SARS

What flight attendants need to know

Severe acute respiratory syndrome (SARS) is a serious respiratory disease that can be spread throughout the world by global air travel. Flight attendants should be aware of the potential for exposure to this disease, and remain vigilant about their health. If any flu-like symptoms (fever greater than 100.4°F [>38.0°C] accompanied by a cough and/or difficulty breathing) develop, you should immediately contact your primary care physician or an infectious disease specialist, and seek emergency care if needed. If you experience suspicious symptoms and would like further information or assistance, contact your AFA Employee Assistance Program representative.

Maximizing the airflow to the cabin can reduce your risk of exposure to airborne viruses or bacteria. Encourage your airline and pilots to turn up the air packs to "high" whenever possible. Most airplanes use about 50% re-circulated air, which should first be passed through high efficiency filters to prevent germs from being re-circulated throughout the cabin. These filters should be replaced at least as regularly as the manufacturers recommend. Right now, there are no real air quality standards for airplane cabins, and the airlines often reduce airflow to save fuel and lengthen the time between filter replacements. Crew and passengers need to speak up.

The latest, most complete information on SARS is available from the World Health Organization (WHO). The WHO recommends that the following in-flight precautions and measures should be taken:

**Personal hygiene**

All passengers and crews should observe good personal hygiene. Wash hands frequently, particularly before eating. If passengers or crew cough or sneeze while onboard, they should cover their mouth and nose, and wash their hands afterwards.

**Face masks**

Current evidence indicates that a person infected with SARS is not infectious to others unless s/he has symptoms. Therefore, WHO does not recommend the use of masks by asymptomatic passengers or crew. However, WHO recommends that passengers or crew presenting with symptoms compatible with SARS during a flight from an area with recent local transmission:

1) wear a protective face mask* ;
2) be isolated, as far as possible, from other passengers; and
3) be given access to a toilet cordoned off for their exclusive use.

WHO also recommends that the designated crew member(s) caring for a person with symptoms compatible with SARS wear a protective face mask*, gloves and eye protection (e.g. tight-fitting goggles or face shield).

* N/R/P 95/99/100 or FFP 2/3 or an equivalent national manufacturing standard (NIOSH (N,R,P 95,99,100) or European CE EN149:2001(FFP 2,3) and EN143:2000 (P2) or comparable national/regional standards applicable to the country of manufacture.
**AFA Activity and Hot Topics**

**What is AFA doing?**

AFA formally requested that the Federal Aviation Administration issue an emergency order requiring the airlines to:

1. Provide non-latex gloves and appropriate masks to flight attendants, at least on trips to, from, and within areas that are at increased risk. Allow flight attendants to choose whether or not they wear these gloves/masks. At the very least, allow flight attendants to wear their own gloves/masks, without discipline;

2. Ensure that aircraft are equipped with proper and sufficient hand washing materials, and emphasize the importance of regular and thorough hand washing, and not touching one's face, to crew and passengers; and

3. Develop, implement, and enforce passenger-screening as recommended by the WHO, the U.S. Centers for Disease Control and Prevention (CDC) or the relevant national health officials; and

4. Tell flight attendants what steps to take if a passenger shows symptoms.

**Why gloves and masks?**

Reports indicate that SARS can be spread in the following two ways:

1. Inhaling infected droplets that are airborne; and

2. Touching infected objects (such as a cup, meal tray, or seatback) and then transferring the infectious agents by touching your mouth or eyes. It is very important that you wash your hands thoroughly and regularly.

If hot running water is not available, then an alcohol-based hand rub is apparently sufficient. Whether or not you are wearing gloves, do not touch your eyes, nose, ears, or mouth, unless you have thoroughly washed your hands. If you touch an infected surface with your gloved hand, and then touch your face, you still run the risk of infection. Gloves do not replace good hand washing; they simply protect open cuts on the hands, and remind the wearer not to touch their face.

**What if my airline doesn't provide gloves and masks?**

You can reduce the risk of disease transmission by washing your hands regularly and thoroughly, and not touching your face.

**What else do I need to know?**

The CDC is recommending that flight attendants essentially assume the role of a caregiver by isolating sick passengers, as necessary. Increased contact increases the risk of disease transmission. Find out what your airline's policy is. If your airline requires you to assume this responsibility, then it is especially important that you are provided with appropriate protective equipment, including goggles, gloves, and masks (for the ill passenger and/or yourself.)

