Case definition and guidance on reporting, and management of SARS patients in the UK in the inter-epidemic period

1. Introduction

The Severe Acute Respiratory Syndrome (SARS) was first recognised in March 2003 but probably had its origins in the Guangdong Province, China in November 2002. Between March and July 2003, over 8000 probable cases of SARS were reported from around 30 countries. A novel coronavirus known as the 'SARS coronavirus' (SARS CoV) has been identified as the causes of SARS and preliminary animal studies have isolated the SARS CoV in wild animals native to the Guangdong Province and other parts of China.

On 5 July, the World Health Organization (WHO) announced that the last human chain of transmission had been broken. While we have learnt much about the disease, our understanding of SARS remains limited and its potential to re-emerge has not been ruled out. As a consequence, WHO has asked for all countries to remain vigilant and maintain their capacity to detect and respond to the re-emergence of SARS should it occur.

This document provides interim case definitions and guidance for reporting and management of SARS in the United Kingdom during the inter-epidemic period. Case definitions and public health guidance will need to be reviewed and regularly updated should an outbreak of SARS be declared by WHO.

Amendments to the Case Definitions - 31 October 2003
1. Laboratory exposure
On 8 September, WHO confirmed that a 27-year-old researcher had been infected with the SARS coronavirus in a Singapore laboratory following accidental contamination. No evidence of further transmission was found. This case marked

the first case of SARS to be confirmed since the last known case in the world was detected and isolated in Taiwan, China, on 15 June. The case highlights the need for continued surveillance and vigilance for SARS particularly in areas that were affected by SARS, but also in all institutions that have retained virus isolates and/or diagnostic specimens from SARS patients. The UK case definitions have been amended to reflect the need to promptly identify possible SARS cases among laboratory workers.

2. Travel history - Definition of 'potential area of re-emergence of SARS'

For the purpose of surveillance for SARS in the UK, areas described by WHO as 'potential zones or re-emergence of SARS' are considered to comprise the whole of mainland China, especially Guangdong Province, and Hong Kong (SAR). Thus an individual meeting the clinical case definition of SARS and with recent travel history to China will be defined as a possible SARS case.

It is possible, however, that clinicians may consider SARS with a differential diagnosis in patients with symptoms and signs consistent with SARS and a travel history to a previously affected area, and in whom no other cause to explain their illness has been found. For surveillance purposes, however, such patients would not be classified as 'possible' SARS. Testing for SARS CoV in these patients would be considered on a case-by-case basis and after discussion with the Enteric, Respiratory and Neurological Virus Laboratory.

2. Objectives of SARS surveillance

There have been sporadic cases of SARS reported since the first global outbreaks however, the risk of SARS in the UK remains very low. Ongoing surveillance for possible SARS in the UK aims to:

- promptly identify and investigate patients with possible SARS
- alert local, regional and national public health authorities
- take appropriate infection control and public health measures and
- should a confirmed case of SARS be detected
  report the case to WHO
  reassess case definitions and guidelines for management and public health response to SARS at local and national levels

3. Surveillance and clinical case definitions

The updated UK case definitions focus on the identification of persons with severe unexplained pneumonia either returning from a country with previous documented

transmission of SARS or who are part of a cluster within a health care facility in the UK. The UK definitions are in line with proposed WHO definitions

3.1 Possible Case

a) Individual case
A person fulfilling the clinical case definition of SARS (see below)

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 currently includes the whole of mainland China, especially Guangdong Province, and Hong Kong SAR).

OR

Within ten days of onset of illness, a history of exposure to laboratories or institutes which have retained SARS virus isolates and/or diagnostic specimens from SARS patients.

b) Health Care Worker (HCW) cluster

Two or more HCWs in the same health care facility fulfilling the clinical definition of SARS (see below) and with onset of illness within the same ten day period.

c) Other hospital cluster

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

Clinical case definition

An update of the clinical description of SARS is available from the WHO website. The following clinical case definition of SARS is consistent with the WHO clinical case definition and has been developed for public health purposes.

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

Fever of ≥ 38°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.

3.2 Probable Case

An individual with symptoms and signs consistent with clinical SARS (Possible case) and with preliminary laboratory evidence of SARS CoV infection 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

3.3 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 (*eg* nasopharyngeal and stool) **OR**

The same clinical specimen collected on two or more occasions during the course of the illness (eg 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 the acute and convalescent phase sera tested in parallel.

