Interim Guidance for General Practitioners on the Investigation and Management of Severe Acute Respiratory Syndrome (SARS) Cases (including community infection control guidance)

Updated on February 13th 2004

This guidance is based on the Interim Guidelines for Health Care Professionals on the National Disease Surveillance Centre (NDSC) Website and practitioners are directed to the NDSC website at www.ndsc.ie for further information if required. The guidance in this document, including case definitions is regularly updated and may change.

1. SARS Case Definitions
Case definitions are available in Annex A (attached) OR at http://www.ndsc.ie/DiseaseTopicsA-Z/SevereAcuteRespiratorySyndrome/HealthcareProfessionals/d840.PDF

2. Assessing and Managing a Potential Case of SARS

1. General Practitioners (GPs) should make an initial assessment and provisionally classify the patient according to the case definitions outlined in Annex A.

2. It is important that clinicians (GPs) obtain a detailed travel history from patients with symptoms and signs consistent with clinical SARS (as outlined in the case definitions-Annex A) as well as ascertain whether other family members and/or close contacts (particularly within the hospital setting) have had a similar illness within the 10 days prior to the patient’s onset of illness

3. Patients should initially be assessed at home, if at all possible, rather than in the practice setting.

4. Standard precautions should be taken when examining or taking samples from a potential SARS case

5. When seeing a patient at home or in the surgery take appropriate precautions to prevent the spread of the infection, i.e. wear appropriate personal protective equipment and wash hands carefully following the consultation. Hand hygiene is the most important measure in preventing the spread of infection with SARS.

6. Personal protective equipment consists of the following:
   a. Disposable gloves
   b. Long-sleeved, water-repellent disposable gown
   c. Eye protection (goggles)
   d. Close fitting mask/respirator that meets or exceeds the European EN149:2001 FFP2 standards. If a mask/respirator is not available a surgical face mask should be worn, which will provide some level of respiratory protection.
e. Used personal protective equipment must be carefully disposed of as clinical waste.

f. A mask designed for respiratory protection that complies with recognised standards (e.g. EN149 or N95) is termed a respirator. Respirators in common use are non-powered.

g. Specific attention should be given to appropriate donning and removal of personal protective equipment. In particular personal protective equipment must be removed in a way that minimises the risk of contaminating the wearer. Please see Section 5- Community Infection Control Measures for details on hand hygiene, the use of personal protective equipment and other aspects of infection control.

7. If the patient fits the current case definition of possible SARS they will have a severe illness and require hospitalisation.

8. Patients with possible SARS should be reported by telephone to the local Director of Public Health (Medical Officer of Health) who will then inform the NDSC.

If the patient’s illness is mild/resolving/or they do not require hospitalisation and **they do not fit the case definition for SARS** and should be managed at home in the usual way for any respiratory infection.

2.1 **If the patient rings in advance:**
- Until initial assessment is complete, care should be taken to prevent contact between the patient and other members of the public.
- The initial clinical assessment, including temperature monitoring, of a patient presenting on the telephone with symptoms of SARS and a relevant travel history may, depending on the individual circumstances, be carried out either in the patient’s home, at the GP surgery if **appropriate isolation facilities are available**, or the patient should be referred directly to hospital if deemed appropriate by the practitioner.
- If referring directly to hospital, the general practitioner should inform the **hospital in advance** that the patient is being referred so that appropriate isolation arrangements can be put in place at the receiving hospital.

2.2 **If the Patient Presents at the GP Surgery**
- If a patient arrives into the surgery and goes to reception with SARS-like history and symptoms, they should be isolated immediately and managed as clinically appropriate. Receptionists and other practice staff should be aware of this advice.

- All patients meeting the possible case definition (i.e. symptoms, including temperature 38°C and relevant travel history or contact with SARS case) **should be referred to hospital for further investigation**, i.e. chest x-ray and relevant blood and microbiology tests as set out in NDSC guidance at [http://www.ndsc.ie/DiseaseTopicsA-Z/SevereAcuteRespiratorySyndrome/HealthcareProfessionals/d840.PDF](http://www.ndsc.ie/DiseaseTopicsA-Z/SevereAcuteRespiratorySyndrome/HealthcareProfessionals/d840.PDF).
- GPs should inform the hospital in advance that the patient is being referred so that appropriate isolation arrangements can be put in place at the receiving hospital.

