transmission and acquisition of infectious agents through proper hand hygiene, scrupulous work practices, and use of personal protective equipment, such as masks, gloves, gowns, and eye protection. The types of infection control measures are based on how an infectious agent is transmitted and include standard, contact, droplet, and airborne precautions (<http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm>).

- **Standard precautions** are work practices required for the basic level of infection control. They center on proper hand hygiene and include use of personal protective equipment (PPE) to serve as protective barriers and appropriate handling of clinical waste.
- **Contact precautions** are work practices designed to reduce the risk of transmitting infectious agents by direct or indirect contact with an infectious person. Direct contact transmission involves a direct body surface-to body surface contact and physical transfer of infectious agents between an infected person and a susceptible host. Indirect-contact transmission involves contact of a susceptible host with a contaminated intermediate object, such as contaminated instruments or dressings or contaminated hands that are not washed or gloves that are not changed between patients. Contact precautions may also include the use of PPE (gloves, gown, surgical mask, goggles or face shield) to reduce the spread of infectious agents.
- **Droplet precautions** are designed to reduce the risk of droplet transmission of infectious agents. Droplet transmission occurs when droplets containing infectious agents generated by an infectious person are propelled a short distance through the air (i.e., by coughing, sneezing, or talking) and deposited on the conjunctivae or mucous membranes of the mouth or nose of a susceptible person. Droplet precautions include the use of PPE (gloves, gown, surgical or other mask, and goggles or face shield) to reduce the spread of infectious agents.
- **Airborne precautions** are designed to reduce the risk of airborne transmission of infectious agents. Airborne transmission occurs by dissemination of nuclei of evaporated droplets that may remain suspended in the air for long periods of time. Microorganisms carried in this way can be dispersed by air currents and may be inhaled by a susceptible host in the same room or over a longer distance from the source patient, depending on environmental factors. An airborne infection isolation room (AIIR) that has negative pressure relative to the surrounding area is required for implementation of airborne precautions. Airborne precautions also include the use of PPE (gloves, gown, N95 respirator, and goggles or face shield) to reduce the spread of infectious agents, such as SARS-CoV.

Isolation and quarantine are standard practices in public health, and both aim to control exposure to infected or potentially infected persons. Both may be used voluntarily or compelled by public health authorities and can be applied on an individual or population level.

- **Isolation** refers to the separation of persons with a specific contagious illness from contact with susceptible persons and the restriction of their movement to contain the spread of that illness. Isolation usually occurs in a hospital but can be in a home or dedicated isolation facility.
- **Quarantine** refers to the separation and restriction of movement of well persons who may have been exposed to an infectious agent and may be infected but are not yet ill. Quarantine usually occurs in the home but can be in a dedicated facility or hospital. The term “quarantine” can also be applied to restrictions of movement into or out of buildings, other structures, and public conveyances. States generally have authority to invoke and enforce quarantine within their jurisdictions, although quarantine laws vary among states. CDC is also empowered to detain, medically examine, or conditionally release persons suspected of carrying certain communicable diseases at points of arrival in and departure from the United States or across state lines.
 - **Work quarantine** – In the event that quarantine is used as an occupational exposure management tool, some HCWs may need to continue working to ensure sufficient staffing levels. Appropriate measures should be developed for HCWs to comply with quarantine orders and to continue working at the healthcare facility. Limitations on alternative employment will be needed. (See: www.cdc.gov/ncidod/sars/exposuremanagementframe.htm)

Nosocomial refers to a healthcare setting, such as a hospital or clinic. Typically, nosocomial transmission refers to spread of an infectious disease from a patient in a healthcare setting or from a healthcare worker to another patient, worker or visitor in the same setting.

Personal protective equipment (PPE) is barrier protection to be used by an individual to prevent disease transmission. PPE may include gowns, gloves, masks, goggles or face shields. The type of mask (i.e., surgical, N95 or PAPR) is disease-specific and defined in the type of precautions.

SARS epidemic: in general terms, an epidemic is any unusual occurrence or cluster of illness, which may pose a threat to the public’s health. For SARS preparedness and response, an epidemic will be defined in this document in terms of regional and healthcare facility activity, using an alert level system as described in Section II.

SECTION II. PLAN FOR SURVEILLANCE OF SARS CASES IN NH.

1. INTRODUCTION

Whether or not SARS will actually recur and to what extent is unknown, which makes surveillance challenging. The most likely initial sites of SARS recurrence are: locations where community SARS transmission previously occurred, southern China (where human illness is thought to have originated), and in laboratories where breaks in infection control technique could lead to laboratory-acquired infections that might be a source of further transmission in humans.

Early clinical features of SARS are not specific enough to reliably distinguish SARS from other respiratory illnesses, and therefore, risk of exposure is key to considering the likelihood of a diagnosis of SARS, since most SARS patients have a clear history of exposure to another patient or to a specific setting where recognized SARS-CoV transmission has occurred; However, in a setting of extensive SARS-CoV transmission, SARS should be considered in any person with a febrile respiratory illness, even if an epidemiologic link cannot be readily identified.

Up-to-date information on the presence of SARS globally is needed in order to accurately assess exposure risks. Since June 2003, respiratory illness due to SARS-CoV has been on the list of nationally reportable diseases. Except for SARS-CoV laboratory-positive cases, there is no mandatory reporting of *potential* SARS cases ***in the absence of SARS activity worldwide***. The current CSTE/CDC surveillance case definition for SARS is available at the CDC website: <http://www.cdc.gov/ncidod/sars>. The SARS case definition distinguishes: 1) cases that are confirmed (i.e., have clinically compatible illness that is laboratory-confirmed) or probable (i.e., have clinically compatible illness epidemiologically linked to a laboratory-confirmed case); 2) potential SARS cases under investigation, including persons whose illness is less severe and whose exposures to SARS-CoV are not definitive.

The key to controlling a SARS outbreak is the prompt detection of cases and their contacts, followed by the rapid implementation of control measures. Surveillance for SARS should be conducted both in the absence and the presence of global SARS to:

- Ensure early detection of cases and clusters of respiratory infections that might signal the global re-emergence of SARS.
- Maintain prompt and complete identification and reporting of potential cases to facilitate control and management of a SARS outbreak.
- Identify and monitor contacts of SARS cases to enable early detection of illness in persons at greatest risk for disease.

Frequent communication among public health officials and healthcare providers, real-time analysis of data, and timely dissemination of information are all essential for outbreak management.

2. PLAN FOR SURVEILLANCE OF SARS CASES IN NH IN THE ABSENCE OF KNOWN SARS ACTIVITY WORLDWIDE.

Surveillance will aim to detect cases and clusters of respiratory infections that might herald the re-emergence of SARS. Most likely, SARS will re-emerge in a setting outside the United States, where previous severe outbreaks became manifest in the spring and summer of 2003. In the absence of known SARS activity worldwide, surveillance efforts locally will focus on hospitalized cases of pneumonia in groups likely to be first affected by the re-emergence of SARS.

2.1 Activities for Healthcare Providers and Healthcare Facilities

The CDC recommends that all patients hospitalized for pneumonia be screened with the following questions:

- Is the person employed as a healthcare worker?
- Has there been close contact with a person(s) recently found to have radiographic evidence of pneumonia *without an alternative diagnosis*?
- In the 10 days before the onset of illness, was there travel to, or was there close contact with an ill person who recently traveled to, a previously affected SARS area?

Although NH DHHS does not discourage any provider or facility from using these screening questions routinely, NH DHHS is planning to provide technical assistance to several large-volume healthcare settings to operationalize this screening process before a recommendation is made to institute this routine statewide. This pilot stage will attempt to determine 1) the sensitivity of these questions to identify other important causes of respiratory illness; 2) the most appropriate timing for these questions (emergency departments, inpatient, etc); 3) which healthcare worker population should administer the questions; and 4) what public health activity a single “yes” should prompt.

