



STATE OF NEW YORK DEPARTMENT OF HEALTH

Corning Tower The Governor Nelson A. Rockefeller Empire State Plaza Albany, New York 12237

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

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Dear Doctor:

The New York State Department of Health (NYSDOH) would like to provide you with an update on two rapidly evolving medical issues, Severe Acute Respiratory Syndrome (SARS) and adverse cardiac events following smallpox vaccination. The information below is the most current as of April 10, 2003.

SEVERE ACUTE RESPIRATORY SYNDROME (SARS)

Since November 1, 2002, there have been a total of 2,781 probable cases reported worldwide, with the majority of cases (2,288 cases) from China and Hong Kong. Since SARS is currently a diagnosis of exclusion, the status of a reported case may change over time. In the United States, there have been 154 suspect cases of SARS with 22 cases in New York State. To date, all SARS cases in New York State have been related to travel to affected areas. The Centers for Disease Control and Prevention (CDC) has defined the affected areas as mainland China, including Hong Kong; Hanoi, Viet Nam; and Singapore.

Clinical Description

SARS has been diagnosed primarily in previously healthy adults aged 25-70 years. Few cases have been reported in children aged ≤ 15 years. The typical incubation period for SARS is 2 – 7 days with isolated reports suggesting an incubation period as long as 10 days. The illness begins generally with a prodrome of fever $>100.4^{\circ}\text{F}$ ($>38.0^{\circ}\text{C}$). Fever is often high, and may be accompanied by chills, rigors and other symptoms, including headache, malaise, and myalgias. At the onset of illness, some persons have mild respiratory symptoms. Typically, rash and neurologic or gastrointestinal findings are absent; however, some patients have reported diarrhea during the febrile prodrome.

After 3-7 days, a lower respiratory phase begins with the onset of a dry, nonproductive cough or dyspnea, which may be accompanied by or progress to hypoxemia. Ten to twenty percent of cases have required intubation and mechanical ventilation. The case-fatality rate among persons meeting the current World Health Organization (WHO) case definition is approximately 3%.

Chest radiograph may be normal throughout the febrile prodrome and course of illness. However, in a substantial proportion of patients, the respiratory phase is characterized by early focal infiltrates progressing to more generalized, patchy, interstitial infiltrates. Some chest radiographs of patients in the late stages of SARS also have shown areas of consolidation.

Early in the course of disease, the absolute lymphocyte count is often decreased with overall white blood cell counts normal or decreased. At the peak of the respiratory illness, approximately 50% of patients have leucopenia and thrombocytopenia or low-normal platelet counts (50,000—150,000/ μ L). Early in the respiratory phase, elevated creatine phosphokinase levels (as high as 3,000 IU/L) and hepatic transaminases (two to six times the upper limits of normal) have been noted. In the majority of patients, renal function has remained normal.

The severity of illness is highly variable, ranging from mild illness to death. Some close contacts of cases have reported a mild, febrile illness without respiratory signs or symptoms, suggesting the illness might not always progress to the respiratory phase. Empiric therapy has included antibiotics for atypical pneumonia and antiviral agents such as oseltamivir or ribavirin sometimes in combination with steroids. At present, the most efficacious treatment regimen, if any, is unknown.

Case Definition and Reporting

In order to enhance surveillance for SARS, the NYSDOH is requesting immediate reporting of any suspect cases. The CDC has developed the following case definition:

- Respiratory illness of unknown etiology with onset since February 1, 2003, and the following criteria:
 - Measured temperature $>100.4^{\circ}\text{F}$ ($>38^{\circ}\text{C}$) AND
 - One or more clinical findings of respiratory illness (e.g. cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of either pneumonia or acute respiratory distress syndrome) AND
 - Travel⁺ within 10 days of onset of symptoms to an area with documented or suspected community transmission of SARS (mainland China and Hong Kong Special Administrative Region; Hanoi, Vietnam; and Singapore; excludes areas with secondary cases limited to healthcare workers or direct household contacts)
- OR
- Close contact* within 10 days of onset of symptoms with either a person with a respiratory illness who traveled to a SARS area or a person known to be a suspect SARS case.

⁺ Travel includes transit in an airport in an area with documented or suspected community transmission of SARS.

* Close contact is defined as having cared for, having lived with, or having direct contact with respiratory secretions and/or body fluids of a patient known to be suspect SARS case.

Effective April 10, 2003, on an emergency basis, SARS was added to the reportable disease list (Section 2.1 of the New York State Sanitary Code). Physicians should immediately report any suspect cases to the local health department. If there are difficulties reaching your local health department, please contact the NYSDOH. During business hours, call 518-473-4436; after hours, call 1-866-881-2809. In New York City, call the Bureau of Communicable Disease at 212-788-9830; after hours, call the Poison Control Center at 212-764-7667 or 1-800-222-1222.