3. Transport

- Symptomatic patients attending, and being transported to and from general practice, hospital or other health-care facility should wear a surgical mask, if tolerated to prevent the dissemination of respiratory droplets.


4. Management of Possible SARS cases who are discharged following Hospital Assessment

Detailed advice on clinical monitoring and infection control precautions for possible, SARS cases that are deemed fit for management at home following hospital assessment, is also available at http://www.ndsc.ie/DiseaseTopicsA-Z/SevereAcuteRespiratorySyndrome/HealthcareProfessionals/d840.PDF

5. Community Infection Control Measures

5.1 Infection Control Precautions for Healthcare Personnel

Healthcare personnel include GPs, community nurses, primary care teams, ambulance staff, physiotherapists and other professional support staff.

Hand Hygiene

Hand hygiene is the most important measure in preventing the spread of SARS and should be performed before and after contact with every patient. If hands are visibly soiled they should be carefully washed with soap and running water and thoroughly dried. If hands are not visibly soiled they may be washed with soap and water or decontaminated using an alcohol handrub/gel. Alcohol handrubs/gel are effective for hand hygiene and should be used after removal of gloves or between changes of gloves.

Particular attention should be given to hand hygiene in the following situations:

- After contact with body fluids, especially urine, faeces, oral secretions and sputum
After contact with items known or considered likely to be contaminated with body fluids, especially respiratory secretions (e.g. oxygen tubing, masks, used tissues) 
Immediately after removing gloves and other protective equipment.

Gloves
Clean, non-sterile medical quality gloves of adequate size to wearer should be worn for all possible SARS patients. These should be put on before entering the patient’s room. If a change of gloves is required within the room, ensure hands are decontaminated (soap & water or alcohol gel) prior to application of replacement gloves. Gloves must never be washed or reused. Gloves should be used as an additional measure, not as a substitute for hand hygiene.

Gowns
Long sleeved (water repellent) gowns should be worn by all healthcare personnel entering the room of a possible SARS patient. Gowns should be removed before leaving the patient’s house.

Eye protection
Eye protection (goggles) should be worn when providing direct patient care to protect the eyes from splashes. Prescription eye glasses do not provide adequate protection from respiratory droplets.

Respiratory Protection
Healthcare workers should use a mask/respirator to prevent the inhalation of virus particles from the air. The mask/respirator should meet or exceed the European EN149:2001 FFP2 standards. If a mask/respirator is not available a standard surgical face mask should be worn, as this provides some level of protection against respiratory droplets. Correct fitting of the mask/respirator is critical to prevent inhalation of virus particles and the manufacturers instructions should be carefully followed.

- The mask/respirator must seal tightly to the face or air will enter from the sides.
- A good fit can only be achieved if the mask/respirator seals against the skin.
- Beards, long moustaches and stubble may cause leaks around the mask/respirator.
- The mask/respirator should fit snugly over the face, with the metal strip at the top.
- Position the strings to keep the mask firmly in place over the nose, mouth and chin.
- Mould the metallic strip to the bridge of the nose with two hands. NB some mask/respirators do not require moulding.
- Do not touch the mask/respirator again until removal.
To check that the mask/respirator is correctly fitted the wearer should take one or two forceful inspirations.

This should cause the mask/respirator to collapse slightly and the wearer should not feel any air leaks around the side of the mask/respirator.

The mask/respirator should only be removed in a safe area, (e.g. just outside the patient’s room) away from the patient.

It may be necessary to change the mask/respirator if breathing becomes difficult, the mask/respirator becomes damaged or distorted or contaminated by body fluids, or if a proper face fit cannot be maintained.

Masks or respirators should be disposed of immediately after use as clinical waste.

**Wearing a mask/respirator minimises the risk of SARS, however, it is not a guarantee of protection against SARS, and other Infection Control procedures, particularly hand washing, are also very important.**

**Putting on personal protective equipment**

Put on personal protective equipment before entering the patient’s room (i.e. in hallway or corridor)

1. Put on mask/respirator first followed by eye protection
2. Put on gown (tie and ensure back is covered) followed by gloves (cover cuffs of gown with gloves)

**Removing personal protective equipment**

Remove personal protective equipment immediately after leaving the patient’s room.

