DOE - SEVERE ACUTE RESPIRATORY SYNDROME (SARS) UPDATE – June 18, 2003

I have been monitoring the SARS situation and provide the following information that is current as of Thursday, June 19, 2003, 0800 hours, EDT. Information presented is routinely taken from the Centers for Disease Control and Prevention (CDC), http://www.cdc.gov/ncidod/sars/index.htm, The World Health Organization (WHO), http://www.who.int/csr/sars/en/, the Department of Defense Global Emerging Infections Surveillance and Response System site, (DoD-GEIS)-http://www.geis.ha.osd.mil/, and other creditable sources. You will find the most current information in this document up-front.

WHO - Update on cases and countries

As of 18 June 2003, 17:00 GMT+2 a cumulative total of 8465 probable SARS cases with 801 deaths (9.462% mortality, see charts and map, pp. 5-6) has been reported from 29 countries. This represents an increase of 1 new case since WHO's last update on 17 June. **Two new deaths were reported** - http://www.who.int/csr/sars/country/2003_06_18/en/. The **United States** reports a total of 75 probable cases from 42 states - http://www.cdc.gov/od/oc/media/sars.htm.

Recent news

On 17June2003, WHO removed **Taiwan** from its list of areas to which travellers are advised to avoid all but essential travel. Only **Beijing, China** now has that distinction (see WHO - SARS Travel Recommendations Summary Table p. 4) - http://www.cdc.gov/travel/other/sarschina.htm. On 14June, The Toronto Star reported, "…..Fever not always present in older patients." - http://www.thestar.com/NASApp/cs/ContentServer?pagename=thestar/Layout/Article_Type1&c=Article&cid=1052251834438&call_pageid=968332188854&col=968350060724. On 10 June, the **CDC updated its Questions and Answers: Travel and Quarantine** - http://www.cdc.gov/ncidod/sars/qa/travel.htm.

WHO Update 83 – One hundred days into the outbreak

18June2003 - http://www.who.int/csr/don/2003_06_18/en/

Tomorrow will mark the 100th day since WHO first alerted the world, on 12 March, to the SARS threat. From the 55 cases recognized on that day, alarmingly concentrated in hospitals in Hong Kong, Hanoi, and Singapore, the outbreak exploded within a month to cause some 3000 cases and more than 100 deaths in 20 countries on all continents.

By that time, too, the public face of SARS had come to be symbolized by a mask – an appropriate image for a disease still shrouded in mystery. Although the causative agent was conclusively identified on 17 April, the disease had no vaccine, no effective treatment, an overall case fatality of 15%, and many unexplained features. As the coming weeks would reveal, SARS was also full of surprises.

SARS was carried out of southern China, where the first cases are now known to have occurred in late November 2002, by an infected medical doctor who spent a single night on the 9th floor of a Hong Kong hotel in late February. He infected at least 16 other persons staying on or visiting the same floor. From this single event, which is still not fully understood in terms of the dynamics of transmission, SARS spread internationally.

The number of cases passed 4000 on 23 April and then rapidly soared to 5000 on 28 April, 6000 on 2 May, and 7000 on 8 May, when cases were reported from 30 countries. During the peak of the global outbreak, near the start of May, more than 200 new cases were being reported each day. Detection of new infections subsequently slowed, passing 8000 on 22 May.

During June, the number of new cases has gradually dwindled to the present daily handful. WHO is confident that all countries that have experienced outbreaks are disclosing cases fully and promptly – SARS is too big a disease to hide for long. The global outbreak, at least in this initial phase, is clearly coming under control.

The reduced number of cases is not a "natural phenomenon" that can be attributed to a change in the virulence or infectivity of the SARS virus, as often happens with new diseases that quickly "burn out". Instead, the dramatic reduction in the number of SARS cases is the result of monumental efforts on the part of governments and health care staff, supported by a well-informed and cooperative public.

The achievement is all the more impressive when viewed against the nature of SARS as an especially difficult and dangerous new disease.

SARS is the first severe and readily transmissible new disease to strike a globalized society. As such, its history to date illustrates the favourable conditions, both for the devastating spread of a new disease and solidarity in its containment, that have come to characterize a closely interconnected, interdependent, and highly mobile world. On the negative side, the volume of international air travel allowed SARS to spread around the world with unprecedented speed. Also on the negative side, the close interdependence of economies and markets amplified the economic impact of SARS considerably, while instantaneous electronic communications elevated public concern – often to the point of panic – and further added to the social and economic disruption caused by SARS.

Just as Ebola came to symbolize the fear inspired by a new disease, SARS has vividly depicted a truism of the infectious disease situation in a globalized world: an outbreak anywhere places every country at risk. The containment of SARS – or any other epidemic-prone disease – requires unprecedented solidarity and makes such an effort a matter of self-interest for every nation.

The success to date clearly demonstrates that a spirit of international solidarity has been a driving force in the rapid containment of SARS.

On the positive side, the power of electronic communications allowed the establishment of "virtual" networks of researchers, epidemiologists, and clinicians, who set aside competition and collaborated around the clock to identify the SARS causative agent, sequence its genome, define clinical features, and investigate modes of transmission in record time.

The world's electronic interconnectedness also contributed to the effectiveness of the first global alerts to SARS. The initial 12 March alert, followed three days later by a stronger and more specific warning, provided a clear line of demarcation in the early history of SARS. Areas with cases prior to the alert experienced the most devastating outbreaks. These occurred in Hong Kong, Hanoi, Singapore, Toronto, and China. Prior to 12 March, in all these cases, hospital staff, unaware that a new disease had surfaced and was spreading in health care settings, took no precautions to protect themselves as they fought to save the lives of patients. SARS spread rapidly in these hospitals, and then spilled over into the wider community, resulting in the exportation of cases elsewhere.

With the notable exception of Taiwan, all other areas experiencing imported cases after the alerts were able to prevent further transmission altogether or hold the number of additional cases to a very small number. Most observers attribute this success to the high level of awareness and preparedness that followed the alerts, greatly aided by responsible reporting in the media.

