

INTERIM CLINICAL GUIDELINES ON

SEVERE

ACUTE RESPIRATORY SYNDROME
(SARS)

FOR HEALTH FACILITIES IN THE
PHILIPPINES

Department of Health
TECHNICAL WORKING GROUP ON SARS CLINICAL
GUIDELINES

Abridged Version
25 July 2003

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INTERIM CLINICAL GUIDELINES FOR SEVERE ACUTE RESPIRATORY SYNDROME (SARS)

This document contains the abridged version of the interim clinical guidelines for the triage and management of suspect and probable cases of severe acute respiratory syndrome (SARS), and serves to update the guidelines. These guidelines are intended to assist health care providers working in health facilities in the Philippines to quickly identify early cases of SARS, institute promptly appropriate infection control measures, refer to designated SARS hospitals and, for such hospitals, to manage and treat patients adequately and appropriately and to report cases promptly to surveillance units.

Since information on this emerging threat of SARS continues to accrue, these guidelines will evolve and will need to be adapted to the local setting, taking into consideration the level of care and resources available in the health facility. Readers can access the full report at the official website of the Department of Health <http://www.doh.gov.ph/nec/sars> and in the following websites <http://www.psmid.org.ph>, <http://www.pcp.org.ph>, <http://www.phil-chest.org>, <http://www.sarsphilippines.org>, <http://www.inclensea.org>. We will post updates on respective sections of the guideline in the above website addresses as new information arises.

Objectives

With the guidelines, the health care provider will be able to:

1. recognize early a person suspected to have SARS
2. institute early and appropriate infection control measures
3. refer promptly to the SARS referral hospitals

For suspect and probable SARS cases

4. request appropriate diagnostic procedures
5. adequately manage patients and educate contacts
6. report promptly to proper surveillance authorities

Scope

Triage
Diagnosis
Treatment
Infection control

Target users

Health care providers in primary, secondary and tertiary healthcare facilities in the Philippines

Technical Working Group on SARS Clinical Guidelines

In response to the Department of Health's directive for the urgent formulation of clinical guidelines for the management of suspected SARS cases, a group of faculty members and physicians at the University of the Philippines Manila – College of Medicine and the Philippine General Hospital spearheaded the formation of the Technical Working Group. The working group is composed of members of the Sections of Infectious Diseases and Pulmonary Medicine of the UP-PGH Department of Medicine, representatives of the Department of Health (National Epidemiology Center, National Center for Disease Prevention and Control and the Research Institute for Tropical Medicine), Philippine Society for Microbiology and Infectious Diseases, Philippine Hospital Infection Control Society, Philippine College of Chest Physicians and Philippine College of Physicians. The members of the Technical Working Group are:

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EXECUTIVE SUMMARY

1. TRIAGE

The main objective of triage screening is to identify quickly persons with symptoms of SARS and to isolate them promptly. Health care personnel at first points of contact should be trained on SARS screening procedures.

KEY PRINCIPLES

- A. Rapid identification and risk assessment of persons with symptoms of SARS by asking targeted screening questions, which include history of recent travel or close contact with a SARS suspect and history of fever or respiratory symptoms
- B. Immediate isolation of exposed persons in designated areas with proper infection control precautions
- C. Prompt reporting of cases to surveillance units for immediate contact tracing and quarantine measures

2. DIAGNOSIS

The objective of prompt diagnosis is to classify and manage patients appropriately.

KEY PRINCIPLES

- A. SARS is a clinical and epidemiologic diagnosis.
- B. Diagnosis is primarily by exclusion of typical and atypical pathogens of community-acquired pneumonia.
- C. Diagnostic work-up consists of chest radiographs, complete blood counts, pulse oximetry, blood and sputum cultures, acute and convalescent sera with the latter obtained > three weeks after onset of illness.
- D. All SARS diagnostic assays are currently under evaluation.
- E. A negative PCR or negative viral culture does not exclude coronavirus infection.
- F. SARS-CoV antibody assays cannot rule out infection until the convalescent phase of the illness.

3. TREATMENT

The objective of appropriate treatment is to prevent/minimize death and complications.

KEY PRINCIPLES

- A. The most effective definitive therapy for SARS remains unknown.
- B. Optimize supportive care to minimize/prevent death and complications.
- C. Treat for other potential causes of community-acquired pneumonia with appropriate empiric antibiotics for bacterial and atypical pathogens.
- D. There is insufficient evidence on the benefits of antiviral agents (e.g. ribavirin) and immunomodulating therapy (e.g. corticosteroids and interferon). WHO DOES NOT RECOMMEND THEIR ROUTINE USE. Clinicians should use their best judgment in deciding whether to give anti-viral agents and other immunomodulatory therapy.
- E. AVOID aerosol-generating procedures and interventions such as nebulization, chest physiotherapy, bronchoscopy, gastroscopy and non-invasive positive pressure ventilation.
- F. Oseltamivir, pneumococcal and influenza vaccines do not prevent SARS.
- G. SARS patients should be STRICTLY isolated at all times.

4. INFECTION CONTROL

The primary goal of infection control is to minimize and prevent transmission of SARS to health care workers, the family and the public.

KEY PRINCIPLES

- A. Isolation of all SARS cases & avoidance of unnecessary contact
- B. Use of personal protective equipment (PPE) for all in close contact
- C. Strict personal AND hand hygiene
- D. Masking of patient to reduce respiratory spread
- E. Strict adherence to prohibiting visitors

DISEASE BACKGROUND

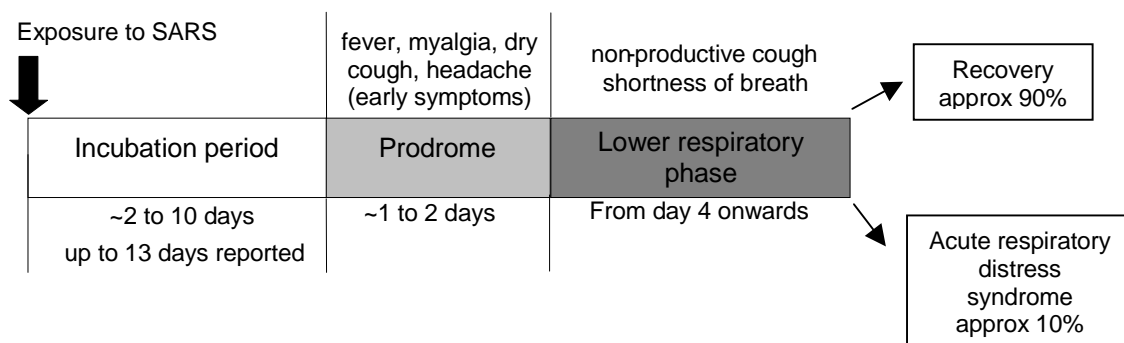
Severe acute respiratory syndrome or SARS is a newly recognized form of atypical pneumonia that has been described in patients in Asia, North America and Europe. The earliest known cases occurred in Guangdong Province, China in November 2002. The WHO issued the global alert on the outbreak on 12 March 2003 and instituted worldwide surveillance. The Philippines reported on 11 April 2003 its first SARS patient, a Caucasian business commuter between Hong Kong and Manila.