- Remove gloves and gown first
  - Use a technique that minimises the risk of touching the outside surfaces of the gown or gloves
  - Order of removal (i.e. gown or gloves first) will depend on the type of gown being used. In most instances removing gloves first will minimise the risk of contamination.
- **Wash/decontaminate hands BEFORE removing mask/respirator and eye protection**
  - Do not touch mask/respirator, eye protection or any part of face with bare hands that have not been cleaned
- Remove eye protection before removing mask/respirator
- Carefully remove mask/respirator to minimise the risk of generating aerosols, using a method that avoids touching the front surface of the mask/respirator, as the front surface is the area most likely to be contaminated.
  - The mask/respirator may be removed by one of the following two methods, depending on the brand of mask/respirator being used:
    - Slip fingers under straps at back of head and lift straps over top of head to remove mask/respirator.
    - Holding one corner of the mask/respirator carefully break the straps on one side, at the point where they are attached to the mask/respirator.
• Dispose of gloves, gown and mask/respirator as clinical waste *(yellow bag)*

Wash hands again once all protective attire is removed.

### 5.2 Infection Control Precautions for Patients in the Community

*Masks*: patients with SARS should not wear mask/respirators (EN149:2001 FFP2), as the mask/respirators place a physiological stress on the respiratory system and can worsen respiratory symptoms. Regular surgical masks are more appropriate for this purpose and GPs should distribute surgical masks to households where SARS cases are being managed.

*Contact with Others*. Possible SARS patients should limit interactions outside the home and **should not go to work, school, out-of-home childcare, or other public areas until ten days after resolution of fever and respiratory symptoms**. During this time, infection control precautions should be used, as described below, to minimise the potential for transmission.

*Respiratory Precautions*. Each patient with SARS should be advised to cover his or her mouth and nose with a paper tissue when coughing or sneezing and dispose safely into the toilet/or plastic bag tied off at the top prior to placing in the bin. Procedures that produce respiratory aerosols may increase the risk of transmission of SARS. Therefore procedures such as chest physiotherapy, suctioning of respiratory secretions and nebulised therapy should not be carried out in the home setting and should only be carried out under airborne isolation precautions in hospital.

If possible, a SARS patient should wear a surgical mask when in the same room as other family members and restrict contact somewhat (especially with the very old / young/ vulnerable) to prevent spread of infectious droplets. When a SARS patient is unable to wear a surgical mask, household members should wear surgical masks when in close contact with the patient.
**Hand Hygiene.** Use of disposable gloves should be considered for any direct contact with body fluids of a SARS patient. However, gloves are not intended to replace proper hand hygiene. Immediately after activities involving contact with body fluids, gloves should be removed and discarded and hands should be washed thoroughly with soap and warm water for at least 10 seconds and dried fully afterwards. *Gloves must never be washed or reused.*

**Environmental Hygiene.**

- Environmental surfaces soiled by body fluids should be cleaned with a household disinfectant according to manufacturer’s instructions (e.g. 1 cap full of household bleach diluted in 4 pints/2 litres of water); gloves should be worn.
- Sharing of eating utensils, towels, and bedding between SARS patients and others should be avoided, although others can use such items after routine cleaning (e.g. washing with soap and hot water or dishwasher or washing machine using a hot setting).
- Laundry should be washed at the highest temperature recommended for the fabric.
- Household waste soiled with body fluids of SARS patients, including facial tissues and surgical masks, may be discarded as normal waste. Waste should be placed in a plastic bag, which should be securely tied or sealed.
- All members of a household with a SARS patient should carefully follow recommendations for hand hygiene (i.e. frequent hand washing with soap and water, preferably using liquid soap), particularly after contact with body fluids (e.g. respiratory secretions, urine, or faeces).

**Seeking Medical Advice.** Household members or other close contacts of SARS patients who develop fever or respiratory symptoms should seek urgent medical advice and contact their local public health department. When possible, in advance of the evaluation, healthcare providers should be informed that the individual is a close contact of a SARS patient.
For further information on contact tracing and management of contacts, see http://www.ndsc.ie/DiseaseTopicsA-Z/SevereAcuteRespiratorySyndrome/HealthcareProfessionals/d840.PDF.

Note: As of 28/03/03 SARS is a notifiable disease, under Irish infectious diseases legislation. All possible, probable and confirmed cases of SARS (case definitions in inter-epidemic period) must be notified to the local Director of Public Health as soon as possible.