Key weapon: the thermometer

One of the most important lessons learned to date is the decisive power of high-level political commitment to contain an outbreak even when sophisticated control tools are lacking. SARS has been brought close to defeat by the diligent and unrelenting application – on a monumental scale – of centuries-old control measures: isolation, contact tracing and follow-up, quarantine, and travel restrictions. Other successful measures include the designation of SARS-dedicated hospitals to minimize the risk of spread to other hospitals, mass media campaigns to educate the public and encourage prompt reporting of symptoms, and the establishment of fever clinics to relieve pressure on emergency rooms, which have also been the setting for many new infections. Screening at airports and other border points and, through fever checks, throughout selected population groups has also been effective.

All of these measures contributed to the prompt detection and isolation of new sources of infection – a key step on the way to breaking the chain of transmission. Given the importance of supportive public attitudes and actions, the single most important control "tool" in bringing SARS under control may very well be the thermometer.

Viet Nam broke the chain of transmission on 28 April, as did the Philippines on 20 May, and Singapore on 31 May. Recommendations to postpone all but essential travel have been removed for all areas except Beijing, China.

In reaching these landmarks in the containment of SARS, the most severely affected countries and areas have identified and rapidly corrected long-standing weaknesses in their health systems in ways that will mean permanent improvements for the management of all diseases. In addition, systems of data collection and reporting, and new patterns of openly and frankly communicating information to the public will hold the world in good stead when the next new disease emerges and the next influenza pandemic breaks out.

Continued surveillance and vigilance needed for a year

SARS has repeatedly demonstrated its resilience, most recently with the resurgence of cases in Toronto. As underscored by researchers at this week's meeting in Kuala Lumpur , SARS has features that can thwart even the best preparedness plans and slip past even the highest levels of awareness and suspicion. Under the right conditions, which remain poorly understood, single highly infectious persons have been known to set off trains of transmission that have led, in the worst cases, to almost 100 additional infections. In Singapore, five patients accounted for 103 of the total 206 cases in the outbreak.

Another significant problem occurs when SARS symptoms are masked by other diseases. Many surprising clusters of cases have been fanned by such patients, as they do not arouse suspicion, are not isolated or managed according to strict procedures of infection control, have no restrictions on visitors, and are frequently transferred to other hospitals for further treatment or tests.

Although SARS is clearly coming under control, the need for continued vigilance is now greater than ever. The world still has a chance to interrupt the chain of person-to-person transmission everywhere. However, because of the many unanswered scientific questions, particularly concerning

the origins of the virus and the contribution of environmental contamination to overall transmission, WHO sees a need for at least a full year of surveillance to determine whether the disease has established endemicity and to ensure that no cases have spread, undetected, to countries with poor surveillance and reporting systems. If the disease has not become endemic, the next big hurdles will concern the questions of a possible animal reservoir and possible seasonal recurrence. Scientists cannot rule out the possibility that the SARS virus hides somewhere in nature, as the Ebola virus does, only to return when conditions are once again ripe for the efficient spread of infection to its new human host.

Finally, as underscored in today's conference sessions, the development of a reliable point-of-care diagnostic test must be given high priority. Pending the availability of such a test, and for a while yet to come, every case of atypical pneumonia has the potential to arouse suspicion and spark a panic. Any hospital-based cluster of febrile patients with respiratory symptoms will need extensive investigation. And any person with a fever or cough could be barred from international travel.

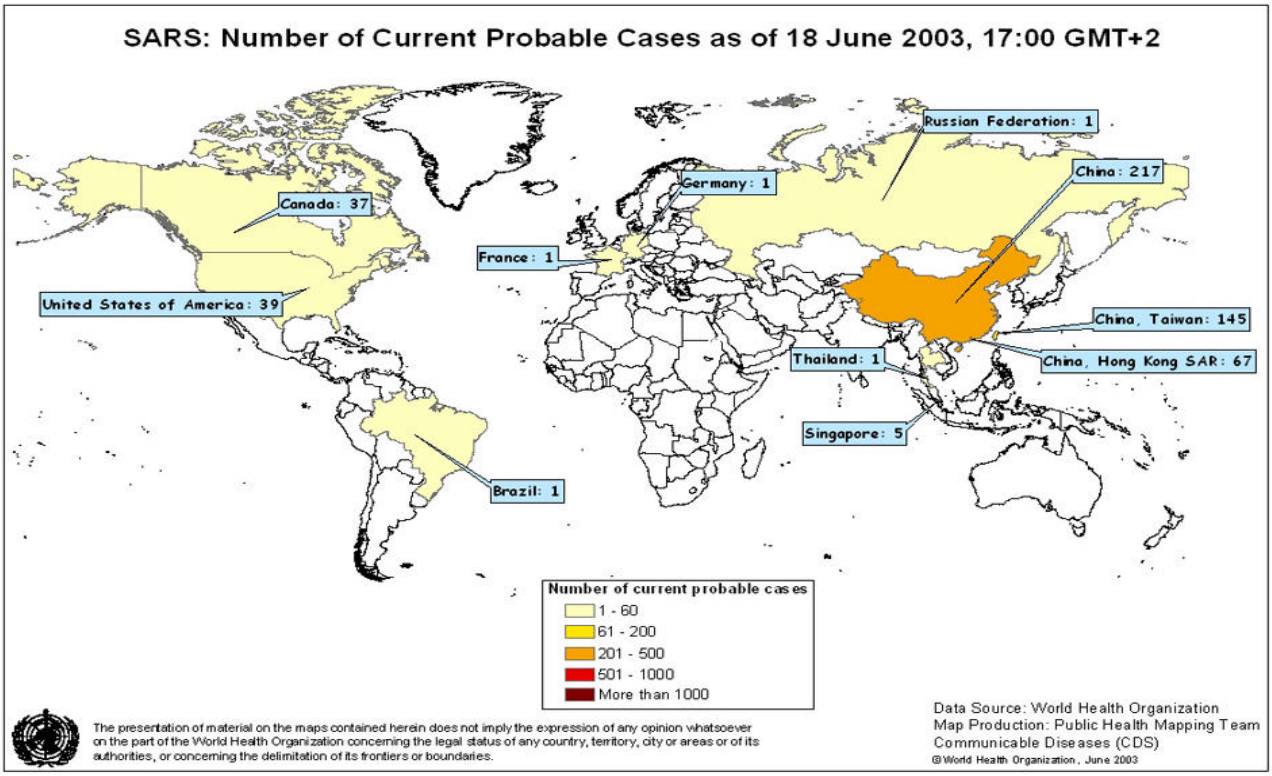
As long as a single case of SARS exists or is suspected anywhere in the world, and as long as fundamental questions about the origins of the virus remain unanswered, all countries need to remain on guard.