3.4 Discarded Case

A case is discarded when

an alternative laboratory diagnosis is made which can fully explain the illness **OR**

the patient has a negative convalescent serology result
(NB a negative PCR result does not result in the declassification of a possible case)

4. Management of cases

4.1 Management of a possible case

Patients who fit the case definition of possible SARS will have a severe illness and will require hospitalisation. Such patients should be nursed separately from other patients (at least in a side room).

In general, the precautions to control the spread of SARS in health care settings should be those general infection control measures taken against other respiratory infections that spread from person-to-person, of which tuberculosis and influenza are useful examples. Hospital staff should therefore refer to their infection control manuals and follow advice from their hospital infection control teams.

All healthcare workers who come into close contact with, examine or take samples from a potential SARS case should wear gloves, and a respirator conforming to at least European standard EN149:2001 FFP3. If a respirator is not immediately available, a surgical face mask should be worn. Healthcare workers include community/ primary care teams, hospital clinical teams, ambulance staff, physiotherapists and other professional support staff, porters and domestic staff.

Patients should wear a mask while symptomatic whether in hospital or in transit. If the patient is unable to wear a mask, carers should wear a mask when in close contact. Patients should be advised to cough/sneeze into a paper tissue and dispose of this safely into the toilet/or a plastic bag tied off at the top, prior to placing it in a bin. Hands of cases should be frequently washed particularly after contact with

body fluids (*eg* respiratory secretions, urine or faeces). Hands of close contacts should be thoroughly washed before and after contact with a patient and after activities that are likely to cause contamination.

Patients should remain isolated while they are symptomatic or until an alternative diagnosis is made. Patients with possible SARS should be discharge once their symptoms have resolved and they have been afebrile for 48 hours.

4.2 Management of a probable or confirmed case

The patient should be treated in single room, preferably in a negative pressure room. Full infection control precautions should be instituted in the care of the patient. In addition to the above (Section 4.1), clinicians should refer to the HPA guidance available. Patients should remain isolated while symptomatic. Patients with probable and confirmed SARS should not be discharged until they are asymptomatic and afebrile for 48 hours. Once home, patient to keep contact with others to a minimum for a further seven days.

4.3 Reporting and follow-up procedures

Potential cases should be reported using the reporting form. On receipt of an initial report (either by fax, email, or phone), the SARS team at CDSC will log the call and add it to the SARS database. They will classify the patient according to the UK SARS case definitions. The case may be reclassified (or discarded) as laboratory findings become available. Reports of possible cases will be faxed or emailed to the regional epidemiologist (RE) on the same day of notification. Follow-up of patients should be initiated by the RE and/or CCDC using the standard form available on the HPA website. Follow-up forms should be faxed or emailed to CDSC at 48 hours and ten days after the date of report and/or once the patient is asymptomatic.

5. Management of close contacts

Close contacts are considered to be family, friends or health care workers who lived with, or who had direct contact with respiratory secretions, body fluids and/or excretions (*eg* faeces) of a symptomatic case. The management of contacts will vary depending on whether the case is a possible, probable or confirmed SARS case. Close contacts remain at risk until ten days after their last contact with a symptomatic case.

5.1 Management of contacts of a possible case

Contacts of a possible case should be given information on SARS. No specific follow-up is needed. Contacts are free to continue with usual activities unless they become unwell. A close contact who develops symptoms of SARS within ten days

of contact with a possible case should phone their GP and seek medical advice. They should inform medical staff of their contact with a possible case.

5.2 Management of contacts of a probable case

A list of close contacts should be generated, recording the date on which they last had contact with the case. Clinicians should liaise with the local CCDC/Health Protection team on follow-up responsibilities.

On day one, clinicians or local Health Protection Team should telephone the contact to assess their health and provide them with information on SARS.

On day ten following last contact with the case the clinician or local Health Protection Team should telephone the contact to assess their health.

Contacts who develop symptoms of SARS should initially be assessed at home by their GP rather than in the practice setting. If the patient meets the clinical case definition for SARS, they should be referred to hospital as 4.1.

If the contact is mildly unwell, they should be managed at home by their GP. While at home, the patient should keep contact with others to a minimum until their symptoms have resolved and they have been afebrile for 48 hours. GPs should contact the patient regularly during the course of the patient's illness.

5.3 Management of contacts of confirmed cases

Voluntary home isolation is recommended for a close contact of a confirmed case of SARS. Such close contact should stay indoors and keep contact with other people to a minimum for a period of ten days from the time of last contact with the case. They should monitor their health for SARS symptoms over this ten day period, and phone their GP if they develop any symptoms. In addition, the GP or local health protection team should telephone the contact daily during ten day incubation period to assess their health.

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