Triaging Patients and Infection Control

In the health care setting, it is critical that all personnel who are the first points of contact be trained for SARS screening. It is important to question patients carefully to try to distinguish SARS from respiratory viruses circulating at this time of year. Questions related to travel are key in formulating the differential diagnosis. Upon presentation to the office, patients should be questioned as to travel to China; Hong Kong; Hanoi, Viet Nam; or Singapore within 10 days prior to illness, or exposure to a known or suspected SARS case. If possible, these types of patients should be scheduled at the end of the day, and be brought in the least public entrance. Precautions much like those taken for varicella should be employed. A surgical mask should be placed immediately on the patient and they should be ushered into a remote examining room. The door should remain closed while the patient is in the room. Health care workers who will examine or interact with the patient should use both contact precautions (e.g., gloves, gown and eye protection) and airborne precautions (e.g., an isolation room with negative pressure relative to the surrounding area and use of an N-95 [or equivalent] filtering disposable respirator. If respirators are not available, healthcare workers should wear a surgical mask.) Attention to careful hand hygiene must be emphasized.

Environmental Cleaning

Gloves are to be worn for all cleaning of the environment in the room where a suspect SARS case was seen. Frequently touched surfaces in the examining room (exam table, counter tops, any non-critical equipment used, such as blood pressure cuffs) should be wiped down with an Environmental Protection Agency (EPA)-registered low - or intermediate – level disinfectant and allowed to dry as per manufacturer’s instructions. After cleaning is performed, gloves are to be removed, and hand hygiene must be performed. After the patient leaves the room, in a room that has 1-2 air changes per hour, the door shall remain closed to new patients for approximately 140 minutes to achieve a removal efficiency of 99%.

Etiology

Limited reports on testing results have indicated the virus to be a previously unknown coronavirus. Both polymerase chain reaction and serologic methods have been use in multiple laboratories to reach this point. Metapneumovirus has also been seen in several cases, but there is not enough information to determine what role, if any, human metapneumovirus might have in causing SARS. Definition of the etiology of SARS is ongoing.

Additional Information

For additional information on SARS, please consult the following sites:

Centers for Disease Control and Prevention: <http://www.cdc.gov>

World Health Organization <http://www.who.int/en/>

Updates on this outbreak, as well as the CDC and WHO alerts, will be posted on the NYSDOH’s Health Alert Network (HAN): <https://commerce.health.state.ny.us/hpn>

ADVERSE CARDIAC EVENTS FOLLOWING SMALLPOX VACCINATION

The CDC has developed new guidance regarding potential adverse reactions to smallpox vaccination, as well as identifying additional health conditions that should be the basis for deferment of vaccination (available at: <http://www.bt.cdc.gov/agent/smallpox>). Evidence from recent vaccinations, primarily of military personnel, shows that smallpox vaccination increases a vaccinee's risk of developing myocarditis, pericarditis, or a combination of the two, myopericarditis. The rate of these conditions among recent military vaccinees (1 per 20,000) has been far in excess of the rate among military personnel during 1998-2000 (1 per 100,000). Cases have been generally mild, although one person experienced heart failure that subsequently resolved. Vaccinees who experience chest pain, shortness of breath, or other symptoms suggestive of cardiac disease, should immediately seek medical care.


Myocardial infarction (MI) has occurred among five vaccinees (four civilians and one military vaccinee); two other persons (both civilians) have experienced angina. Three persons that experienced a heart attack have died. Vaccination may not have caused these conditions; they may have occurred by chance alone. Additional studies regarding a possible link between vaccination and MI/angina are underway.

In the interest of safety while these additional studies are underway, persons with known heart disease and risk factors for heart disease have been added to the list of who should not be vaccinated. Known heart disease includes coronary artery disease, previous heart attack, angina, congestive heart failure, cardiomyopathy, stroke, transient ischemia attack, chest pain or shortness of breath on exertion, and other heart conditions under a physician's care. Three or more known major risk factors for heart disease are also a reason not to be vaccinated, specifically high blood pressure, increased cholesterol, diabetes, a parent or sibling with a heart condition before age 50 years, or a current smoker.

Physicians with questions about potential adverse reactions to vaccination should contact their county health department. If there are difficulties reaching your local health department, please contact the NYSDOH. During business hours, call 518-473-4436; after hours, call the duty officer at 1-866-881-2809. In New York City, contact the Provider Access Line anytime at 1-866-NYCDOH1.

As always, we thank you for your ongoing interest and involvement in these important public health issues. We will keep you informed as new information becomes available.

Sincerely,



Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner of Health