Recommended activities currently include:

- Keeping alert for clusters of unexplained pneumonia among two or more healthcare workers in the same facility
- Using SARS-CoV testing only after consultation with public health experts from the NH BCDC. The positive predictive value of laboratory tests in the absence of known SARS activity is extremely low, and false-positive test results may generate concern or panic and will consume limited resources unnecessarily.
- Reporting the following to the NH BCDC (603-271-4496, or after hours to 1-800-852-3345 ext. 5300):
 - Any cluster of unexplained pneumonia
 - Any positive SARS-CoV test result (requires immediate contact by telephone)

2.2. Activities for the NH DHHS.

- Conduct education and training sessions for appropriate healthcare providers and emergency response officials including Hazmat, police, fire, EMS, and hospital officials
- Provide information to hospitals regarding appropriate screening triage procedures, infection control and notification procedures for persons with suspect SARS illness

- Obtain and review information needed to further assess reported pneumonia cases and clusters with regard to the likelihood that the illnesses might be due to SARS-CoV infection.

2.3. Activities for the CDC.

- Providing SARS surveillance guidelines
- Maintaining the electronic reporting system and forms to facilitate uniform reporting
- Assisting with investigations of cases and clusters representing possible SARS-CoV infection
- Collecting and reviewing reports of pneumonia in travelers and reports of clusters of pneumonia in healthcare workers

3. PLAN FOR SURVEILLANCE OF SARS CASES IN NH DURING THE PRESENCE OF GLOBAL SARS ACTIVITY

If the re-emergence of SARS is documented in the U.S. or abroad, the likelihood that a person with respiratory illness is infected with SARS-CoV increases significantly. Surveillance efforts will be enhanced and will incorporate available risk factor information, particularly regarding geographic transmission patterns. The scope of surveillance activities may depend on the extent of disease within the given community.

3.1. Activities for Healthcare Providers and Healthcare Facilities:

3.1.1. Basic activities. Basic surveillance activities will be initiated if there is no SARS activity within the community (i.e., southeast Canada or New England).

- Continuing case detection and reporting efforts as detailed above (in a setting of no known SARS activity worldwide) to identify potential SARS cases with no known epidemiologic link
- Considering screening all patients who present to clinics with a fever and/or with clinical findings of lower respiratory infection (i.e., cough, shortness of breath, difficulty breathing) for the following SARS risk factors:
 - Travel within 10 days of illness onset to a location with recent local transmission of SARS-CoV
 - Close contact within 10 days of illness onset with a person known or suspected to have SARS
- If a patient with fever and/or evidence of lower respiratory infection has one of the above SARS risk factors, then begin SARS isolation precautions, **notify the NH DHHS**, and initiate clinical assessment.

3.1.2. Enhanced Activities. Enhanced surveillance activities will be initiated if there are community cases of SARS. Enhanced surveillance activities will focus on increasing the sensitivity of case detection through the use of less stringent clinical criteria during screening of cases.

- If a local case of SARS is unlinked (that is, if the source of infection is unclear), then SARS should be considered in the differential diagnosis and management of **all** patients with fever

and/or evidence of a lower respiratory infection, regardless of whether or not the case has known risk factors for SARS.

3.2. Hospital-based Surveillance

3.2.1. In a healthcare facility with no SARS patients, surveillance should include:

- Continuing to implement case detection and reporting efforts as described for no known SARS activity worldwide
- Screening all patients who present to emergency rooms or hospital clinics with fever and/or symptoms of lower respiratory infection (i.e., cough, shortness of breath, difficulty breathing) for SARS risk factors
- Being alert for clusters of severe, febrile respiratory illness among healthcare workers. Any cluster of febrile respiratory illness with onsets during the same 10-day period should be reported.
- Reporting any potential SARS cases to the NH DHHS.

3.2.2. In a healthcare facility caring for SARS patients who acquired infection outside that facility, surveillance should include:

- Continuing all recommended surveillance plans outlined above
- Monitoring daily all staff caring for SARS patients for symptoms. If the healthcare worker develops fever and/or respiratory symptoms, then SARS isolation precautions should begin, clinical assessment should ensue, and the NH DHHS should be notified
- Screening all patients, visitors, and employees upon entry into the facility for fever, cough, and/or shortness of breath, especially if community transmission is occurring
- For those found to have symptoms, ask about SARS risk factors. For those with SARS risk factors, isolate and evaluate for SARS.

3.2.3. In a healthcare facility treating large numbers of SARS patients, or in a facility with nosocomial SARS cases and clearly identified sources of infection, surveillance should include:

- Continuing the surveillance plans outlined above
- Monitoring *all* healthcare workers daily for fever, cough, and/or shortness of breath. If any of these symptoms are present, then SARS isolation precautions should be instituted, chest X-ray obtained, and preliminary medical work-up begun
- Consider limiting or halting elective services and nonessential personnel
- Performing inpatient surveillance and monitoring daily for symptoms of new or worsening fever, cough, or shortness of breath. If any of these are found, then potential exposure to known SARS patients should be investigated. If a link is found, then the new symptomatic patient should be isolated and tested for respiratory infections, including SARS-CoV infection.

3.2.4. In a healthcare facility in which nosocomial SARS-CoV infection has occurred and at least some transmission is unlinked (i.e., the source of infection is unclear) surveillance should include:

- Continuing the surveillance plans outlined above
- Expanding inpatient surveillance to include testing for SARS-CoV in symptomatic individuals (new or worsening fever, cough, or shortness of breath) even if an epidemiologic link is not apparent
- Surveying for illness and absenteeism among healthcare staff

3.3. Activities for the NH DHHS Will Include:

- Reviewing hospital reports daily to: 1) assess SARS risks; 2) ensure that adequate testing is performed to rule out SARS-CoV; 3) assess clusters of respiratory illness; 4) identify and follow-up of contacts; and 5) monitor outbreak trends
- Disseminating information, and updated surveillance and patient screening guidelines to providers through the Health Alert Network
- The State Epidemiologist will convene the NH DHHS Outbreak Team and CDECC at the earliest opportunity.
- The Contact/Patient Investigation Team (C/PIT) members will work with the reporting physician(s) to confirm the diagnosis, and report the case to CDC.
- The C/PIT will work with the physician to obtain necessary clinical specimens. The PHL will coordinate “rule out” testing and/or shipment of specimens to the appropriate laboratory at CDC and dissemination of test results to appropriate parties.
- The State Epidemiologist, or his/her designee, will confirm infection control recommendations with the treating physician and hospital.
- The C/PIT Team Lead(s) will ensure patient management consistent with the CDC Interim SARS guidelines. All individuals who are identified as a suspect, probable or confirmed case of SARS will be managed consistent with NH RSA 141-C and CDC Interim SARS Isolation Guidelines. The NH Department of Safety will work cooperatively with the NH DHHS to assure appropriate enforcement of Orders of Quarantine, if necessary.
- The Commissioner of the Department of Health and Human Services will designate a facility in NH for quarantine of persons unable to comply with home quarantine.
- NH DHHS in cooperation with the NH Department of Transportation and NH Department of Safety, Bureau of Emergency Management will implement federal travel recommendations and determine whether additional travel alerts are needed for NH.
- The Director of the Bureau of Emergency Management will initiate the NH Emergency Operations Plan.

3.4. Activities for the CDC Will Include:

- Ensuring that guidance materials are available to implement effective surveillance and containment measures

- Monitoring the level of activity of SARS nationwide to:
 - Assess the effectiveness of efforts to diagnose and contain SARS-CoV infections
 - Provide timely feedback
 - Mobilize additional resources and assist with surge capacity
 - Report activity to WHO to assist with global surveillance and control
- Overseeing surveillance at ports of entry, including airports to aid in the identification of possible imported SARS-related illnesses
- Facilitating coordinated surveillance and related activities in settings that may not be under state or local jurisdiction (i.e., military bases)
- Providing guidance regarding possible laboratory-acquired infections

4. SURVEILLANCE ACTIVITIES FOR CONTACTS TO SARS CASES

Surveillance of contacts of SARS cases is essential to SARS control efforts. Through rapid identification, evaluation, and monitoring of exposed contacts of possible or known SARS cases, further transmission of disease may be prevented. Contacts can be quickly isolated or quarantined, as appropriate, to avoid further SARS-CoV transmission.