**Additional information:**

April 8, 2003: 2nd AFA Letter to FAA

AFA Press Release April 3, 2003: Attendants Demand Protection From SARS

April 2, 2003: 1st AFA Letter to FAA

References to News Articles

New York Times (requires free registration)
Yahoo health page

April 14, 2003 Air Safety Week: Risk of Deadly Respiratory Infection Fuels Fear of Air Travel

More Information

Government

WHO: SARS Situation Updates Archive
WHO: Summary of measures related to international travel
WHO: Western Pacific Region SARS page

CDC: Background Information

CDC: Information for Airline, Airport, and Air Travel Workers
CDC: Travel Advisories & Alerts
CDC: SARS Case Definition
CDC: Questions and Answers: The Spread of SARS
CDC: Fact Sheet for Clinicians: Interpreting SARS Test Results from CDC & Other Public Health Laboratories

Health Canada: Summaries of SARS cases
European Union: SARS Information
Hong Kong: Atypical Pneumonia

U.S. Federal Aviation Administration: Interim Guidance Surrounding Severe Acute Respiratory Syndrome (SARS)

U.S. Occupational Safety & Health Administration: U.S. Occupational Safety & Health Administration: Information Regarding Severe Acute Respiratory Syndrome (SARS)
U.S. Occupational Safety & Health Administration: OSHA Fact Sheet on SARS

Academia

St. Louis University School of Public Health: SARS Information

The New England Journal of Medicine early release articles

The Lancet (requires registration, some articles are free)

SARSReference, Bernd Sebastian Kamps and Christian Hoffmann, editors. An online textbook on SARS, updated often.

Severe acute respiratory syndrome, from Wikipedia, the free encyclopedia.

Selected Reports
Update 3: Announcement of suspected SARS case in southern China; Investigation of source of infection for confirmed case begins tomorrow, WHO, 8 January 2004. "Health authorities in China have today announced a suspected case of SARS in the southern province of Guangdong. The patient, who has been treated under isolation since 31 December, is a 20-year-old woman from Henan Province who works at a restaurant in Guangzhou, the provincial capital city. ... The announcement follows Monday's laboratory confirmation of SARS in a 32-year-old male resident of Guangzhou. ... At present, no epidemiological evidence has linked the confirmed case with the suspected case. The possible source of exposure in both cases is under investigation."

Consensus document on the epidemiology of severe acute respiratory syndrome (SARS), WHO, 17 October 2003. "On 16-17 May 2003, the World Health Organization held the first global meeting on the epidemiology of SARS in Geneva, Switzerland. The objectives of the meeting were to: Produce a WHO consensus document on our current understanding of the epidemiology of SARS as it informs public health practice; Identify gaps in our knowledge for the planning of additional epidemiological studies if required."

Update: SARS Coronavirus Infection in Singapore Patient, CDC, 18 September 2003. "Results of laboratory testing at the Centers for Disease Control and Prevention (CDC) have provided additional evidence that a 27-year-old patient in Singapore was infected with SARS-associated coronavirus (SARS-CoV). CDC tested serum, respiratory, and stool specimens from the Singapore patient, who was suspected of having SARS. Test results obtained by CDC were consistent with laboratory findings previously reported by Singapore health officials. Taken together, these results indicate that the patient was infected with SARS-CoV."

SARS treatment: who will lead the way forward? (Registration required), Marilynn Larkin, Lancet Infectious Diseases Vol. 3, 1 July 2003. "At time of press, severe acute respiratory syndrome (SARS) seems to be waning, and so the time is right 'for a consensus meeting to review our treatment experiences and decide with industry, public-health officials, academia, and others the best strategy for moving forward...’"

Assessment of In-Flight Transmission of SARS - Results of Contact Tracing, Canada, Health Canada 15 June 2003. "At present, epidemiologic evidence indicates that SARS is transmitted during close contact with an infected person through respiratory secretions, although other routes of transmission are being considered. Given this mode of transmission, there is concern that SARS may be transmitted during air travel. This report provides an overview of the surveillance and policy measures that Health Canada has implemented to address this concern as well as the initial results of passenger contact tracing."