Investigations are in full swing to define completely the epidemiology and clinical spectrum of SARS. Current clinical features of SARS and available epidemiologic data on SARS cases supplemented by laboratory tests are the bases for the interim case definitions. These definitions will be reviewed as new information evolves and validated diagnostic tests become widely available.

KEY FEATURES OF SARS

1. Etiology is a novel human SARS coronavirus.
2. Mode of transmission is predominantly through direct contact with droplet secretions.
3. Incubation period is 2-10 days.
4. High fever (> 38°C) is the distinct symptom during the prodromal period. Lower respiratory phase follows in 2-7 days characterized by dry, non-productive cough, difficulty of breathing and hypoxemia. Ten to twenty per cent progress to acute respiratory distress syndrome.
5. Infectivity is highest during the lower respiratory phase.
6. Chest radiographs initially show focal infiltrates, which may progress to generalized patchy interstitial infiltrates involving bilateral and multiple lobes.
7. Lymphopenia is a prominent laboratory finding.
8. Case fatality rate is 9.5%.

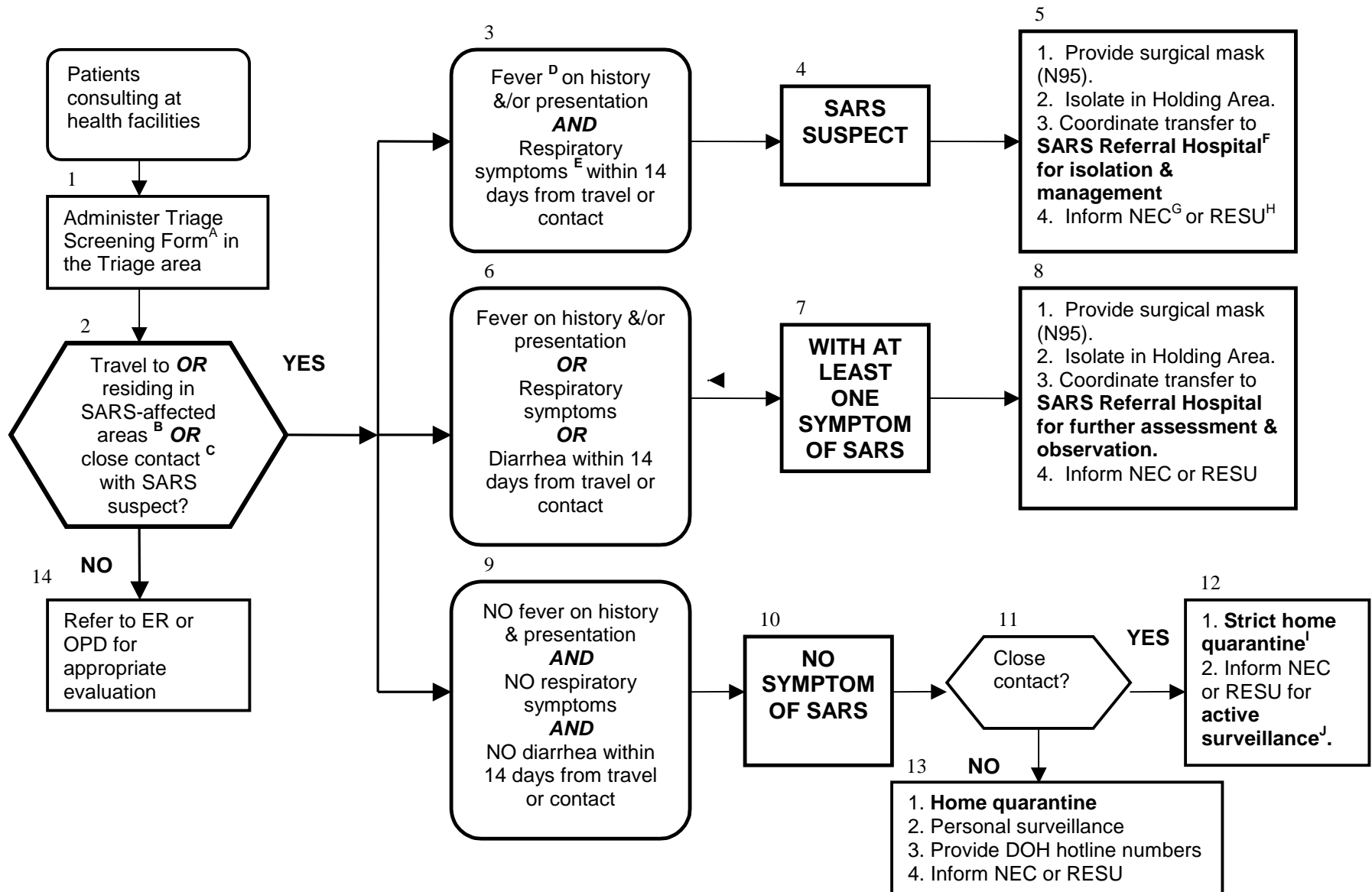
Clinical Spectrum of SARS



Infectivity

None or very low	Low	Very high
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1. TRIAGE PROCEDURE FLOWCHART FOR PERSONS WHO MAY HAVE BEEN EXPOSED TO SARS



ANNOTATIONS

The above-recommended SARS triage procedure uses the principle of **enhanced sensitivity** to avoid missing cases and to allow for prompt implementation of control measures, e.g. isolation and contact tracing. The enhanced sensitivity case definition includes cases with at least one symptom of SARS only and patients with no symptom of SARS but with exposure history, in addition to the SARS suspect category.

^A **Triage Screening Form** contains targeted screening questions regarding the patient's signs and symptoms and exposure history.
Please see the full report for a copy of the screening form.

^B **SARS-affected areas** refer to areas or countries with recent local transmission of SARS in the last 20 days. The list of affected areas may change depending on epidemiologic surveillance reports. As of 5 July 2003, the last known chain of transmission was interrupted in Taiwan Province, indicating that the global outbreak is contained. Epidemiologic surveillance, however, continues. For updates, please check the DOH-NEC SARS website at <http://www.doh.gov.ph/nec/sars> and WHO website at <http://www.who.int/csr/sarsareas>.

^C **Close contact** means having cared for, having lived with or having had direct contact with respiratory secretions and/or body fluids of a suspect or probable SARS patient. 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, office, or clinic for a brief period.

^D **Fever** is oral or digital ear temperature > 38° C. Use clinical judgment when evaluating patients for whom a measured temperature of > 38° C is not documented. Factors that should be considered include patients' self-report of fever, use of antipyretics, and presence of immunocompromised conditions or intake of immunosuppressants, elderly, and lack of access to health care or inability to obtain a measured temperature. Consider these factors when classifying patients who do not meet the criteria for SARS suspect.