Sources: CDC Guidance, HPA (UK) Guidance, WHO Guidance, Health Canada Guidance
ANNEX A: CASE DEFINITIONS FOR SARS

Severe Acute Respiratory Syndrome (SARS-associated coronavirus)

The following case definitions (dated 23 January 2004) are based on EU and WHO definitions and apply to the surveillance of SARS in the absence of known transmission (person-to-person) worldwide. These definitions will change in the event of the re-emergence of SARS. Please consult NDSC website at http://www.ndsc.ie

Clinical case definition
The following case definition of SARS is consistent with the WHO clinical case definition and has been developed for public health purposes.

The respiratory illness usually will be severe enough to warrant hospitalisation and include a history of:

Fever of $\geq 38^\circ\text{C}$ (documented or reported)

AND

One or more symptoms of lower respiratory tract illness (cough, difficulty breathing, shortness of breath)

AND

Radiographic evidence of lung infiltrates consistent with pneumonia or respiratory distress syndrome (RDS) or autopsy findings consistent with the pathology of pneumonia or RDS without an identifiable cause.

AND

No alternative diagnosis to fully explain the illness.

It is important that clinicians obtain a detailed travel history from patients with symptoms and signs consistent with clinical SARS as well as ascertain whether other family members and/or close contacts (particularly within the hospital setting) have had a similar illness within the 10 days prior to the patient’s onset of illness.
Case classification

Possible case:

a) **Individual case**

A person fulfilling the clinical case definition of SARS

AND

within ten days of onset of illness, a history of travel to an area classified by WHO as a potential zone of re-emergence of SARS (this includes an area identified as the source of the November 2002 outbreak and/or an area with increased likelihood of animal to human transmission of SARS-CoV infection)


b) **Health care worker (HCW) cluster**

Two or more HCWs in the same health care facility fulfilling the clinical case definition of SARS (see above) and with onset of illness within the same 10-day period. The definition of the health care unit in which the cluster occurs will depend on the local situation. Unit size may range from an entire health care facility if small, to a single department or ward of a large tertiary hospital.

c) **Other hospital cluster**

Hospital acquired illness in three or more persons (health care workers and/or other hospital staff and/or patients and/or visitors) in (or linked to) the same health care unit fulfilling the clinical case definition of SARS (see above) and with onset of illness within the same 10-day period.

In order to detect a cluster of SARS in the healthcare setting, clinicians are asked to notify cases of unexplained pneumonia in healthcare workers to the Medical Officer of Health (Director of Public Health). All healthcare workers should be asked to inform the Occupational Health Physician/Department if they develop signs of severe pneumonia that requires hospital admission.

Probable case:

(a) An individual with symptoms and signs consistent with clinical SARS (possible case) and with preliminary laboratory evidence of SARS-CoV based on the following:
Either

Single positive antibody test for SARS-CoV

Or

Positive PCR for SARS-CoV on a single clinical specimen and assay

(b) Laboratory acquired probable case
An ill person who has developed the symptoms reported below in the 10 days following working with or having been in contact with a laboratory activity involved with SARS-CoV manipulation:

- Fever (>38°C)
- One or more respiratory symptoms including cough, difficulty breathing, shortness of breath
  And
- Radiographic evidence of lung infiltrates consistent with pneumonia or respiratory distress syndrome.

This person should be considered as a SARS probable case and managed accordingly until the contrary is proven.

Confirmed case:

An individual with symptoms and signs consistent with clinical SARS (possible case) and with laboratory evidence of SARS-CoV infection based on one or more of the following:

a) PCR positive for SARS-CoV using a validated method from:

At least two different clinical specimens (e.g. nasopharyngeal and stool)

Or

The same clinical specimen collected on two or more occasions during the course of the illness (e.g. sequential nasopharyngeal aspirates)

Or

Two different assays or repeat PCR using a new RNA extract from the original clinical sample on each occasion of testing.

b) Seroconversion by ELISA or IFA
Negative antibody test on acute serum followed by positive antibody test on convalescent phase serum tested in parallel

Or

Four fold or greater rise in antibody titre between acute and convalescent phase sera tested in parallel.

c) Virus isolation

Isolation in cell culture of SARS-CoV from any specimen and PCR confirmation using a validated method.

Testing should only be undertaken in a national or regional reference laboratory as per WHO recommendations.