WHO - SARS Travel Recommendations Summary Table

17 June 2003 - http://www.who.int/csr/sars/travel/2003_06_17/en/

This table, updated daily, indicates those areas with recent local transmission of SARS for which WHO has issued recommendations pertaining to international travel. A **travel advisory** recommends that nonessential travel be deferred; a **travel alert** does not advise against travel, but informs travelers of a health concern and provides advice about specific precautions. This table summarizes those areas of the world for which further specific measures have been recommended.
Summary of WHO measures related to international travel

Country	Area	Exit screening for international travellers departing the area	ADVISORY - Traveller to consider postponing all but essential travel to the area
Canada	Toronto (ALERT)	YES	NO
China	Beijing	YES	YES
China	Hong Kong Special Administrative Region of China (ALERT)	YES	NO
China	Taiwan (ALERT)	YES	NO



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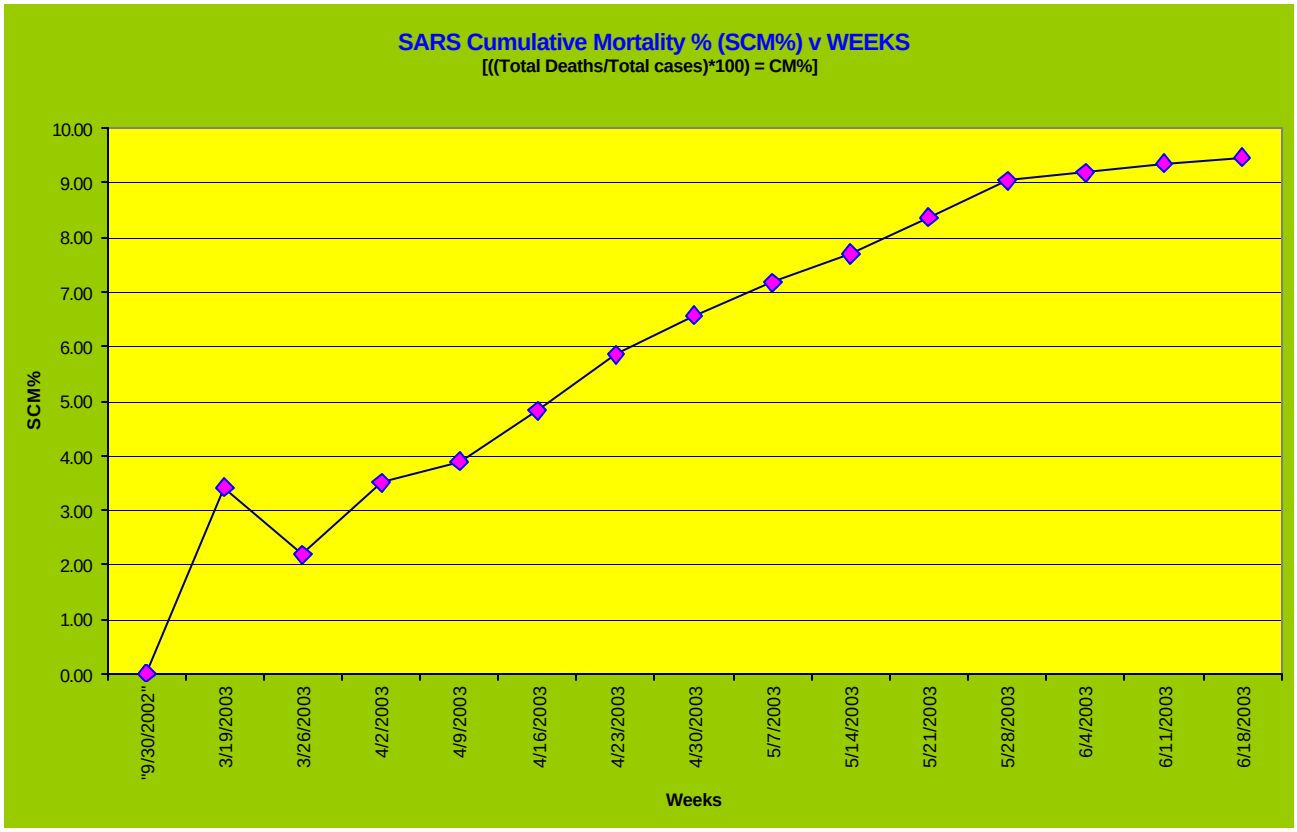