^E **Respiratory symptoms** includes any one of the following: cough, difficulty of breathing or shortness of breath

^F **SARS Referral Hospitals:** Research Institute for Tropical Medicine (RITM), San Lazaro Hospital (SLH) and selected regional hospitals
RITM: 807-2628 – Local 209 for SARS admission, Local 614 for admitting section; SLH: 732-3776 – Local 300 *Please see the full report for the list of regional SARS referral hospitals. Please refer to Infection Control Section 4 for proper emergency transport procedures.*

^G **NEC** – National Epidemiology Center for cases in Metro Manila, Telephone Nos. 742-3945 / 741-7048 (Telefax) / 743-8301 loc. 1900 to 02

^H **RESU** – Regional Epidemiology Surveillance Unit for cases in the provinces and regions; *please see full report for the RESU directory.*

^I **Home quarantine** is the 14-day period from date of exposure enforced on exposed persons, during which the person should limit activities outside the home and minimize contact with family members and friends. Advise them also to do **personal surveillance**, which includes twice daily monitoring of temperature and development of respiratory symptoms. As soon as symptoms develop, advise them to call immediately the DOH STOP SARS ATTACK hotlines or the designated RESU or local government unit Barangay Health Emergency Response Team (BHERT).

DOH STOP SARS ATTACK Hotline Numbers: 741-7048, 743-1937

Text MED <space> SARS then send to Globe 2333 or Smart 257 OR Text HOTLINE SARS and send to 2960

^J **Active surveillance** involves twice daily monitoring of temperature and development of respiratory symptoms by the exposed person with daily phone calls or visits by the NEC or RESU personnel.

2. DIAGNOSIS OF SEVERE ACUTE RESPIRATORY SYNDROME

CASE DEFINITIONS¹

SARS SUSPECT is: (WHO 1 May 2003, CDC 17 July 2003)

1. A person presenting with history² of
 - High fever (> 38°C)³ **AND**
 - Cough, shortness of breath or difficulty in breathing **AND**One or more of the following exposure history within 14 days prior to onset of symptoms:
 - Close contact⁴ with a person under investigation for SARS
 - History of travel to areas with recent local transmission⁵ of SARS
 - Residing in an area with recent local transmission of SARS
2. A person with an unexplained acute respiratory illness resulting in death, but with no autopsy **AND** with an exposure history as outlined above.

PROBABLE SARS is

- A SARS suspect + radiographic findings of Pneumonia⁶ or ARDS
OR positive for SARS coronavirus by one or more assays⁷
OR autopsy findings consistent with ARDS without an identifiable cause⁸

Exclusion criteria

Exclude a case as a suspect or probable SARS if an alternative diagnosis can fully explain the illness and/or if convalescent-phase serum sample taken > 28 days or between 22-28 days after symptom onset, is negative for SARS-associated coronavirus.

¹ Laboratory tests now supplement the above surveillance case definitions. The rationale for retaining the clinical and epidemiological basis for the case definitions is that to date there is no validated, widely and consistently available test yet for infection with the SARS coronavirus. Antibody tests may not become positive for three or more weeks after the onset of symptoms. Molecular assays must be performed using appropriate reagents under strictly controlled conditions, and may not be positive in the early stages of illness. The optimal specimen to be tested at any given stage of the illness is still not known.

² The surveillance period begins on 1 November 2002 to capture cases of atypical pneumonia in China. International transmission of SARS was first reported in March 2003 for cases with onset in February 2003.

³ See page 3 for definition.

⁴ Recent local transmission has occurred when, in the last 20 days, one or more reported probable cases of SARS have most likely acquired their infection locally, regardless of the setting in which this may have occurred, in contrast to those in which infection was acquired from another country. The case patient's travel should have occurred on or before the last date the travel alert was in place. Last date of illness onset for inclusion as reported case is 20 days from removal of travel alert. As of 5 July 2003, travel alert to Taiwan was lifted.

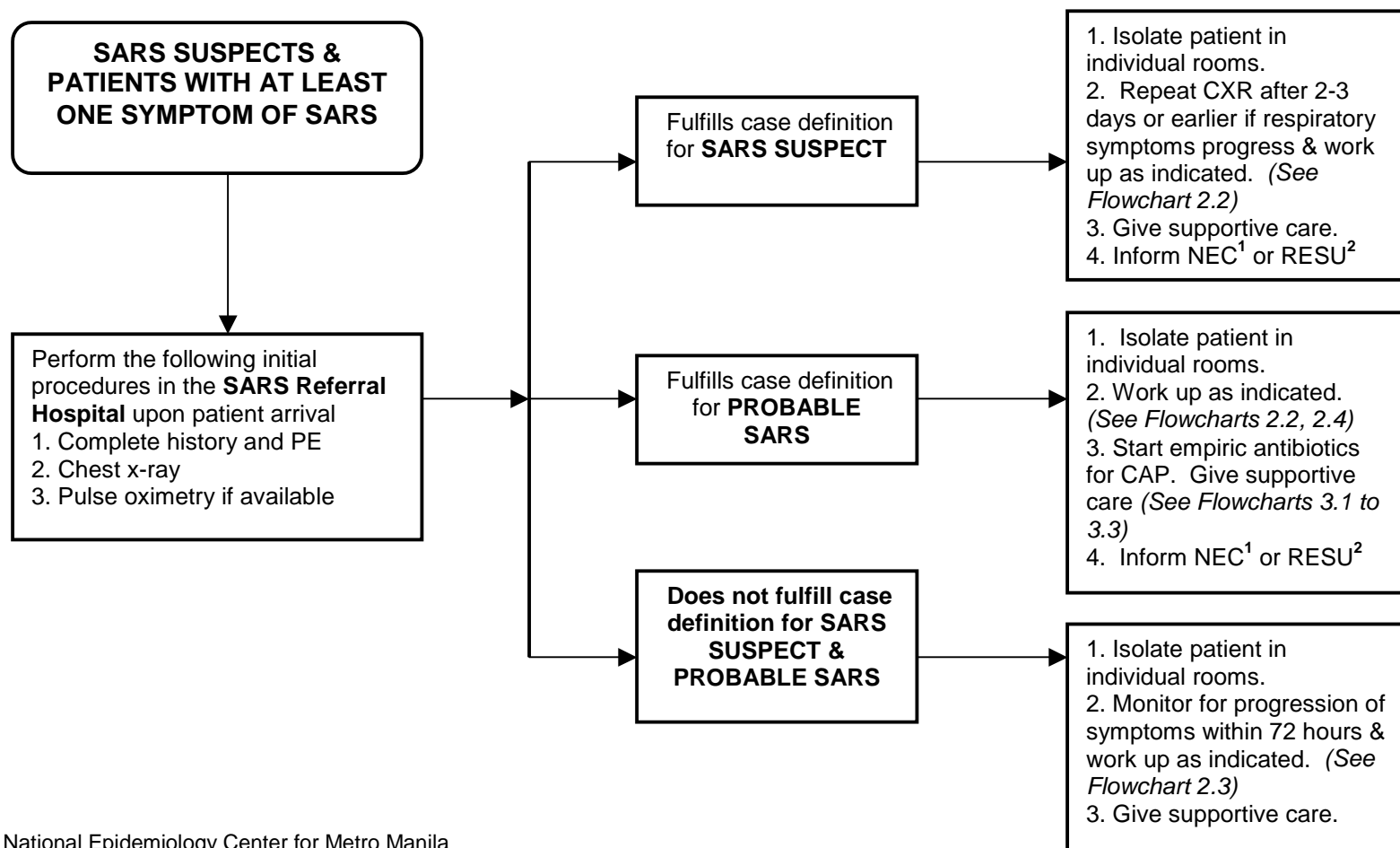
⁵ See page 3 for definition.