Update: Severe Acute Respiratory Syndrome --- Toronto, Canada, 2003, MMWR 13 June 2003, 52(23); 547-550. "The findings from this investigation underscore the importance of controlling health-care--associated SARS transmission and highlight the difficulty in determining when expanded precautions for SARS no longer are necessary. ... Transient carriage of pathogens on the hands of HCWs [health care workers] is the most common form of transmission for several nosocomial infections, and both direct contact and droplet spread appear to be major modes for transmitting SARS-CoV (3). HCWs should be directed to use gloves appropriately (e.g., change gloves after every patient contact and avoid their use outside a patient's room) and to pay scrupulous attention to hand hygiene before putting on and after removing gloves ... The findings from the Toronto investigation indicate that continued transmission of SARS can occur among patients and visitors during a period of apparent HCW adherence to expanded infection-control precautions for SARS. Maintaining a high level of suspicion for SARS on the part of health-care providers and infection-control staff is critical, particularly after a decline in reported SARS cases. The prevention of health-care--associated SARS infections must involve HCWs, patients, visitors, and the community."

Severe acute respiratory syndrome (SARS): Status of the outbreak and lessons for the immediate future, WHO 20 May 2003. "SARS is the first severe and readily transmissible new disease to emerge in the 21st century. Though much about the disease remains poorly understood and frankly puzzling, SARS has shown a clear capacity for spread along the routes of international air travel. At present, the outbreaks of greatest concern are concentrated in transportation hubs or spreading in densely populated areas. WHO regards every country with an international airport, or bordering an area having recent local transmission, as at potential risk of an outbreak."

Update 71 - Status of diagnostic tests, training course in China, WHO 2 June 2003. "The development of commercial diagnostic tests for SARS has progressed more slowly than initially
years and 43·3% (35·2-52·4) for patients aged 60 years or older … The time between onset of
be 6·4 days … The estimated case fatality rate was 13·2% (9·8-16·8) for patients younger than 60
the epidemiology of SARS in Hong Kong … The mean incubation period of the disease is estimated to
interventions in the continuing epidemic of severe acute respiratory syndrome (SARS). We assessed
authorities worldwide, especially in the Asia Pacific region, are seeking effective public-health
Kong
Epidemiological determinants of spread of causal agent of severe acute respiratory syndrome in Hong
SARS Multi-country Outbreaks
Cluster of Severe Acute Respiratory Syndrome Cases Among Protected Health-Care Workers ---
Toronto, Canada, April 2003, MMWR 16 May 2003, 52(19); 433-436. "Infections among health-care
workers (HCWs) have been a common feature of severe acute respiratory syndrome (SARS) since its
emergence. The majority of these infections have occurred in locations where infection-control
precautions either had not been instituted or had been instituted but were not followed. Recommended
infection-control precautions include the use of negative-pressure isolation rooms
where available; N95 or higher level of respiratory protection; gloves, gowns, and eye protection; and
careful hand hygiene. This report summarizes a cluster of SARS cases among HCWs in a hospital that
occurred despite apparent compliance with recommended infection-control precautions."

Lung pathology of fatal severe acute respiratory syndrome, (Registration required), John M Nicholls,
et. al., Lancet online 16 May 2003. "Post-mortem tissue samples from six patients who died from
SARS in February and March, 2003, and an open lung biopsy from one of these patients were studied
by histology and virology... The case definition of SARS should acknowledge the range of lung
pathology associated with this disease.”

Cluster of Severe Acute Respiratory Syndrome Cases Among Protected Health-Care Workers ---
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workers (HCWs) have been a common feature of severe acute respiratory syndrome (SARS) since its
emergence. The majority of these infections have occurred in locations where infection-control
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where available; N95 or higher level of respiratory protection; gloves, gowns, and eye protection; and
careful hand hygiene. This report summarizes a cluster of SARS cases among HCWs in a hospital that
occurred despite apparent compliance with recommended infection-control precautions."