For SARS, the infectious period is thought to begin with the onset of clinical illness (fever and cough). The duration of the infectious period may be up to 10 days; hence, SARS cases should avoid contact with others for 10 days after symptoms (fever, cough) resolve. Contact tracing is the systematic identification of persons who may have been exposed to patients with SARS-CoV during the infectious period. The extent and timing of a contact investigation may depend on the level of suspicion, with immediate investigation warranted for newly identified confirmed or probable SARS cases.

4.1. Activities for healthcare providers and healthcare facilities will include:

- Systematically record the name of any healthcare worker who is a contact to a suspect, probable or confirmed case of SARS
- Provide such information, upon request to BCDC

4.2. Activities for the DHHS Will Include:

- Designating one person to coordinate activities related to the tracing, interviewing, evaluation, and monitoring of contacts for each SARS case.
- Train backup staff in contact investigation procedures. (I.e. using existing staff with experience in the practice of contact tracing, such as STD, HIV or immunizations programs). Current and backup staff will learn his/her basic responsibilities, as stated in appendix 1.
- The C/PIT Team Lead(s) will initiate contact investigation consistent with CDC guidelines, to identify, evaluate, and monitor contacts of SARS cases to identify previously unrecognized or secondary cases.
- All individuals deemed to have close contact with a known SARS case would be quarantined consistent with NH RSA 141-C and CDC Interim SARS Isolation Guidelines. The NH

Department of Safety will work cooperatively with the NH DHHS to assure appropriate enforcement of Orders of Quarantine, if necessary.

- Stratifying SARS exposure risk, considering the strength of evidence underlying the diagnosis of SARS in the index case, the duration and nature of the contact's exposure to the case, the case-patient's severity of illness at the time of contact, and host factors
- Contact-related activities may be limited to the highest priority group(s); in all situations, household and other close contacts of probable and confirmed SARS cases will be identified and monitored.
- The Commissioner of DHHS will designate a facility in NH for quarantine of persons unable to comply with home quarantine.
- Communicate with contacts to: 1) inform them of being potentially exposed to SARS-CoV; 2) evaluate their current health status, including underlying medical conditions and presence/absence of SARS symptoms (fever, cough); and 3) provide instructions regarding ongoing health monitoring, including directions for seeking medical care; the HCW will provide a pamphlet with instructions for the contacts who have been isolated or quarantined (appendix 2) and a basic kit of medical supplies and instructions (appendix 3)
- Monitoring these contacts daily for symptoms development using appendix 4
- Instructing contacts on voluntary or mandatory restrictions on their activities to prevent the spread of SARS
- Locating and interviewing each contact to confirm his/her exposure history, to assess for presence or absence of symptoms, and to identify additional contacts who may not have been listed by the case
- Planning for continued symptom monitoring until 10 days has passed since the last interaction with the suspected SARS case
- Facilitating appropriate medical evaluation if a contact becomes symptomatic
- Treating contacts that develop symptoms of fever and/or cough as suspected SARS cases
 - His/her contacts should then be identified
- BCDS will notify the CDC and relevant state health department if any contact is located out-of-state

4.3. Activities for the CDC Will Include:

- Notifying BCDS about NH contacts of out of the state cases.
- Facilitate the process of notifying other states of contacts to NH cases.

SECTION III. SARS CLINICAL EPIDEMIC GUIDELINES.

1. INTRODUCTION.

On October 16, 2003, the DHHS posted the NH SARS Surveillance and Clinical Response Guidelines, available at www.dhhs.state.nh.us. Attempts will be made to update these guidelines, but the below recommendations are based on the most current CDC guidance and are largely intended to delineate activities appropriate when SARS is and is not thought to be circulating in the world.

Among the public health tools available to respond to infectious respiratory disease outbreaks and interrupt disease transmission are vaccines, prophylactic and therapeutic medications, environmental decontamination, isolation of infectious patients, personal protective measures, and, more rarely, quarantine of persons believed to be exposed to an infectious agent. Because SARS is a newly emerging disease, the understanding of its pathogenesis is limited, and to date no specific pharmaceuticals have been identified as effective treatment or prophylaxis. In addition, there is currently no vaccine that can protect susceptible persons from infection with SARS-CoV. Therefore, the primary tools available to control and prevent disease transmission during a SARS outbreak are case identification and isolation, contact tracing and monitoring, infection control, and community containment measures, including quarantine.

- The vast majority of patients with SARS-CoV disease 1) have a clear history of exposure either to a SARS patient(s) or to a setting in which SARS-CoV transmission is occurring, and 2) develop pneumonia.
- Laboratory tests can be helpful but do not reliably detect infection early in the illness.
- Healthcare facilities should re-emphasize the importance of basic infection control measures for respiratory infections and consider adopting a "respiratory hygiene/cough etiquette" strategy to avert SARS and other infectious disease transmission.
- All patients admitted to the hospital with radiographically confirmed pneumonia should be:
 - Placed on droplet precautions
 - Screened for risk factors for possible exposure to SARS-CoV
 - Evaluated with a chest radiograph, pulse oximetry, complete blood count, and etiologic workup as indicated.
- If there is a high index of suspicion for SARS-CoV disease (by clinicians and health department), the patient should immediately be placed on SARS isolation precautions and all contacts of the ill patient should be identified, evaluated and monitored.

2. GUIDELINES FOR SARS DIAGNOSIS IN THE ABSENCE OF GLOBAL SARS ACTIVITY

The diagnosis of SARS-CoV disease should be considered only in patients who require hospitalization for radiographically confirmed pneumonia and who have an epidemiologic history that raises the suspicion of SARS-CoV disease. The suspicion for SARS-CoV disease is raised if, within 10 days of symptom onset, the patient:

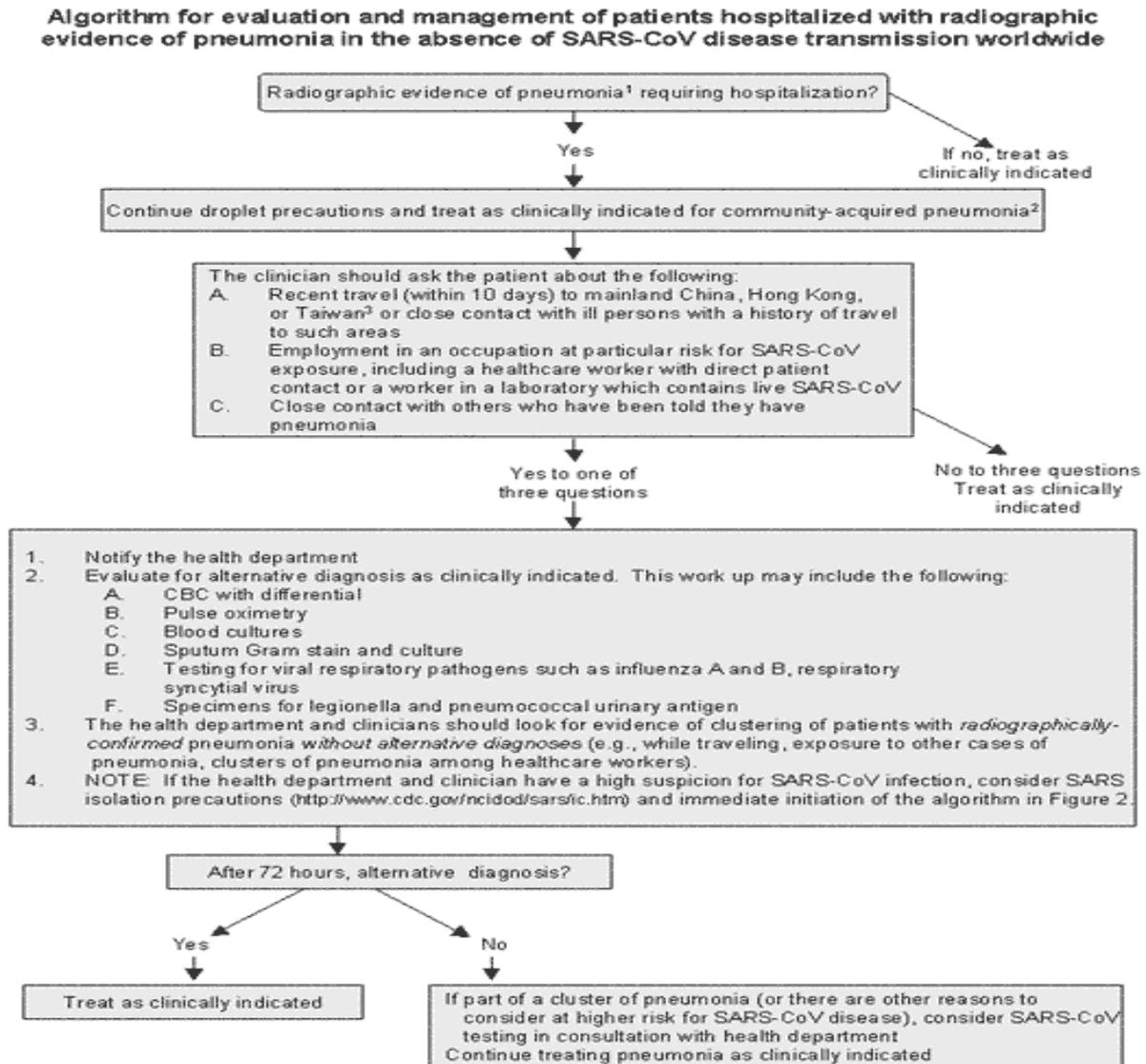
- Has a history of recent travel to mainland China, Hong Kong, or Taiwan or close contact with ill persons with a history of recent travel to such areas, or

- Is employed in an occupation at particular risk for SARS-CoV exposure, including a healthcare worker with direct patient contact or a worker in a laboratory that contains live SARS-CoV, or
- Is part of a cluster of cases of atypical pneumonia without an alternative diagnosis

Persons with such a clinical and exposure history should be evaluated according to the algorithm in Figure No. 1.

Additional information is available at: <http://www.cdc.gov/ncidod/sars/absenceofsars.htm>.

Figure No. 1. Algorithm for evaluation and management of patients hospitalized with radiographic evidence of pneumonia in the absence of SARS-CoV disease transmission worldwide.



<http://www.cdc.gov/ncidod/sars/clinicalguidanceframe1.htm>

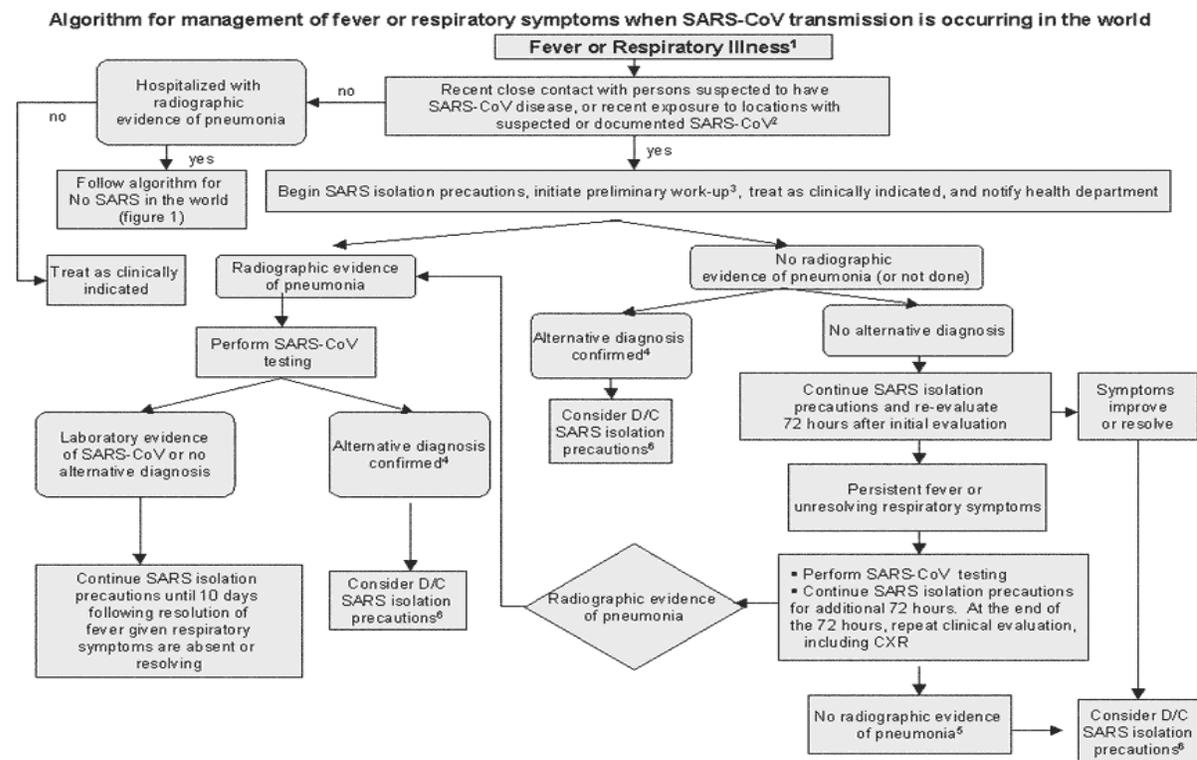
3. GUIDELINES FOR SARS DIAGNOSIS IN THE PRESENCE OF GLOBAL SARS ACTIVITY

The diagnosis of SARS Co-V disease should still be considered in patients who require hospitalization for pneumonia and who have the epidemiologic history described above. In addition, all patients with fever or respiratory symptoms should be questioned about whether within 10 days of symptom onset they have had:

- Close contact with someone suspected of having SARS-CoV disease, OR
- A history of foreign travel (or close contact with an ill person with a history of travel) to a location with documented or suspected SARS-CoV, OR
- Exposure to a domestic location with documented or suspected SARS-CoV (including a laboratory that contains live SARS-CoV), or close contact with an ill person with such an exposure history.

Persons with such an exposure history should be evaluated for SARS-CoV disease according to the algorithm in Figure No. 2.

FigureNo 2. Algorithm for management of respiratory symptoms when SARS Co-V transmission is occurring in the world.



<http://www.cdc.gov/ncidod/sars/clinicalguidanceframe2.htm>

4. GUIDELINES FOR SARS INFECTION CONTROL

If screening discloses that a patient is a suspect case of SARS, a **surgical (not N-95) mask** should be placed on the patient, and **contact, droplet, and airborne precautions** should be implemented immediately. Hand washing, gown, and glove procedures are those routinely

prescribed for contact, airborne, and droplet precautions (www.cdc.gov/ncidod/hip/isolat.htm). The SARS suspect should be moved to an assessment area (if not already) to separate potential SARS patients from staff and other patients seeking care at the healthcare facility. This is preferably an area away from other patient areas, with negative pressure in relation to surrounding areas. In some settings during the influenza season (i.e., November–March), consideration might be given to establishing a separate and temporary “cough clinic,” with HEPA filtration, because the volume of patients with fever and cough requiring evaluation may be high. This cough clinic may utilize appropriate existing structures, or may be a temporary structure, such as a mobile trailer adjacent to the healthcare facility, with ventilation, restroom facilities, water supply, etc. The DHHS has purchased portable isolation units, which have been deployed to hospitals to increase statewide isolation capacity and may be used to equip a cough clinic.