⁶ A good radiologic examination requires good technique, good equipment and experienced radiologists preferably, 2 out of 3 interpretations to make a diagnosis. Location and size of the lesions limits the sensitivity of the chest x-ray (i.e., retrocardiac, costophrenic sulci, peripheral lung margins, upper lobe lesions and < 3 cm lesions are missed by chest radiographs). Typical radiographic appearances of SARS cases include predominantly peripheral lesions, commonly progressing from unilateral focal air-space opacity to unilateral multifocal or bilateral involvement during treatment. Pleural effusion, cavitation and lymphadenopathy are uncommon findings.

⁷ Where laboratory tests are not available or not done, probable SARS cases as currently defined above should continue to be reported. Suspect cases with positive laboratory results will be reclassified as probable cases for notification purposes only if the testing laboratories use appropriate quality control procedures. There is no distinction between probable cases with or without a positive laboratory result and suspect cases with a positive result for the purposes of global surveillance.

⁸ If an autopsy is conducted and no pathological evidence of ARDS is found, the case should be "discarded" as a suspect or probable SARS case. If no autopsy is done, a suspect case should remain classified as SARS suspect. However if the case is identified as part of a chain transmission of SARS, reclassify as probable SARS.

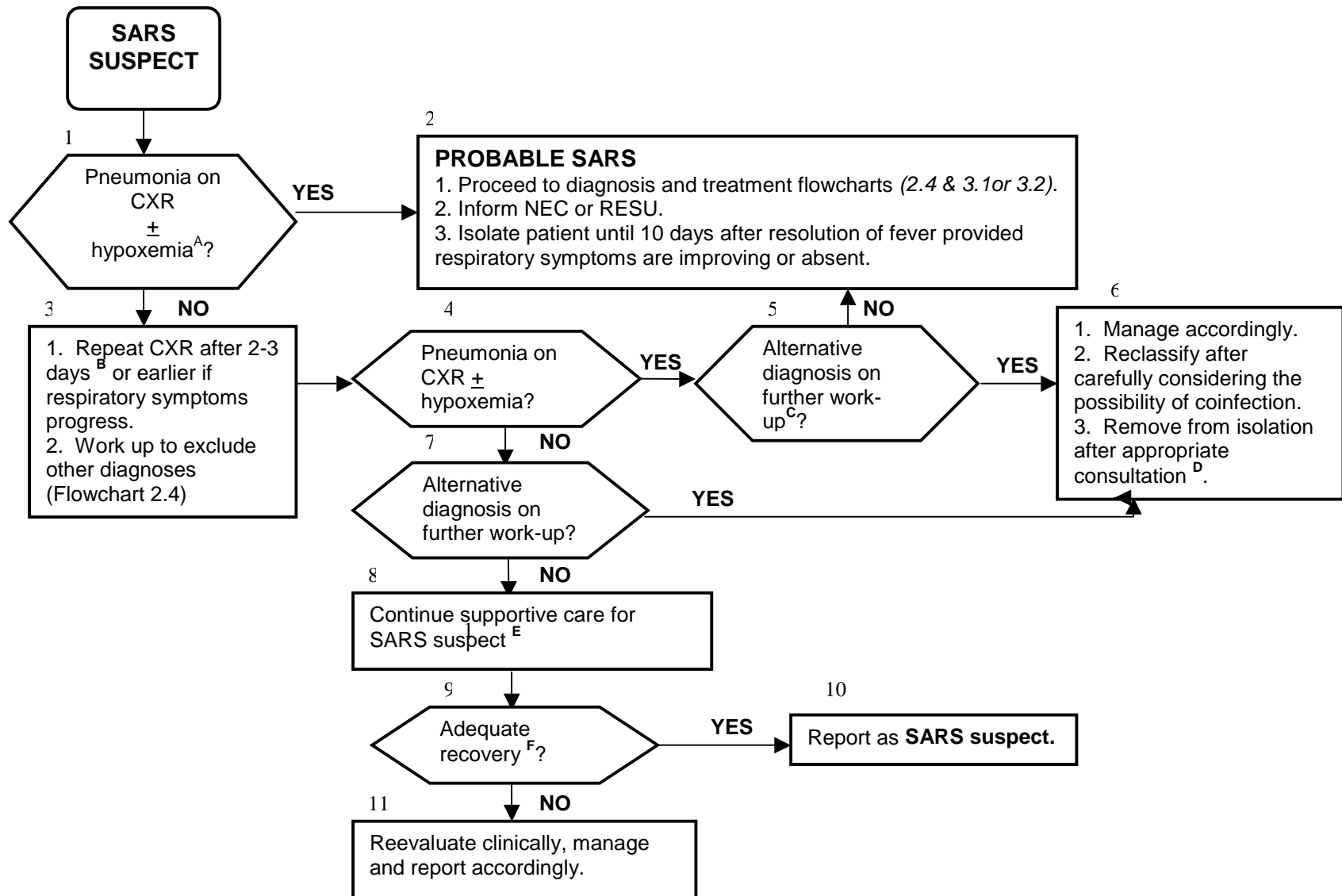
FLOWCHART 2.1 GENERAL MANAGEMENT PROCEDURE IN THE SARS REFERRAL HOSPITALS FOR SYMPTOMATIC PATIENTS WITH EXPOSURE HISTORY TO SARS