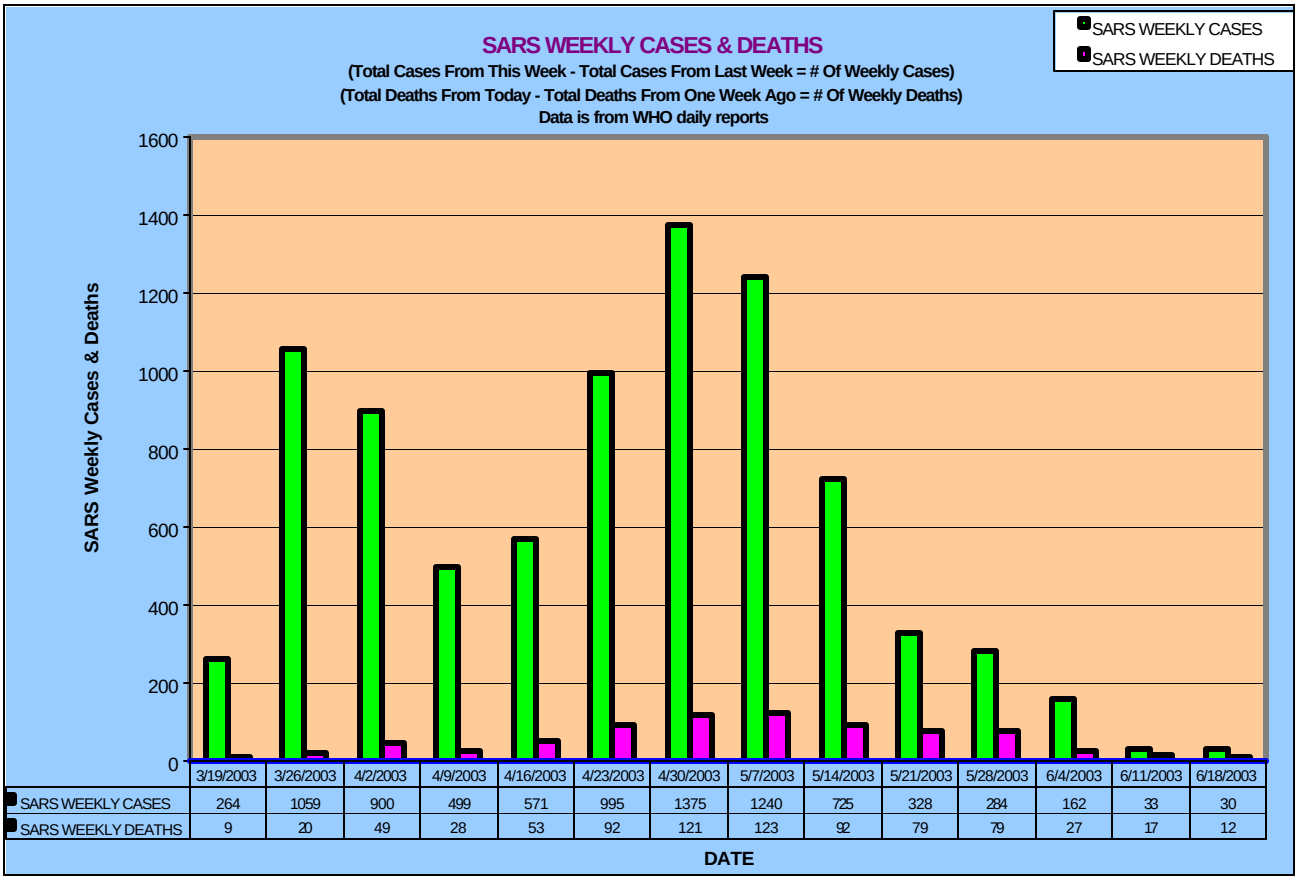

CDC FACT SHEET - Basic Information About SARS

June 4, 2003 - http://www.cdc.gov/ncidod/sars/factsheet.htm

| **Español** | **Français** |

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A new disease called SARS

Severe acute respiratory syndrome (SARS) is a respiratory illness that has recently been reported in Asia, North America, and Europe. This fact sheet provides basic information about the disease and what is being done to combat its spread. To find out more about SARS, go to www.cdc.gov/ncidod/sars/ and www.who.int/csr/sars/en/ . The Web sites are updated daily.

Symptoms of SARS

In general, SARS begins with a fever greater than 100.4°F [>38.0°C]. Other symptoms may include headache, an overall feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms. After 2 to 7 days, SARS patients may develop a dry cough and have trouble breathing.

How SARS spreads

The primary way that SARS appears to spread is by close person-to-person contact. Most cases of SARS have involved people who cared for or lived with someone with SARS, or had direct contact with infectious material (for example, respiratory secretions) from a person who has SARS. Potential ways in which SARS can be spread include touching the skin of other people or objects that are contaminated with infectious droplets and then touching your eye(s), nose, or mouth. This can happen when someone who is sick with SARS coughs or sneezes droplets onto themselves, other people, or nearby surfaces. It also is possible that SARS can be spread more broadly through the air or by other ways that are currently not known.

Who is at risk for SARS

Most of the U.S. cases of SARS have occurred among travelers returning to the United States from other parts of the world with SARS. There have been very few cases as a result of spread to close contacts such as family members and health care workers. Currently, there is no evidence that SARS is spreading more widely in the community in the United States.

Possible cause of SARS

Scientists at CDC and other laboratories have detected a previously unrecognized coronavirus in patients with SARS. The new coronavirus is the leading hypothesis for the cause of SARS.

What CDC is doing about SARS

CDC is working closely with the World Health Organization (WHO) and other partners in a global effort to address the SARS outbreak. For its part, CDC has taken the following actions:

* Activated its Emergency Operations Center to provide round-the-clock coordination and response.
* Committed more than 700 medical experts and support staff to work on the SARS response.
* Deployed medical officers, epidemiologists, and other specialists to assist with on-site investigations around the world.
* Provided ongoing assistance to state and local health departments in investigating possible cases of SARS in the United States.
* Conducted extensive laboratory testing of clinical specimens from SARS patients to identify the cause of the disease.
* Initiated a system for distributing health alert notices to travelers who may have been exposed to cases of SARS.

CDC RECOMMENDATIONS

CDC has issued recommendations and guidelines for people who may be affected by this outbreak.

For individuals considering travel to areas with SARS:

CDC has issued two types of notices to travelers: advisories and alerts. A ***travel advisory*** recommends that nonessential travel be deferred; a ***travel alert*** does not advise against travel, but informs travelers of a health concern and provides advice about specific precautions. CDC updates information on its website on the travel status of other areas with SARS as the situation evolves.