Triage staff and HCWs caring for SARS suspects or cases should wear an N95 respirator. If SARS is ruled out, then the respirator may be reused. The respirators can be re-used repeatedly by the same HCW if they are properly handled, stored, and not contaminated. Respirators should be stored in a clean, dry location, and discarded if crushed, wet, or contaminated by patient secretions. If SARS has not been ruled out, then do not reuse the respirator after removal. If an N95 respirator is not immediately available and patient contact is unavoidable, a surgical mask should be worn because it may provide some protection.

Triage staff and HCWs caring for SARS suspects or cases should also wear eye protection such as goggles or full face shields (prescription glasses are inadequate) when:

- The patient is not wearing a mask
- During any cough-producing and aerosol-generating procedures
- When there is the potential for splattering or spraying blood or other body substances.

Goggles and face shields may be reused, if cleaned in a manner that will not contaminate the HCW. They should be cleaned between uses according to the manufacturer’s recommendations using low-level disinfection at a minimum.

According to the Canadian experience, there is no evidence to support the routine need for enhanced respiratory personal protective equipment such as the powered air-purified respirator (PAPR) system (www.hc-sc.gc.ca/english/protection/warnings/sars/index.html). However, during certain high-risk procedures such as a difficult endotracheal intubation, the PAPR system should be considered in balance to the potential that the increased complexity involved in the removal, disposal, and decontamination of this equipment might increase the risk of HCW self-contamination.

Triage staff should immediately inform the infection control department that a patient is under investigation for SARS, and consultation with an infectious diseases specialist is recommended. Any person accompanying the SARS suspect should be given a surgical mask, but when the decision is made that the patient will be hospitalized, the visitor (and subsequent visitors) should be given an N95 respirator and instructed regarding fit, or not allowed to accompany the patient.

The NH DHHS recommends using disposable equipment whenever possible for the care of SARS suspects/cases. Non-disposable equipment that is visibly soiled should be cleaned promptly with soap and water, detergents or enzymatic agents. Equipment should be cleaned and disinfected prior to being used with other patients.

Routine infection control practices should be applied during postmortem procedures.

In addition, the experience in Toronto and elsewhere suggests that since much transmission occurred during patient movement and transfer, DHHS is recommending that:

- Patients with SARS not be transferred to other healthcare facilities unless absolutely medically necessary.
- It is not recommended that patients with SARS be transferred solely for the purpose of accommodation in a negative pressure room.
- If it is deemed necessary to transfer the patient, the transport route must be well planned to minimize exposure to others in transit; all HCWs involved in the transfer should wear an N95 respirator, eye protection, gown, and gloves; and the patient should wear a surgical mask.

Other recommendations to avoid transmission of SARS (such as engineering and hospital access controls) are included in the draft online document, and at the CDC website.

5. GUIDELINES FOR RESPIRATORY HYGIENE AND COUGH ETIQUETTE

Regardless of when and whether SARS recurs, institution of public health measures for universal respiratory hygiene and cough etiquette will avert SARS and other infectious disease transmission. Key features of this campaign include:

- Provide surgical masks to all patients with symptoms of a respiratory illness. Provide instructions on the proper use and disposal of masks
- For patients who cannot wear a surgical mask, provide tissues and instructions on when to use them (i.e., when coughing, sneezing, or controlling nasal secretions), how and where to dispose of them, and the importance of hand hygiene after handling this material
- Provide hand hygiene materials in waiting room areas, and encourage patients with respiratory symptoms to perform hand hygiene.
- Designate an area in waiting rooms where patients with respiratory symptoms can be segregated (ideally by at least 3 feet) from other patients who do not have respiratory symptoms
- Place patients with respiratory symptoms in a private room or cubicle as soon as possible for further evaluation
- Implement use of surgical or procedure masks by healthcare personnel during the evaluation of patients with respiratory symptoms
- Consider the installation of Plexiglas barriers at the point of triage or registration to protect healthcare personnel from contact with respiratory droplets
- If no barriers are present, instruct registration and triage staff to remain at least 3 feet from unmasked patients and to consider wearing surgical masks during respiratory infection season
- Continue to use droplet precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond standard precautions

Posters to promote this among patients are also posted at the DHHS website.

SECTION IV. COMMUNITY-BASED CONTAINMENT MEASURES

1. INTRODUCTION

Isolating SARS cases separates them from healthy persons and restricts their movement, thereby preventing transmission to others. It also allows for the focused delivery of specialized healthcare to ill persons. Quarantining persons who may have been exposed to SARS but who are not ill is intended to identify those at greatest risk for developing SARS and to prevent transmission to others, in the event that they go on to develop SARS. Quarantine allows for the monitoring of symptoms and the institution of appropriate isolation procedures as soon as symptoms are detected. In this way, quarantine reduces both the period of risk of transmission and the number of persons potentially exposed.

Isolation and quarantine are optimally performed on a voluntary basis, although different levels of government (local, state, federal) have the basic legal authority to compel mandatory isolation and quarantine of persons and communities to protect the public's health. At the federal level, the U.S. Secretary of Health and Human Services has the statutory responsibility for preventing the introduction, transmission, and spread of communicable diseases from foreign countries into the United States. Within the State of NH, authority to mandate involuntary quarantine and isolation is granted to the Commissioner of DHHS (RSA 141-C).

During the 2003 SARS outbreak, SARS patients were isolated until no longer infectious (i.e., 10 days after the resolution of fever). Cases who were severely ill were isolated in hospitals, while those who were mildly ill were isolated and cared for at home. Homebound SARS cases were instructed to avoid interaction with others and to remain at home until 10 days after fever resolved (provided that respiratory symptoms were absent or improved).

In the United States, where there was little or no community transmission of SARS-CoV, quarantine was not enforced for asymptomatic, exposed individuals. Rather, potential contacts were advised to monitor themselves for symptoms—fever and cough. If symptoms developed, then contacts were advised to remain homebound, except to undergo medical evaluation. In other countries that were more profoundly affected by the SARS epidemic, individual and population-based quarantine of contacts was recommended and enforced. In addition, many countries adopted community-based strategies to control the spread of SARS-CoV. These strategies may have included: requiring fever screening before entry into schools, work sites and public buildings, requiring face masks in certain settings (i.e., on public transportation systems), establishing fever hotlines and referral services for concerned citizens, and implementing widespread environmental disinfection strategies.

The effectiveness of isolation and quarantine and of specific community-level interventions in containing the SARS epidemic globally is not yet fully appreciated. However, some generalizations can be made. Foremost, strategies associated with the timely and successful control of local outbreaks were characterized by rapid responses and early, aggressive restriction of movement. In addition a variety of quarantine strategies may be utilized, including:

- Disseminate information (in appropriate languages) on restrictions in the quarantine zone (i.e., print/broadcast media; posters, leaflets, flyers, door-to-door)

- Disseminate information on quarantine rationale, procedures, and restrictions to neighboring zones/communities
- Restriction of mass transit as necessary
- Restriction of access routes
- Minimize movements into quarantined areas by use of monitoring checkpoints, curfews, travel permits, health certificates
- Establish cooperative arrangement with neighboring zones/communities to prevent movement into or out of quarantine zone
- Clearly define who may enter quarantine zone
- Enforcement may require fines, penalties, barricades, and visible signs of boundary enforcement
- Discontinue isolation/quarantine measures, maintenance of designated facilities, and enforcement measures at the conclusion of three incubation periods after the last reported case

Isolation and quarantine raise legal, social, financial, and logistical challenges (i.e., provision of basic needs, prevention of stigma) that should be anticipated and addressed and its effective implementation requires the involvement of partners (i.e., law enforcement). Financial, social, and psychological consequences of quarantine measures may be substantial and will need to be dealt with in order to maintain the public's trust and be successful in its implementing. Clear messages about the criteria, justification, and duration of isolation and quarantine and the ways in which persons will be supported during this period will help to generate public trust.