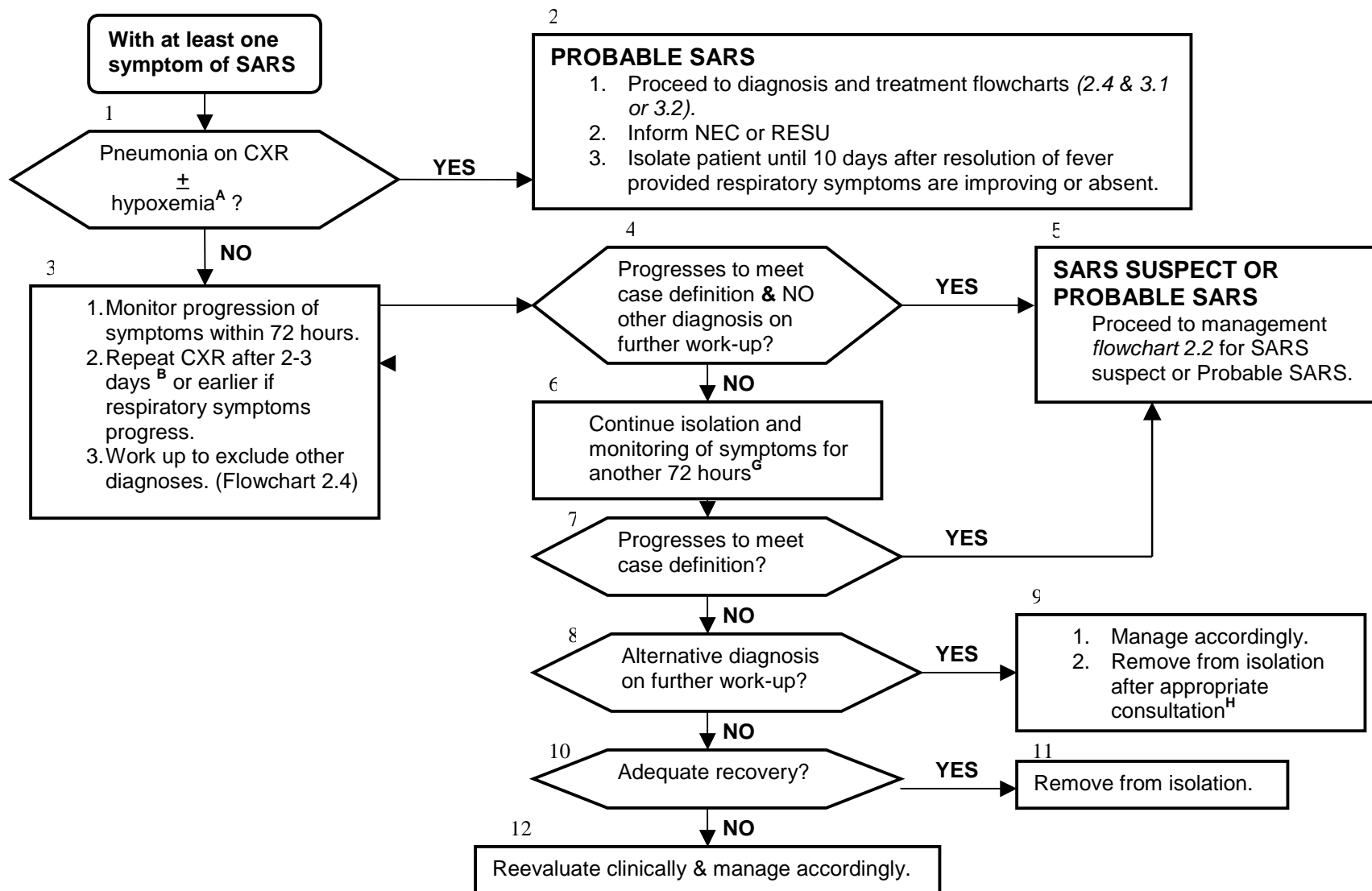
¹ NEC - National Epidemiology Center for Metro Manila

² RESU - Regional Epidemiology Surveillance Unit for provinces

FLOWCHART 2.2 GENERAL MANAGEMENT OF SARS SUSPECTS AND PROBABLE SARS



FLOWCHART 2.3 GENERAL MANAGEMENT OF PATIENTS WITH AT LEAST ONE SYMPTOM OF SARS



Annotations to Flowcharts 2.2-2.3 on Management and Reclassification of Cases

As SARS is currently a diagnosis of exclusion, the status of a reported case may change over time. Always manage patients as deemed clinically appropriate, regardless of their case classification. Clinicians **should not downgrade** the case definition category of patients while awaiting laboratory test results or on the bases of negative laboratory results alone. *See the full report of the Interim Clinical Guidelines for the interpretation of SARS laboratory tests.*

^A **Hypoxemia** is <95% O₂ saturation on pulse oximetry taken at room air

^B 22% of SARS patients may have normal chest radiographs with radiologic evidence of SARS visible only on follow-up chest radiographs or high-resolution CT scan after an average of 3 days based on a case series of confirmed SARS in Hong Kong.

^C Factors that may be considered in assigning an alternate diagnosis include the strength of the exposure history, the specificity of the diagnostic test and the compatibility of the clinical presentation and course of illness for the alternative diagnosis.

^D Patients initially classified as suspect or probable SARS, for whom an alternative diagnosis can fully explain the illness, reclassify them after carefully considering the possibility of coinfection. They may be removed from isolation after appropriate consultation with the clinician and public health authorities (DOH and Regional Expert Panels). Factors that may be considered include the nature of the potential exposure to SARS, nature of contact with others in the residential or work setting and the strength of the evidence for an alternative diagnosis

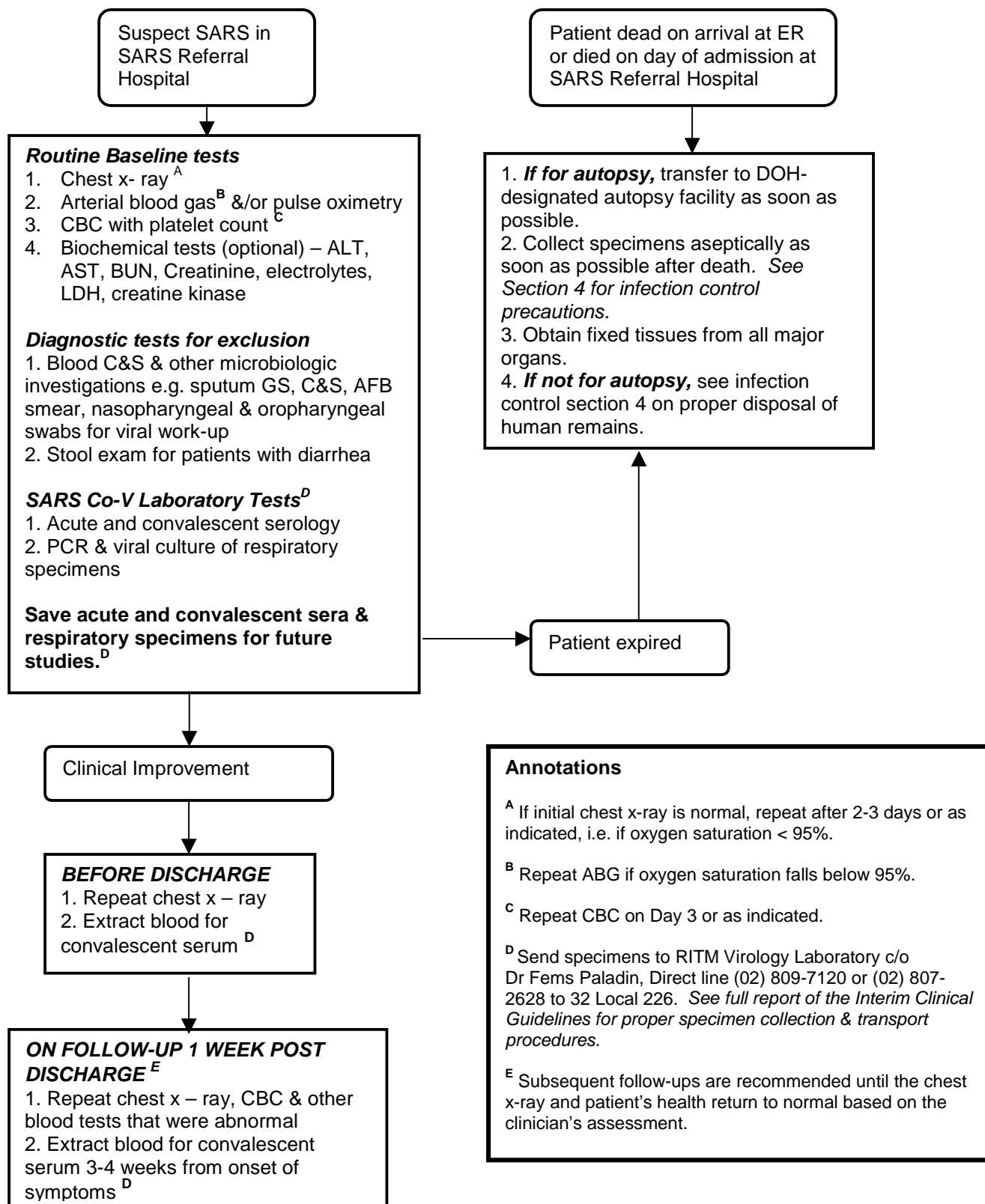
^E **Supportive care** includes antipyretics, adequate hydration and oxygenation.