For individuals who must travel to an area with SARS:

CDC advises that travelers in an area with SARS should wash their hands frequently to protect against SARS infection. In addition, CDC advises that travelers may wish to avoid close contact with large numbers of people as much as possible to minimize the possibility of infection. CDC does not recommend the routine use of masks or other personal protective equipment while in public areas. For more information, read the Interim Guidelines about Severe Acute Respiratory Syndrome (SARS) for Persons Traveling to Areas with SARS.

For individuals who think they might have SARS:

People with symptoms of SARS (fever greater than 100.4°F [>38.0°C] accompanied by a cough and/or difficulty breathing) should consult a health-care provider. To help the health-care provider make a diagnosis, tell them about any recent travel to places where SARS has been reported or whether there was contact with someone who had these symptoms.

For family members caring for someone with SARS:

CDC has developed interim infection control recommendations for patients with suspected SARS in the household. These basic precautions should be followed for 10 days after respiratory symptoms and fever are gone. During that time, SARS patients are asked to limit interactions outside the home (not go to work, school, or other public areas).

For health-care workers:

Transmission of SARS to health-care workers appears to have occurred after close contact with sick people before recommended infection control precautions were put into use. CDC has issued interim infection control recommendations for health-care settings as well as for the management of exposures to SARS in health-care and other institutional settings.

For more information, visit CDC's SARS Web site, or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

CDC - Frequently Asked Questions and Answers on SARS

June 3, 2003 - http://www.cdc.gov/ncidod/sars/faq.htm

Travel and Quarantine

June 10, 2003, 12:00 PM ET - http://www.cdc.gov/ncidod/sars/qa/travel.htm

GENERAL INFORMATION

THE ILLNESS

What is SARS?
Severe acute respiratory syndrome (SARS) is a respiratory illness that has recently been reported in Asia, North America, and Europe. For additional information, check the World Health Organization's (WHO) SARS Web site or visit other pages on CDC's SARS Web site.
What are the symptoms and signs of SARS?
The illness usually begins with a fever (measured temperature greater than 100.4°F [>38.0°C]). The fever is sometimes associated with chills or other symptoms, including headache, general feeling of discomfort and body aches. Some people also experience mild respiratory symptoms at the outset. After 2 to 7 days, SARS patients may develop a dry, nonproductive cough that might be accompanied by or progress to the point where insufficient oxygen is getting to the blood. In 10 percent to 20 percent of cases, patients will require mechanical ventilation. For more information, see the MMWR dispatch. **If I were exposed to SARS, how long would it take for me to become sick?**
The incubation period for SARS is typically 2 to 7 days; however, isolated reports have suggested an incubation period as long as 10 days. The illness usually begins with a fever (>100.4°F [>38.0°C]) (see signs and symptoms, above).
Do some people who recover from SARS become sick again or relapse?
At this time we do not have a full understanding of the natural course of illness in persons infected with the SARS coronavirus (SARS Co-V). It will be important to learn what factors might influence illness progression and recovery. Such factors could be related to the virus itself, how the body's immune system reacts to the virus, how infection with the virus is treated, or other possibilities. CDC and other scientists are trying to learn the answers to these important questions.
What medical treatment is recommended for patients with SARS?
CDC currently recommends that patients with SARS receive the same treatment that would be used for any patient with serious community-acquired atypical pneumonia.
Is the use of ribavirin (or other antiviral drugs) effective in the treatment of patients with SARS?
At present, the most efficacious treatment regimen, if any, is unknown. In several locations, therapy has included antivirals such as oseltamivir or ribavirin. Steroids also have been given orally or intravenously to patients in combination with ribavirin and other antimicrobials. In the absence of controlled clinical trials, however, the efficacy of these regimens remains unknown. Early information from laboratory experiments suggests that ribavirin does not inhibit virus growth or cell-to-cell spread of one isolate of the new coronavirus that was tested. Additional laboratory testing of ribavirin and other antiviral drugs is being done to see if an effective treatment can be found.

The Spread of SARS

http://www.cdc.gov/ncidod/sars/qa/spread.htm

How is SARS spread?
The primary way that SARS appears to spread is by close person-to-person contact. Potential ways in which SARS can be spread include touching the skin of other people or objects that are contaminated with infectious droplets and then touching your eye(s), nose, or mouth. This can

happen when someone who is sick with SARS coughs or sneezes droplets onto themselves, other people, or nearby surfaces. It also is possible that SARS can be spread more broadly through the air or by other ways that are currently not known.

What does "close contact" mean?

The primary way that SARS appears to spread is by close person-to-person contact. Close contact might occur when between people live together in the same household or if someone is providing care to a SARS patient. Examples include kissing or embracing, sharing eating or drinking utensils, close conversation (within 3 feet), physical examination, and any other direct physical contact between people. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief period of time.

How can I protect myself against SARS?

There are some common-sense measures that you can take to prevent the spread of SARS that apply to many infectious diseases. The most important is frequent hand washing with soap and water or use of alcohol-based hand rubs (See Guideline for Hand Hygiene in Health-Care Settings). In addition, you should avoid touching your eyes, nose, and mouth with unclean hands and encourage people around you to cover their nose and mouth with a tissue when coughing or sneezing.

How long is a person with SARS infectious to others?

Information to date suggests that people are most likely to be infectious when they have symptoms, such as fever or cough. However, it is not known how long before or after their symptoms begin that patients with SARS might be able to transmit the disease to others.

Who is most at risk of contracting SARS?

Most of the U.S. cases of SARS have occurred among travelers returning to the United States from other parts of the world affected by SARS. There have been very few cases as a result of spread to close contacts such as family members and health care workers. Currently, there is no evidence that SARS is spreading more widely in the community in the United States.

Should I wear a surgical mask to protect myself from getting SARS?

CDC does not recommend routine use of surgical masks when people are in public to prevent SARS.

Are there any times when a surgical mask should be worn to prevent the spread of SARS?