SARS Articles from The New England Journal of Medicine, 15 May 2003. A Novel Coronavirus
Associated with SARS, Identification of a Novel Coronavirus in SARS, A Cluster of Cases of SARS in
Hong Kong, A Major Outbreak of SARS in Hong Kong, The First Cases of SARS in Canada, The Use of Corticosteroids in SARS, SARS in Northern Vietnam

E. CMAJ 2003 May 13; 16(10). “The dramatic outbreak of severe acute respiratory syndrome (SARS)
has led to the use of high-dose intravenous and oral ribavirin in patients affected with this disorder…”

Clinical progression and viral load in a community outbreak of coronavirus-associated SARS
pneumonia: a prospective study (Registration required), J S M Peiris, et. al., Lancet online 9 May
2003. "We investigated the temporal progression of the clinical, radiological, and virological changes
in a community outbreak of severe acute respiratory syndrome (SARS)"

SARS Multi-country Outbreaks, WHO Western Pacific Regional Office, SARS Preparedness and
Response Team, updated 08 May 2003.

Epidemiological determinants of spread of causal agent of severe acute respiratory syndrome in Hong
Kong (Registration required), Christl A Donnelly, et. al., Lancet online 7 May 2003. “Health
authorities worldwide, especially in the Asia Pacific region, are seeking effective public-health
interventions in the continuing epidemic of severe acute respiratory syndrome (SARS). We assessed
the epidemiology of SARS in Hong Kong … The mean incubation period of the disease is estimated to
be 6-4 days ... The estimated case fatality rate was 13·2% (9·8-16·8) for patients younger than 60
years and 43·3% (35·2-52·4) for patients aged 60 years or older ... The time between onset of
symptoms and admission to hospital did not alter outcome, but shorter intervals will be important to the wider population by restricting the infectious period before patients are placed in quarantine.”

First data on stability and resistance of SARS coronavirus compiled by members of WHO laboratory network, WHO 4 May 2003. “[P]rovides the first compilation of data on resistance of the SARS Coronavirus against environmental factors and disinfectants.”

Prospective study of the clinical progression and viral load of SARS associated coronavirus pneumonia in a community outbreak, WHO (no publication date available). “A community outbreak of severe acute respiratory distress syndrome (SARS) with epidemiological linkage was reported. The temporal progression of the clinical, radiological, and virological changes was investigated ... A prospective study ... of 75 patients managed with a standardized treatment protocol of the Hospital Authority, Hong Kong Special Administrative Region ... was performed over a 3 week period. The pattern of clinical disease, viral load, the risk factors for a poor clinical outcome and the usefulness of virological diagnostic methods was presented and analyzed.”

Effectiveness of precautions against droplets and contact in prevention of nosocomial transmission of severe acute respiratory syndrome (SARS), (Registration required), W H Seto, et. al., Lancet 3 May 2003; 361: 1519-20. “We did a case-control study in five Hong Kong hospitals... All participants were surveyed about use of mask, gloves, gowns, and hand-washing ... 69 staff who reported use of all four measures were not infected, whereas all infected staff had omitted at least one measure ... Staff who used masks, gowns, and handwashing were less likely to develop SARS than those who did not use them, but the association for gloves was not significant ... The surgical and N95 masks were both effective in significantly reducing the risk of infection ...”

Severe Acute Respiratory Syndrome (SARS) in China and status of scientific and clinical knowledge, 14 April 2003, Weekly Epidemiological Record 78, p. 129. “Data available to WHO indicate that 96% of persons developing SARS recover spontaneously. Clinical attention is now focused on the 4% who are dying.”

WHO Multicentre Collaborative Networks for Severe Acute Respiratory Syndrome (SARS) diagnosis, 11 April 2003, Weekly Epidemiological Record 78, pp. 121–2. “Three diagnostic tests are now available, but all have limitations as tools for bringing this outbreak quickly under control. The ELISA ... cannot be used to detect cases at an early stage before they have a chance to spread the infection to others. The ... immunofluorescence assay (IFA) ... is a demanding and comparatively slow test that requires the growth of virus in cell culture. The ... polymerase chain reaction (PCR) molecular test ... is useful in the early stages of infection but produces many false-negatives, meaning that many persons who actually carry the virus may not be detected – creating a dangerous sense of false security for a virus that is known to spread easily in close person-to-person contact.”

WHO recommended measures for persons undertaking international travel from areas affected by Severe Acute Respiratory Syndrome (SARS), 4 April 2003, Weekly Epidemiological Record 78, pp. 97–110. “WHO is recommending that airport and port health authorities in affected areas undertake screening of passengers presenting for international travel. In addition, WHO is issuing guidance on the management of possible cases on international flights, disinfection of aircraft carrying suspect cases and surveillance of persons who have been in contact with suspect cases while undertaking international travel.”

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