^F If repeat chest radiograph remains normal, and no alternative diagnosis can fully explain the illness, and the patient recovers adequately, i.e. symptoms improve or resolve; the patient remains as a SARS suspect.

^G If the repeat chest radiograph remains normal, but patient has persistent fever or unresolving symptoms, continue isolation and monitoring for another 72 hours.

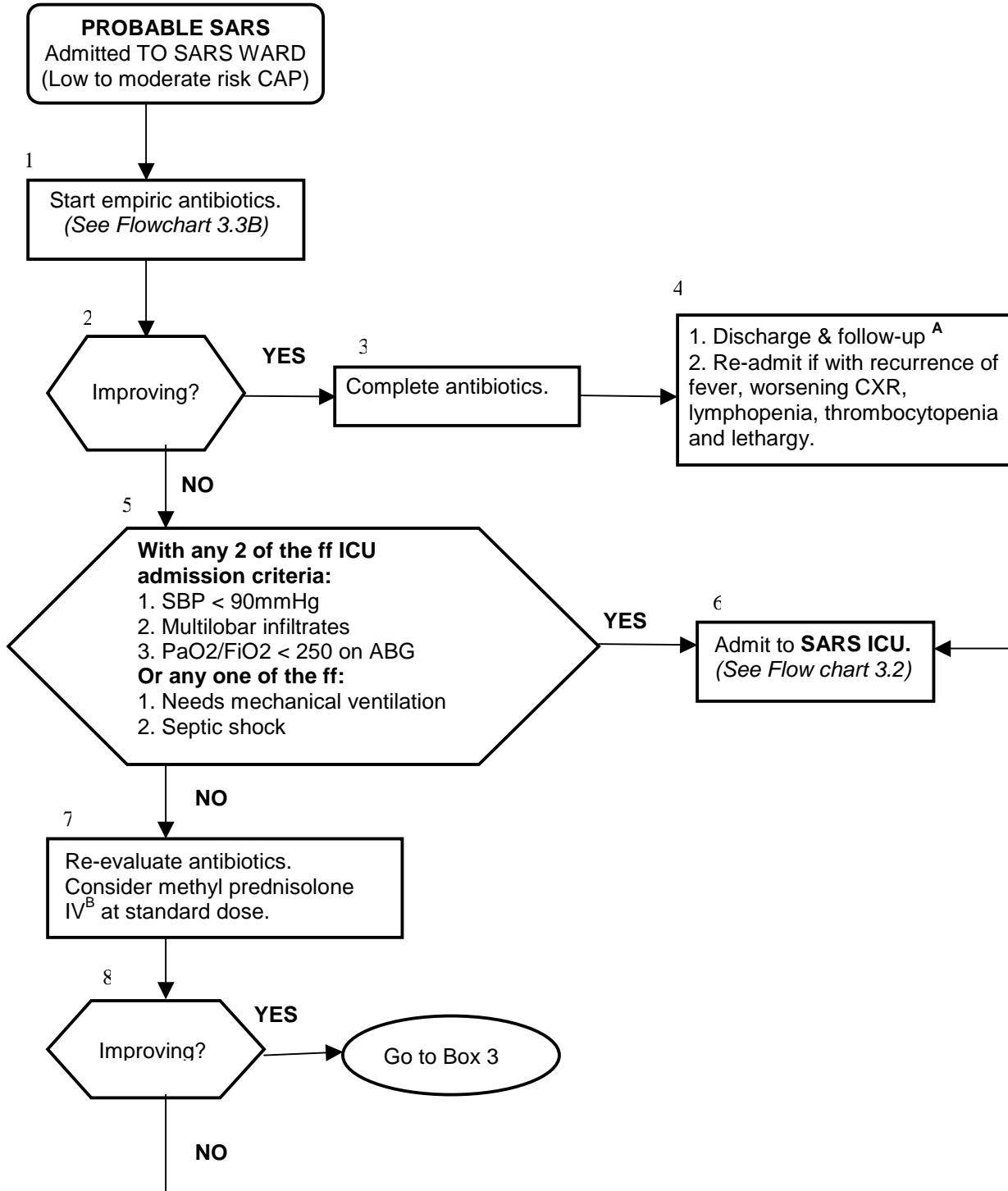
^H If symptoms do not progress to meet the case definition after 6 days of observation and patient recovers adequately, remove from isolation after appropriate consultation with the clinicians and public health authorities (DOH and Regional Expert Panels).