People who have -- or think they might have -- SARS should cover their mouth and nose with a tissue when coughing or sneezing. If possible, they also should wear a surgical mask during close contact with people who are not infected (for example, household members) to prevent the spread of infectious droplets. When a person with SARS is unable to wear a surgical mask, household members should wear surgical masks when in close contact with the patient. Surgical masks should fit snugly around the mouth and nose. Masks are intended for use by one person only and should not be shared. Masks should be discarded when soiled or moist; changing masks daily is a good rule of thumb. Hand hygiene should be performed after handling a soiled mask. For additional information, see infection-control precautions for SARS patients and their close contacts in households.

NEW! Should I be concerned about buying items which are made in countries where SARS has been found?

SARS appears to be transmitted mainly by direct contact with infectious material, including large respiratory droplets spread in the air when an infected person coughs or sneezes. Touching objects contaminated with infectious droplets and then touching your eye(s), nose, or mouth could result in transmission of SARS. Contamination of environmental surfaces would be a particular concern in health-care settings and households where patients with SARS would be receiving care. Furniture, clothing, and other items imported from countries where SARS has been found would be expected to pose little, if any, risk of transmission of SARS.

TESTING FOR SARS

Is there a test for SARS?
Several laboratory tests can be used to detect the SARS-associated coronavirus (SARS-CoV). A reverse transcription polymerase chain reaction (RT-PCR) test can detect SARS-CoV in clinical specimens, including blood, stool, and nasal secretions. Serologic testing also can be performed to detect SARS-CoV antibodies produced after infection. Finally, viral culture has been used to detect SARS-CoV. Currently, all serologic testing for SARS-CoV in the United States is being done at CDC. However, CDC has begun to make coronavirus testing materials available to state health departments and other laboratories.

What is a PCR test?
PCR (or polymerase chain reaction) is a laboratory method for detecting the genetic material of an infectious disease agent in specimens from patients. This type of testing has become an essential tool for detecting infectious disease agents.
What does serologic testing involve?
A serologic test is a laboratory method for detecting the presence and/or level of antibodies to an infectious agent in serum from a person. Antibodies are substances made by the body's immune system to fight a specific infection.
What does viral culture and isolation involve?
For a viral culture, a small sample of tissue or fluid that may be infected is placed in a container along with cells in which the virus can grow. If the virus grows in the culture, it will cause changes in the cells that can be seen under a microscope.

CAUSE OF SARS

What is the cause of SARS?
Scientists at CDC and other laboratories have detected a previously unrecognized coronavirus in patients with SARS. This new coronavirus is the leading hypothesis for the cause of SARS.
What are coronaviruses?
Coronaviruses are a group of viruses that have a halo or crown-like (corona) appearance when viewed under a microscope. These viruses are a common cause of mild to moderate upper-respiratory illness in humans and are associated with respiratory, gastrointestinal, liver and neurologic disease in animals.
How long can the SARS coronavirus (SARS Co-V) survive in the environment? NEW!
Preliminary studies in some research laboratories suggest that the virus may survive in the environment for several days. The length of time that the virus survives likely depends on a number of factors. These factors could include the type of material or body fluid containing the virus and various environmental conditions such as temperature or humidity. Researchers at CDC and other institutions are designing standardized experiments to measure how long SARS Co-V can survive in situations that simulate natural environmental conditions. Data on survival of SARS Co-V outside of the human body emphasize the importance of frequent handwashing with soap and water or use of alcohol-based hand rubs if hands are not visibly dirty. See the "Guideline for Hand Hygiene in Health-Care Settings" for more details on hand hygiene.
What kills the virus that causes SARS? NEW!
Right now, there are no disinfectant products registered by the U.S. Environmental Protection Agency (EPA) for use on environmental surfaces that are specifically listed as having the ability to kill the new coronavirus associated with SARS. However, related viruses that have similar physical and biochemical properties can be killed with bleach, ammonia or alcohol, or cleaning agents containing any of these disinfectants. Cleaning agents should be used according to the manufacturer's instructions.
If coronaviruses usually cause mild illness in humans, how could this new coronavirus be responsible for a potentially life-threatening disease such as SARS?
There is not enough information about the new virus to determine the full range of illness that it might cause. Coronaviruses have occasionally been linked to pneumonia in humans, especially

people with weakened immune systems. The viruses also can cause severe disease in animals, including cats, dogs, pigs, mice, and birds.

Has new information about coronavirus changed the recommendations for medical treatment for patients with SARS?

The possibility that coronavirus is the cause of SARS has not changed treatment recommendations. The new coronavirus is being tested against various antiviral drugs to see if an effective treatment can be found.

What about reports from other laboratories suggesting that the cause of SARS may be a paramyxovirus?

Early on in the SARS investigation, researchers from several laboratories participating in the WHO network have reported the identification of a paramyxovirus in clinical specimens from SARS patients. Later findings indicated that a new coronavirus is the most likely cause of SARS.

THE OUTBREAK

What is the status of the SARS outbreak in the United States?

In the United States, cases of SARS continue to be reported primarily among people who traveled to affected areas; a small number of other people have gotten sick after being in close contact with (that is, having cared for or lived with) a SARS patient while in the United States. Currently, there is no evidence that SARS is spreading more widely in the community in the United States.

To minimize the risk for SARS among U.S. residents, the public health system is taking careful and thorough precautions to stop the spread of SARS. People who are suspected of having SARS are being isolated from others and getting care. People arriving from affected parts of the world (who might have been exposed to SARS) are receiving information about SARS and instructions on what they should do if they become ill. SARS patients and their contacts are being monitored to help prevent spread of the disease.

What is the status of the SARS outbreak outside the United States?

Most cases of SARS have been reported from China. In addition, SARS cases have been reported from more than 20 other countries. Measures to control the spread of SARS continue to be used in countries worldwide so that the outbreak can be contained. Visit WHO's SARS page for daily updates on case reports in the United States and other countries.