2. ISOLATION OF SARS PATIENTS

Preventing transmission of disease from SARS cases to well susceptible individuals is critical. Accomplishing this requires limiting interactions between SARS cases and others. SARS cases should be admitted to a healthcare facility/hospital for the purpose of isolation only if their clinical condition warrants, or if isolation in the home or alternate facility cannot be achieved effectively.

It may be preferable to affected individuals to be monitored in the setting of their own homes, if certain requirements are met. If, for example, there is an immunosuppressed person also inhabiting the home, then monitoring in an alternate, non-hospital facility may be necessary. An example of a feasible alternate lodging facility may include a motel room, with a separate entrance to the outside/outdoors, a private bathroom, perhaps a small refrigerator and/or microwave, and communication capabilities to the outside (by telephone).

The following measures are recommendations for isolating SARS cases in residential settings (homes) and alternate facilities (motels):

2.1. Basic activities

- Before a SARS case is confined to the home; the residence should be assessed in order to be certain that it has the features necessary for the provision of proper care and proper infection control measures. The primary caregiver, the case himself or herself, or a public health worker may conduct this assessment.

- Isolation facilities should meet the following minimum requirements:
 - Primary caregiver (family member) available, if necessary, to assist the patient with basic needs
 - Functioning telephone, electricity, and drinkable water
 - Separate bedroom that will be occupied only by the SARS case and with a door that can be kept closed at all times
 - Separate bathroom that is designated for use only by the SARS case
- During the period of isolation, household members of SARS cases who are not providing care to the patient-case should be relocated, if possible. Alternatively, the SARS patient-case could be relocated to another site within the community (a motel room). It should be noted that obtaining alternate lodging may be hampered by stigma and fear.
- If relocation is not possible, then interactions between the SARS case and the household members should be minimized. Persons at risk of serious SARS complications—those with underlying medical diseases such as underlying heart or lung disease, persons with diabetes mellitus, and the elderly—should not interact with the case-patient.
- All persons in contact with the SARS case should be provided with adequate personal protective equipment (surgical masks, gloves, eye and face shields, gowns) and should be educated regarding appropriate infection control practices, including hand hygiene and environmental decontamination. See <http://www.cdc.gov/handhygiene/> for more details.
- SARS patients should wear a surgical mask during close contact (less than 3 feet) with uninfected persons to prevent the spread of infectious droplets. If a SARS patient is unable to wear a surgical mask, then household members should don a surgical mask when interacting with the patient. These masks should not be re-used when worn in the close presence of a known SARS case and should be properly disposed of.
- Household waste materials that are contaminated with body fluids of SARS patients, including facial tissues and surgical masks, may be discarded as normal waste materials (potentially contaminated materials but not “bio-hazardous” materials).
- The SARS case and his/her household members and other close contacts should monitor for fever. Temperature should be taken and recorded twice a day and reported to the NH DHHS at least daily. Onset of respiratory symptoms (cough, shortness of breath) should be monitored and documented as well, with onset warranting prompt medical evaluation.

2.2. Enhanced activities: Isolation of SARS patients in community facilities

If a surge of SARS cases overwhelms existing healthcare capacity, or if home isolation is not feasible for certain individual patients, then alternate facilities in the community may need to be used for isolating SARS cases and/or their asymptomatic contacts. SARS preparedness planning must address the availability and use of existing structures, the management of patients lodged in these facilities, and resources for securing supplies to isolated and quarantined individuals.

- Consider the use of both existing structures such as: nursing homes, apartments, motels, and schools; and temporary structures, such as trailers, barracks, tents, or “bubble systems”.
- Consider the following features in assessing appropriateness of sites:
 - Separate rooms for patients

- Independent ventilation for each room
- Access control to each room
- Availability of potable water, bathroom, and shower facilities
- Capacity for providing basic needs to patients
- Rooms and corridors amenable to disinfection
- Facilities for collecting and disposing of waste materials
- Facilities for collecting and laundering items
- Ease of access for delivery of supplies
- Legal/property considerations
- Ability to support appropriate infection control measures
- Availability of food services and supplies
- Ability to provide an environment that supports the social and psychological well-being of patients
- Ability to support appropriate medical care
- Access to communication systems that allow for dependable communication within and outside the facility (telephones)

3. MANAGEMENT OF CONTACTS TO SARS CASES

Objective: To monitor and evaluate contacts of SARS cases to ensure early identification of illness and rapid institution of infection control precautions to prevent further spread of SARS-CoV.

The management of persons who may have been exposed to SARS will follow CDC guidelines for possible exposures. Updated guidelines can be found on the CDC website at <http://www.cdc.gov/ncidod/sars/>. This website should be consulted frequently for modifications. Currently, these guidelines for persons with possible exposures call for the following:

- For persons with possible exposures who do not develop fever greater than 100.4 degrees or respiratory symptoms within 10 days of exposure—no isolation precautions/activity restrictions are needed.
- For persons with possible exposures and who develop fever greater than 100.4 degrees AND respiratory symptoms within 10 days of exposure—the person may be considered a suspect SARS case and should follow isolation precautions until 10 days after resolution (provided that respiratory symptoms are absent or improved)
- For persons with possible exposures and who develop fever greater than 100.4 degrees OR respiratory symptoms within 10 days of exposure—use isolation precautions for 72 hours.
 - a. If, after 72 hours, symptoms improve, then discontinue isolation precautions
 - b. If, after 72 hours, symptoms progress, then treat as a suspect SARS case and use isolation precautions until 10 days after resolution of fever, provided respiratory symptoms are improving or absent

If, after 72 hours, fever remains OR respiratory symptoms remain unresolved, then continue isolation precautions for another 72 hours. Then reassess, as above.

3.1. Basic activities

In a limited SARS outbreak, close contacts of SARS cases may be managed through either active or passive monitoring, see Section II, No. 4, and without any restriction of movement *unless* they develop symptoms of disease. Consideration should be given to confining and/or restricting the movement of contacts with high-risk exposures (i.e., healthcare workers involved in aerosol-generating procedures on a SARS patient) even in the absence of symptoms. Contacts of SARS cases will be in daily communication with the NH DHHS and will be advised to:

- Remain vigilant for fever or respiratory symptoms for 10 days after exposure. Temperature readings should be taken and recorded twice a day, and reported to the NH DHHS daily. See Appendix 4 (Symptom Surveillance Log).
- Seek healthcare evaluation immediately if symptoms of cough, fever, or respiratory difficulty develop.
- Inform his/her healthcare provider in advance of presenting at the clinic or hospital they have been exposed to SARS and are now symptomatic.

3.2. Enhanced activities

In the event of a large SARS outbreak or high-risk exposure (i.e., exposure of healthcare personnel during intubation of a SARS patient) quarantine of asymptomatic contacts may be considered as a means of interrupting disease transmission.

Quarantine represents a range of possible interventions that could be applied at the level of the individual, small group, or community. Quarantine may be used for:

- Individuals with close contact (i.e., household contact) to a known case of SARS
- Small groups with close contact (i.e., co-workers, healthcare workers with unprotected exposure) to a SARS case
- Larger groups with an unspecified extent of exposures (i.e., social groups, persons in congregate settings, passengers on airplanes) to a SARS case
- Communities in which the extent of SARS exposure for individuals is unknown but interventions are needed to control potential population exposures by increasing social distance and limiting interactions and movement within a community

Types of quarantine include:

- Home quarantine — Quarantine at home is most suitable for contacts that have a home environment in which their basic needs can be met and where the protection of unexposed household members is feasible.
- Quarantine in designated facilities — Contacts who do not have an appropriate home environment for quarantine or contacts who do not wish to be quarantined at home may be quarantined in specific facilities (motels, nursing homes, apartments, etc.) designated for this purpose.
- Work quarantine — This applies to healthcare workers or other essential personnel who have been exposed to SARS cases and who may need to continue working (with appropriate infection control precautions) but who are quarantined either at home or in a designated facility during off-duty hours.