FLOWCHART 2.4 DIAGNOSTIC EVALUATION OF SYMPTOMATIC PATIENTS WITH EXPOSURE HISTORY TO SARS

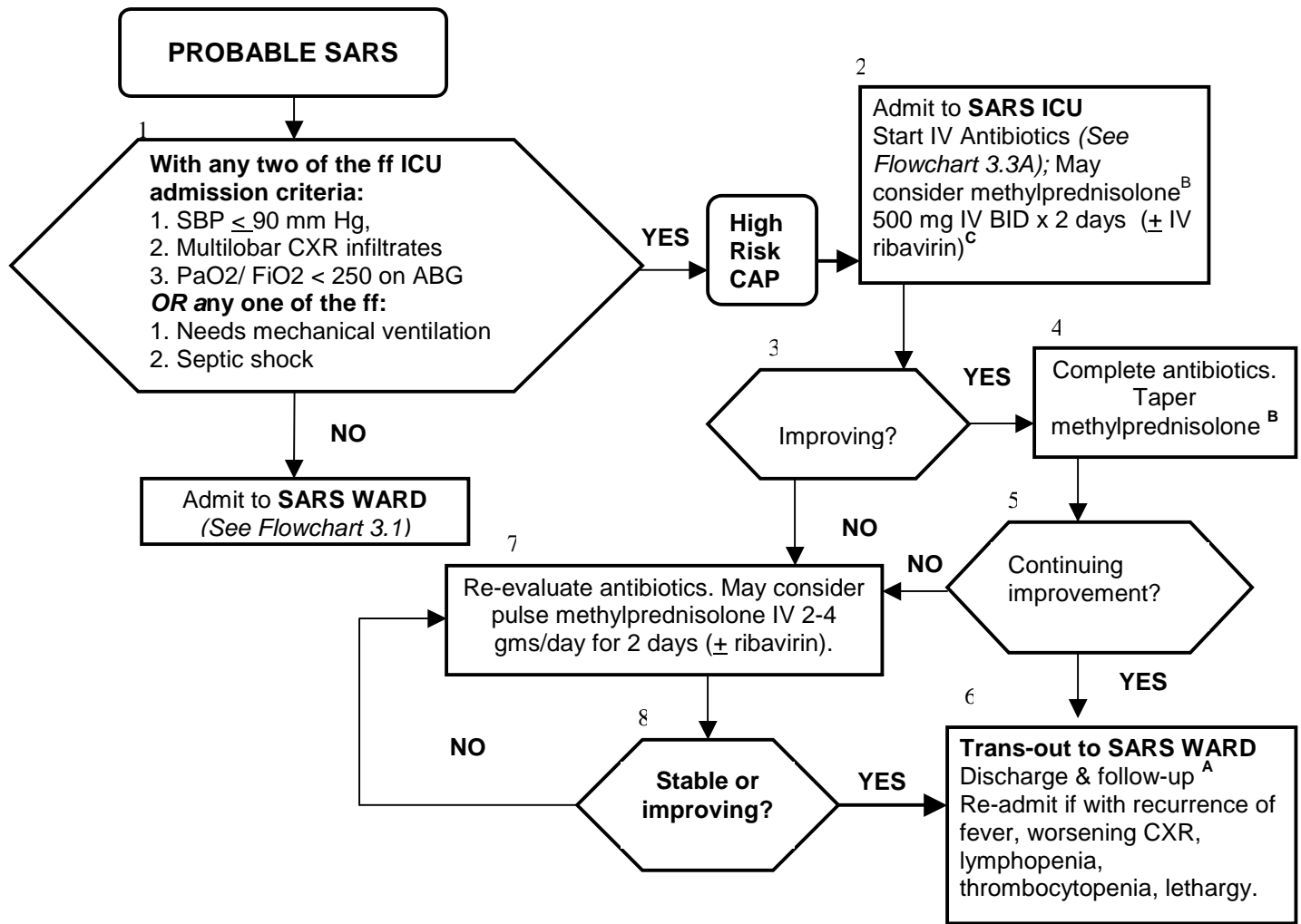


3. TREATMENT OF SEVERE ACUTE RESPIRATORY SYNDROME

**FLOWCHART 3.1 TREATMENT OF PROBABLE SARS CASES IN THE WARDS
(MINIMAL- TO MODERATE-RISK CAP)**



FLOWCHART 3.2 TREATMENT OF PROBABLE SARS CASES IN THE ICU (HIGH-RISK CAP)



Annotations to Flowcharts 3.1 and 3.2

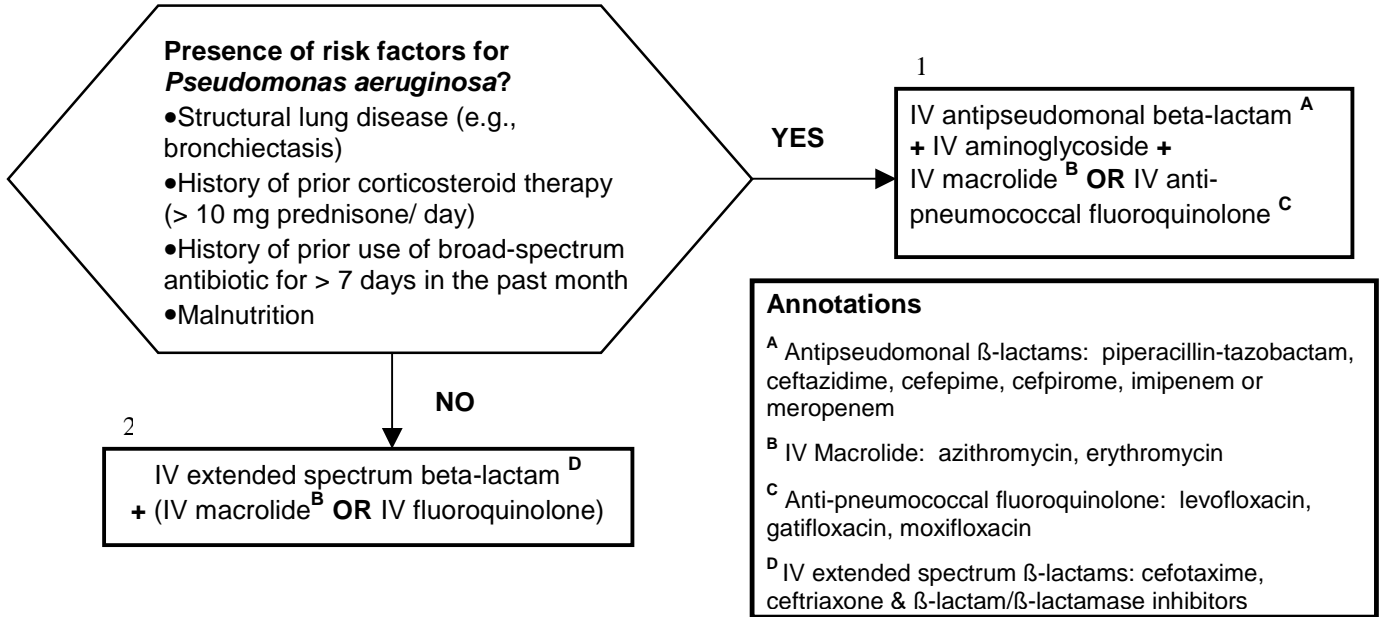
^A Criteria for discharge include all of the following: afebrile for 48 hours, resolving or absent cough and respiratory symptoms; laboratory tests (WBC, platelet count, CPK, LFTs, plasma sodium) previously abnormal returning to normal and improving chest x-ray findings. Convalescent cases should remain isolated at home for 10 days after resolution of fever and they should monitor and record their temperature twice daily until follow-up. Temperature of at least 38°C on two consecutive occasions should prompt a return to the health facility where they were confined.