What is the difference between a "probable" SARS case and a "suspect" SARS case?

Suspect SARS cases have fever, respiratory illness, and recent travel to an affected area with community transmission of SARS and/or contact with a suspect SARS patient. Probable cases meet the criteria for a suspect case and also have evidence (e.g., chest X-ray) of pneumonia or respiratory distress syndrome.

CDC Updated Interim U.S. Case Definition of Severe Acute Respiratory Syndrome (SARS)

May 23, 2003, 10:00 PM ET - **http://www.cdc.gov/ncidod/sars/casedefinition.htm**

Download PDF version formatted for print (126 KB/3 pages)

The previous CDC SARS case definition (published May 20, 2003) has been updated as follows:

- In the Epidemiologic Criteria, the last date of illness onset for inclusion as reported case for Toronto, Canada is now "ongoing."

Clinical Criteria

- Asymptomatic or mild respiratory illness
- Moderate respiratory illness
  - Temperature of >100.4º F (>38º C)*, and

- One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, or hypoxia).
- Severe respiratory illness
  - Temperature of >100.4º F (>38º C)*, and
  - One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, or hypoxia), and
    - radiographic evidence of pneumonia, or
    - respiratory distress syndrome, or
    - autopsy findings consistent with pneumonia or respiratory distress syndrome without an identifiable cause.

Epidemiologic Criteria

- Travel (including transit in an airport) within 10 days of onset of symptoms to an area with current or previously documented or suspected community transmission of SARS (see Table), or
- Close contact§ within 10 days of onset of symptoms with a person known or suspected to have SARS

Travel criteria for suspect or probable U.S. cases of SARS		
Area	First date of illness onset for inclusion as reported case‡	Last date of illness onset for inclusion as reported case†
China (mainland)	November 1, 2002	Ongoing
Hong Kong	February 1, 2003	Ongoing
Hanoi, Vietnam	February 1, 2003	May 25, 2003
Singapore	February 1, 2003	Ongoing
Toronto, Canada	April 23, 2003	Ongoing
Taiwan	May 1, 2003	Ongoing

Laboratory Criteria¶

- Confirmed
  - Detection of antibody to SARS-CoV in specimens obtained during acute illness or >21 days after illness onset, or
  - Detection of SARS-CoV RNA by RT-PCR confirmed by a second PCR assay, by using a second aliquot of the specimen and a different set of PCR primers, or
  - Isolation of SARS-CoV.
- Negative
  - Absence of antibody to SARS-CoV in convalescent serum obtained >21 days after symptom onset.
- Undetermined
  - Laboratory testing either not performed or incomplete.

Case Classification**

- Probable case: meets the clinical criteria for severe respiratory illness of unknown etiology and epidemiologic criteria for exposure; laboratory criteria confirmed, negative, or undetermined.
- Suspect case: meets the clinical criteria for moderate respiratory illness of unknown etiology, and epidemiologic criteria for exposure; laboratory criteria confirmed, negative, or undetermined.

Exclusion Criteria

A case may be excluded as a suspect or probable SARS case if:

- An alternative diagnosis can fully explain the illness***

- The case was reported on the basis of contact with an index case that was subsequently excluded as a case of SARS (e.g., another etiology fully explains the illness) provided other possible epidemiologic exposure criteria are not present

Also see:

- MMWR: Updated Interim Surveillance Case Definition for Severe Acute Respiratory Syndrome (SARS)— April 29, 2003

* A measured documented temperature of >100.4º F (>38º C) is preferred. However, clinical judgment should be used when evaluating patients for whom a measured temperature of >100.4º F (>38º C) has not been documented. Factors that might be considered include patient self-report of fever, use of antipyretics, presence of immunocompromising conditions or therapies, lack of access to health care, or inability to obtain a measured temperature. Reporting authorities should consider these factors when classifying patients who do not strictly meet the clinical criteria for this case definition.
§ Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a patient known to have SARS. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, close conversation (<3 feet), physical examination, and any other direct physical contact between persons. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief period of time.
‡ The WHO has specified that the surveillance period for China should begin on November 1; the first recognized cases in Hong Kong, Singapore and Hanoi (Vietnam) had onset in February 2003. The dates for Toronto and Taiwan are linked to CDC's issuance of travel recommendations.
† The last date for illness onset is 10 days (i.e., one incubation period) after removal of a CDC travel alert. The case patient's travel should have occurred on or before the last date the travel alert was in place.
¶Assays for the laboratory diagnosis of SARS-CoV infection include enzyme-linked immunosorbent assay, indirect fluorescent-antibody assay, and reverse transcription polymerase chain reaction (RT-PCR) assays of appropriately collected clinical specimens (Source: CDC. Guidelines for collection of specimens from potential cases of SARS. Available at http://www.cdc.gov/ncidod/sars/specimen_collection_sars2.htm). Absence of SARS-CoV antibody from serum obtained ≤21 days after illness onset, a negative PCR test, or a negative viral culture does not exclude coronavirus infection and is not considered a definitive laboratory result. In these instances, a convalescent serum specimen obtained >21 days after illness is needed to determine infection with SARS-CoV. All SARS diagnostic assays are under evaluation.
** Asymptomatic SARS-CoV infection or clinical manifestations other than respiratory illness might be identified as more is learned about SARS-CoV infection.
*** Factors that may be considered in assigning alternate diagnoses include the strength of the epidemiologic exposure criteria for SARS, the specificity of the diagnostic test, and the compatibility of the clinical presentation and course of illness for the alternative diagnosis.

CDC - Interim Guidelines about Severe Acute Respiratory Syndrome (SARS) for Persons in the General Workplace Environment

May 8, 2003, 5:00 PM ET - http://www.cdc.gov/ncidod/sars/workplaceguidelines.htm
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The Centers for Disease Control and Prevention (CDC) is investigating the spread of a respiratory illness called severe acute respiratory syndrome (SARS). CDC has issued various levels of advice for people traveling to areas with SARS. For some areas, CDC has issued travel advisories, recommending against nonessential travel. You can learn more about SARS from the World Health Organization. These websites will be updated as soon as new information is learned.