The minimum criteria that must be met to enable the optimal implementation of home quarantine include:

- Access to educational materials about SARS and quarantine
- Ability to monitor one's own symptoms (or have them monitored regularly by a parent, guardian or caregiver)
- Basic utilities (water, electricity, functional plumbing/septic system, garbage collection, and heating and air conditioning as appropriate)
- Basic supplies (clothing, food, hand hygiene supplies, laundry services, etc.)
- Mechanisms for communication, including telephone (for monitoring by health staff, reporting of symptoms, and accessing support services) and a computer if possible
- Access to food and food preparation
- Access to healthcare providers, healthcare centers, and ambulance personnel
- Access to supplies such as thermometers, fever logs, phone numbers for reporting symptoms or accessing services, emergency numbers, etc. (these can be supplied by health authorities if necessary)
- Availability of mental health/psychological support services

4. MANAGEMENT OF HOUSEHOLD MEMBERS OF CONTACTS IN HOME QUARANTINE

No specific precautions are needed for household members of contacts who are in home quarantine, as long as the person under quarantine remains asymptomatic. Household members of quarantined individuals can go to school, work, etc., without restrictions. If the contact develops symptoms, then s/he should immediately notify medical/public health authorities to obtain medical evaluation, and at that point, household members should remain at home. The NH DHHS should be contacted for further instructions.

5. COMMUNITY-BASED CONTROL MEASURES

Community-based control measures are designed to reduce the risk of SARS-CoV transmission by limiting the potential for social interactions (i.e., canceling public events, implementing community "snow days", etc.) and by implementing broad measures for the public to prevent inadvertent exposures (i.e., fever monitoring in public places; use of masks). The effectiveness of these mass measures has not been completely evaluated. The decision to institute community containment measures, and the nature and scope of these measures, will be made based upon the extent of the outbreak and the availability of resources.

Important factors that will need to be considered in determining a threshold for community action include: numbers of cases and close contacts, characteristics of local disease transmission (i.e., speed of spread, number of generations), types of exposure categories (travel-related, close contact, healthcare worker, unlinked transmission, etc.), morbidity and mortality rates, extent of community influx and efflux, and the availability of local healthcare and public health resources.

The NH DHHS, through the EOC structure and with guidance from the CDC, may carry out both basic and enhanced activities to curb the spread of illness within NH, as follows:

5.1 Basic activities

- DHHS will provide community information and education about SARS, its spread, and how to prevent transmission
- DHHS will promote practices of “respiratory hygiene” and hand washing, as a means for the general public to protect itself

5.2 Enhanced activities may include such activities as:

- Institute “snow days” or “shelter in place”
- Suspend public gatherings
- Monitor fever in public places
- Close public buildings and spaces
- Cancel public events
- Closing of non-essential government functions (public library, etc.)
- Request voluntary or mandate closing of businesses and institutions (i.e., schools)

There may be circumstances of an advanced epidemic for which other more extreme measures may be enacted, such as:

- Restrict travel (air, rail, water, motor, pedestrian)
- Stop mass transit services
- Restrict geographic re-locations

A checklist to assist community preparedness for activities relevant for community containment is included in appendix 5.

6. COMMUNICATIONS

6.1. Introduction

Open flow of information between State agencies and local health departments and the dissemination of accurate and timely information to NH citizens will be essential to help control the spread of SARS illness and the spread of panic in the event of a SARS epidemic. NH DHHS emergency communications function includes utilization of the following: personnel currently employed by State and local health departments; federal, State and local resources and equipment; and volunteers necessary to coordinate and distribute information during SARS epidemic phases.

6.2. Communications In the Absence of Global SARS Cases

As part of its day-to-day activities, DHHS has primary responsibility for keeping the public informed of disease outbreaks and helping to control and prevent the spread of disease. The Director of the Office of Community and Public Health will ensure that the proper personnel give out the appropriate information. NH BEM will assist in establishing this communications structure as needed. Key communicators will be established to help ensure that accurate and consistent information is given to the press.

6.3. Communications During the Presence of Global SARS Activity

- The Media Response Team members will staff a regular media availability time, if necessary. In addition, the State Epidemiologist or another appointed official will hold a daily press conference to effectively communicate with the media and the public. Daily information may also be available to the press through web-based sources.
- The Director of Public Health will alert the Commissioner of DHHS, and as necessary, the Director of the BEM, the Governor's Office and other appropriate State agencies, government officials, and community partners as required.
- The Surveillance Team Lead will disseminate, through the Health Alert Network, additional SARS illness surveillance recommendations to all NH hospitals, healthcare providers and appropriate sub-specialist (i.e., dermatologists, infectious disease specialists) as necessary.
- The Contact/Patient Investigation Lead(s) will disseminate, through the Health Alert Network, updated diagnostic, isolation and treatment recommendations to all NH hospitals, State healthcare providers and emergency management officials.
- The Contact/Patient Investigation Lead(s) will disseminate, through the Health Alert Network, updates on the status of the reported case to all NH hospitals and State healthcare providers.
- The Director of the Public Health Laboratories will disseminate, through the Health Alert Network, updates on clinical laboratory specimen collection and handling to all NH clinical laboratories.

SECTION V. STATE OF NH ACTION LEVEL AND RESPONSE

1. **Action Level 0.** No reports of nosocomial or community based cases anywhere in the world. Planned activities are as follows:
 - 1.1. DHHS Surveillance Team members will conduct basic syndromic surveillance for SARS illness in NH hospitals, as described in Section II
 - 1.2. All Team members will conduct education and training sessions for appropriate healthcare providers and emergency response officials including Hazmat, police, fire, EMS, and hospital officials.
 - 1.3. DHHS will provide information to hospitals regarding appropriate screening triage procedures, infection control and notification procedures for persons with suspect SARS illness.
 - 1.4. DHHS in cooperation with the NH Department of Transportation and NH Department of Safety, BEM, will develop or implement federal travel recommendations when appropriate.

2. **Action Level 1.** Cases in the world, but not in the region (the region is defined as NH or a community which may reasonably be expected to impact NH, such as eastern Vermont, western Maine, or northern Massachusetts). Planned activities are as follows:
 - 2.1. All activities under Alert Level 0 will be instituted.
 - 2.2. The State Epidemiologist will convene the NH DHHS Outbreak Team and CDECC at the earliest opportunity.
 - 2.3. The Contact/Patient Investigation Team (C/PIT) members will work with the reporting physician(s) to confirm the diagnosis and classify patients reported in NH, according to the current CDC Case Definitions for SARS and Response Guidelines. The Contact/Patient Investigation Team can be initiated by calling 603-271-4496 during business hours, or 603-271-5300 after hours.
 - 2.4. The C/PIT will work with the health care provider to obtain necessary clinical specimens, when appropriate. The PHL will coordinate “rule out” testing and/or shipment of specimens to the appropriate laboratory at CDC and dissemination of test results to appropriate parties. The Public Health Laboratories can be reached by calling 603-271-4660 during business hours, or 603-271-5300 after hours.
 - 2.5. The State Epidemiologist, or his/her designee, will confirm infection control recommendations with the treating physician and hospital.
 - 2.6. The Media Response Team members will staff a regular media availability time, if necessary.
 - 2.7. The Director of Public Health will alert the Commissioner of the Department of Health and Human Services, and as necessary, the Director of the Office of Emergency Management, the Governor’s Office and other appropriate State agency, government officials, and community partners as required.