SARS is an infectious illness that appears to spread primarily by close person-to-person contact, such as in situations in which persons have cared for, lived with, or had direct contact with respiratory secretions and/or body fluids of a person known to be a suspect SARS case. Potential ways in which infections can be transmitted by close contact include touching the skin of other persons or objects that become contaminated with infectious droplets and then touching your eyes, nose or mouth.

Workers, who in the last 10 days have traveled to a known SARS area, or have had close contact with a co-worker or family member with suspected or probable SARS could be at increased risk of developing SARS and should be vigilant for the development of fever (greater than 100.4° F) or respiratory symptoms (e.g., cough or difficulty breathing). If these symptoms develop you should not go to work, school, or other public areas but should seek evaluation by a health-care provider and practice infection control precautions recommended for the home or residential setting; **be sure to contact your health-care provider beforehand to let them know you may have been exposed to SARS so arrangements can be made, as necessary, to prevent transmission to others in the healthcare setting.** For more information about the signs and symptoms of SARS, please visit CDC's website. More detailed guidance on management of symptomatic persons who may have been exposed to SARS, such as how long you should avoid public areas is available at the exposure management page.

As with other infectious illnesses, one of the most important and appropriate preventive practices is careful and frequent hand hygiene. Cleaning your hands often using either soap and water or waterless alcohol-based hand sanitizers removes potentially infectious materials from your skin and helps prevent disease transmission.

The routine use of personal protective equipment (PPE) such as respirators, gloves, or, using surgical masks for protection against SARS exposure is currently not recommended in the general workplace (outside the health-care setting).

WHO - First data on stability and resistance of SARS coronavirus compiled by members of WHO laboratory network

4 May 2003 - http://www.who.int/csr/sars/survival_2003_05_04/en/index.html
This information has been provided by Members of the WHO multi-center collaborative network on SARS diagnosis. The major conclusions from these studies are:
Virus survival in stool and urine

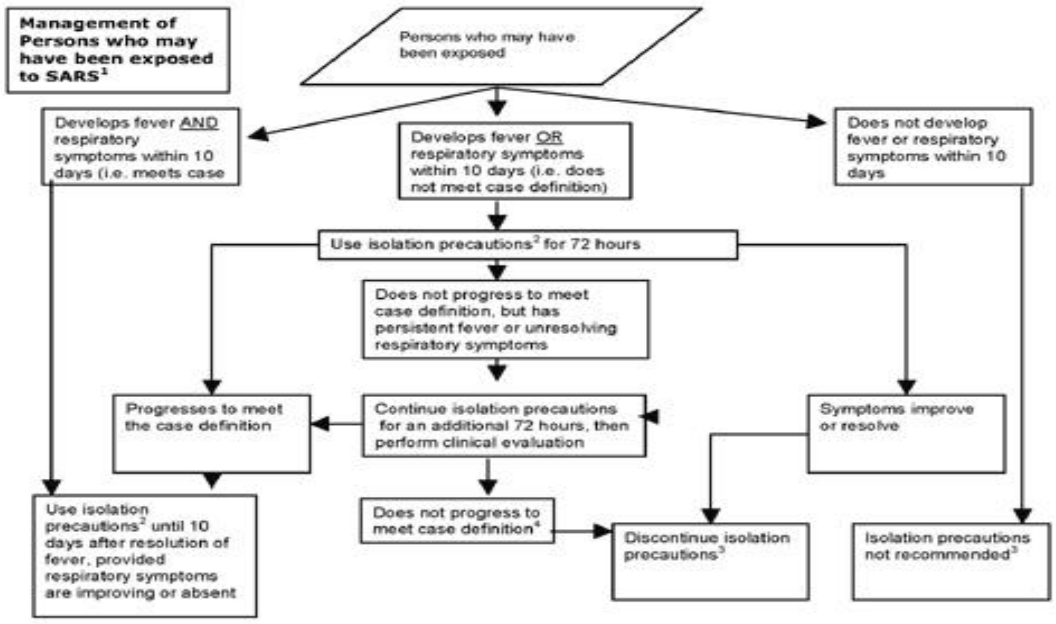
- **Virus is stable in faeces (and urine) at room temperature for at least 1-2 days.**
- **Virus is more stable (up to 4 days) in stool from diarrhea patients (which has higher ph) than in normal stool where it could only be found for up to 6h.**

Disinfectants and fixatives (for use in laboratories)

- Virus loses infectivity after exposure to different commonly used disinfectants and fixatives.

Virus survival in cell-culture supernatant

- Only minimal reduction in virus concentration after 21 days at 4°C and -80°C.
- Reduction in virus concentration by one log only at stable room temperature for 2 days. This would indicate that the virus is more stable than the known human coronaviruses under these conditions.
- Heat at 56°C kills the SARS coronavirus at around 10000 units per 15 min (quick reduction).



[1]Exposure includes travel from areas with documented or suspected community transmission of SARS (link to case definition) or close contact with persons who have SARS; Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a patient known to have SARS. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, close conversation (<3 feet), physical examination, and any other direct physical contact between persons. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief period of time.

[2]Isolation precautions include limiting patient's interactions with others outside the home (e.g. should not go to work, school, out of home day care, church or other public areas), and following infection control guidelines for the home or residential setting (link) if not admitted to hospital for care.

[3]Persons need not limit interactions outside of home (e.g., need not be excluded from work, school, out of home day care, church or other public areas).

[4]Discontinuation of isolation precautions for patients who have not met the case definition 6 days following onset of symptoms, but who have persistent fever or respiratory symptoms should be done only after consultation with local public health authorities and the evaluating clinician. Factors that might be considered include the nature of the potential exposure to SARS, nature of contact with others in the residential or work setting, and evidence for an alternative diagnosis.

http://www.cdc.gov/ncidod/sars/exposuremanagementframe.htm