- 2.8. As appropriate, the State Epidemiologist will consult with CDC officials to obtain technical assistance in case classification and patient investigation.
 - 2.9. The Surveillance Team will provide an alert to all syndromic surveillance team members and increase syndromic surveillance at all NH hospital emergency departments.
 - 2.10. The Surveillance Team Lead will disseminate, through the Health Alert Network, additional SARS illness surveillance recommendations to all NH Hospitals, healthcare providers and appropriate sub-specialist (i.e., dermatologists, infectious disease specialists) as necessary.
 - 2.11. The Contact/Patient Investigation Lead(s) will disseminate, through the Health Alert Network, updated diagnostic, isolation and treatment recommendations to all NH Hospitals, State healthcare providers and emergency management officials.
 - 2.12. The Contact/Patient Investigation Lead(s) will disseminate, through the Health Alert Network, updates on the status of the reported case to all NH Hospitals and State healthcare providers.
 - 2.13. The Director of the Public Health Laboratories will disseminate, through the Health Alert Network, updates on clinical laboratory specimen collection and handling to all NH clinical laboratories.
 - 2.14. NH DHHS in cooperation with the NH Department of Transportation and NH Department of Safety, Bureau of Emergency Management will implement federal travel recommendations.
3. **Action Level 2.** Cases in the region with an identified pattern of transmission. Planned activities are as follows:
- 3.1. All activities in Alert Level 1 will be instituted.
 - 3.2. The State Epidemiologist, or his/her designee, will discuss the epidemiological situation with the CDC. CDC Emergency Response can be reached 24 hours per day, 7 days per week at 770-488-7100.
 - 3.3. The State Epidemiologist with the Director of the Office of Community and Public Health will notify the Commissioner of the Department of Health and Human Services, the Director of the Bureau of Emergency Management, the Governor's Office, and other appropriate State agency and government officials as required.
 - 3.4. The Surveillance team lead(s) will initiate enhanced surveillance as described in Section II.
 - 3.5. The C/PIT Team Lead(s) will initiate patient management consistent with the CDC Interim SARS guidelines. All individuals who are identified as a suspect, probable or confirmed case of SARS will be managed consistent with NH RSA 141-C and CDC Interim SARS Isolation Guidelines. The NH Department of Safety will work cooperatively with the NH DHHS to assure appropriate enforcement of Orders of Quarantine, if necessary.
 - 3.6. The C/PIT Team Lead(s) will initiate contact investigation consistent with the CDC Interim SARS Guidelines. All individuals deemed to have close contact with a known SARS case will be quarantined consistent with NH RSA 141-C and CDC Interim SARS Isolation Guidelines. The NH Department of Safety will work cooperatively with the NH DHHS to assure appropriate enforcement of Orders of Quarantine, if necessary.

- 3.7. NH DHHS in cooperation with the NH Department of Transportation and NH Department of Safety, Bureau of Emergency Management will implement federal travel recommendations.
 - 3.8. The Commissioner of the Department of Health and Human Services will designate a facility in NH for quarantine of persons unable to comply with home quarantine.
4. **Action Level 3.** Cases in the region without an identified pattern of transmissions. Planned activities are as follows:
- 4.1. All activities in Alert Level 2 will be initiated.
 - 4.2. The Director of the Bureau of Emergency Management will initiate the NH Emergency Operations Plan.
 - 4.3. The Commissioner of the DHHS will designate a facility in NH for the isolation of persons unable to comply with hospital or home isolation.
 - 4.4. The NH Department of Safety, BEM, will implement federal travel recommendations and determine whether additional travel alerts are needed for NH.

Appendix 1

Responsibilities of the Public Health Worker for Management of SARS Contacts

- ❑ Provide oral and written instruction regarding the duration of the incubation period
- ❑ Teach the contact how to use the thermometer
- ❑ Teach the contact how to maintain daily dialogue with a designated public health worker (this could include telephone conversation or home visits by a health worker)
- ❑ Ensure that the contact is well prior to entering the house without PPE
- ❑ Inform the contact not to travel to a clinic or hospital without talking first to the health worker, to avoid further disease transmission in the community
- ❑ Provide contacts with an emergency 24-hour telephone number that can be called in the event of fever development
- ❑ Facilitate transportation of a febrile contact to a hospital or healthcare facility that is equipped with triage staff and can manage possible SARS cases
- ❑ Supply contacts with PPE to use in the home
- ❑ When the incubation period is over, inform the contact about re-entering the community and returning to work or school

Appendix 2

Example of Instructions for an Asymptomatic Close Contact of a Known, Probable, or Suspect Case of SARS

Someone in this category who remains without fever should be instructed to:

- ❑ Maintain home-based personal quarantine during the incubation period (10 days after exposure)
- ❑ Remain at home from work or school or other activities
- ❑ Not leave the house for the period of incubation
- ❑ Not answer the door (if other family members are present to fulfill this task)
- ❑ Not invite visitors to the house unnecessarily
- ❑ Not share eating utensils or dishes
- ❑ Minimize contact with other household members, but if close contact cannot be avoided, wear a surgical mask
- ❑ Sleep in a separate room away from the non-exposed family members
- ❑ Take temperature twice daily (morning and evening) at a minimum, and whenever “fever” is perceived. Record these readings and report them daily to the public health workers
- ❑ Monitor oneself for early symptoms of SARS: muscle aches and pains, headache, dizziness, loss of appetite, fatigue, confusion, diarrhea, cough, shortness of breath, and sore throat
- ❑ Cover one’s face and mouth or wear a mask if coughing or sneezing (practice respiratory etiquette)
- ❑ Maintain daily contact with the BCDC to report temperatures and presence or absence of SARS symptoms

Appendix 3

Kit Contents for SARS Cases and Contacts

- ❑ An oral thermometer
- ❑ A temperature and symptom log
- ❑ Supply of surgical masks
- ❑ Box of non-latex gloves
- ❑ Supply of disposable paper gowns
- ❑ Supply of hospital-grade environmental disinfectant
- ❑ Bottle of hand sanitizer
- ❑ Supply of face shields
- ❑ Instructions on when to use masks, gloves, gowns, face shields (PPE)
- ❑ Details of the 24-hour SARS emergency number to call if fever or respiratory symptoms develop
- ❑ A written copy of advice about home-based quarantine and/or isolation
- ❑ Written details regarding SARS—incubation period, symptoms, infection control strategies
- ❑ To whom at the DHHS the contact or case should report daily at minimum

Appendix 5

Preparedness Checklist for Community Containment

General

- Establish an incident command structure that can be used for SARS response
- Establish a legal preparedness plan
- Establish relationships with essential partners, such as law enforcement, first responders, healthcare facilities, and the legal community.
- Plan for monitoring and assessing factors that determine types and levels of response, including the epidemiologic profile of the outbreak, available local resources, and level of public acceptance and participation
- Develop message strategies for the public, government decision makers, healthcare and emergency response providers, and the law enforcement community.

Management of Cases and Contacts (including Quarantine)

- Develop protocols, tools, and databases for
 - Case surveillance
 - Clinical evaluation and management
 - Contact tracing, monitoring, and management
 - Reporting criteria
- Develop standards and tools for home and non-hospital isolation and quarantine
- Establish supplies for non-hospital management of cases and contacts
- Establish a telecommunications plan for “hotlines” or other services for
 - Case and contact monitoring and response
 - Fever triage
 - Public information
 - Provider information
- Plan to ensure provision of essential services and supplies to those in isolation and quarantine, including:
 - Food and water
 - Shelter
 - Medicines and medical consultations
 - Mental health and psychological support services
 - Other supportive services, i.e. day care, etc.
 - Transportation to medical treatment, if required
- Plan to address issues of compensation, job security, and prevention of stigmatization

Non-Hospital-Based Isolation of Cases

- Identify appropriate community-based facilities for isolation of cases without substantial healthcare requirements
- Develop policies related to use of these facilities
- Identify facilities for persons for whom home isolation is indicated but who do not have an appropriate home setting, such as travelers and homeless populations.
- Ensure that required procedures for assessment of potential isolation or quarantine sites are available and up to date.

Community Containment Measures

- Ensure that legal authorities and procedures are in place to implement the various levels of movement restrictions as necessary
- Identify key partners and personnel for the implementation of movement restrictions, including quarantine, and provision of essential services and supplies:
 - Law enforcement
 - First responders
 - Other government service workers
 - Utilities
 - Transportation Industry
 - Local businesses
 - Schools and school boards
- Develop training programs and drills
- Ensure fit-testing and training in PPE for all identified responders and providers as necessary
- Develop plans for mobilization and deployment of public health and other community service personnel