^B The efficacy of steroids in SARS has not been proven in clinical trials. Methylprednisolone 1 mg/kg q 8H IV x 5 days then 1 mg/kg q 12H x 5 days then prednisolone 0.5 mg/kg BID PO x 5 days then prednisolone 0.5 mg/kg daily PO x 3 days then prednisolone 0.25 mg/kg daily PO x 3 days then off.

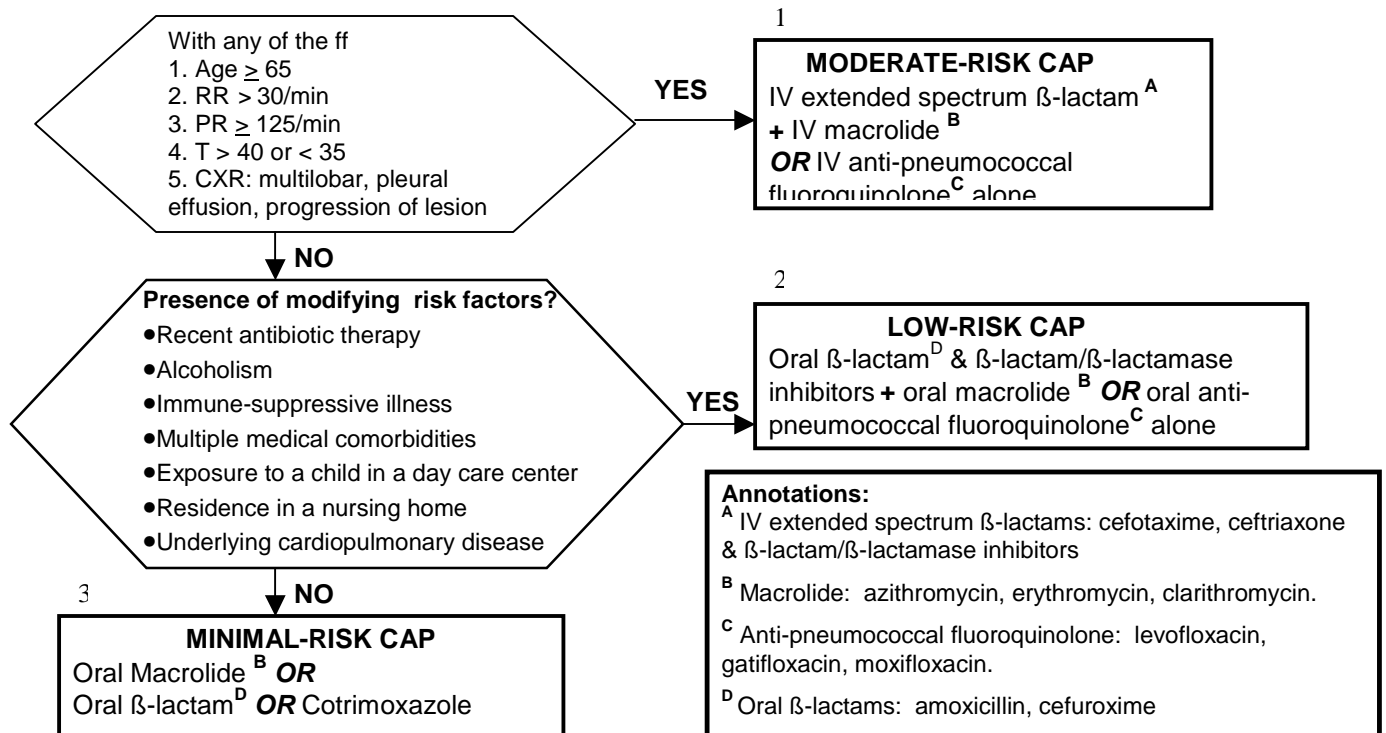
^C WHO does not recommend routine use of ribavirin. There is no definite evidence that ribavirin alters the clinical course of SARS. Use of ribavirin is optional and the dose is 400 mg q8H IV x 10-14 days (if IV form not available: ribavirin 2 gms loading dose PO then 4 gms/day PO in 4 divided doses for 4 days then 2 gms/day PO for 6 days). See full report of the Interim Clinical Guidelines for details on ribavirin.

FLOWCHART 3.3 EMPIRIC ANTIBIOTICS FOR COMMUNITY-ACQUIRED PNEUMONIA

A. Empiric Antibiotics for Severe or High-Risk CAP



B. Empiric antibiotics for Minimal- to Moderate-Risk CAP in the Wards



4. INFECTION CONTROL IN SEVERE ACUTE RESPIRATORY SYNDROME

THE PERSONAL PROTECTIVE EQUIPMENT (PPE)

- All healthcare workers in the triage and holding areas, SARS isolation rooms and wards taking care of SARS patients should HAVE the appropriate PPE, which includes:

N95 masks	Eye protection (i.e. goggles)
Gloves	Shoe covers
Disposable solid front gowns	Hair cover or cap

- It is essential that provision of enough PPE is planned for and that this is accessible to HCWs when the need arises.
- **Protection of the HCW is maximized and the risk of transmission is minimized only if the full PPE is used properly and worn at all times during patient care activities or whenever patient contact is possible.**
- **The following personnel should wear the PPE: physicians, nurses and other HCWs who provide direct care to SARS patients; support hospital staff e.g. nursing aides, laundry personnel, cleaners working in SARS facilities, laboratory personnel and X-ray technicians.**
- The infection control officer must monitor and supervise the proper use, care and disposal of the PPE.
- The sequence for putting on and removing the PPE is as follows:

PUTTING ON PPE:

Do this in the changing room just before entering the SARS designated-area.

- a. Change from street clothes to hospital scrub suit then put on head cover.
- b. Put on shoe covers, tuck in the bottom of the pants into top ends of shoe cover.
- c. Put on gown, wear the gown properly by closing the back with the Velcro or tie-strings, then put on the impermeable apron.
- d. Wash hands with alcohol-based hand wash. Put on gloves, tuck sleeves of gown into the gloves, then put on goggles and masks.

REMOVING PPE:

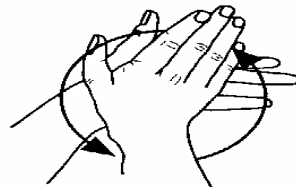
Do this in the changing room before leaving the SARS-designated area.

- a. Wash gloved hands with >60% alcohol-based hand wash to remove soilage.
- b. Remove shoe cover, apron and gown. Dispose into yellow biohazard trash bags.
- c. Remove gloves and dispose into yellow trash bins. Wash ungloved hands with alcohol-based hand wash.
- d. Remove goggles and put in a receptacle for cleaning before next use.
- e. Remove mask and dispose into an infectious/yellow bag or store in plastic for reuse* (see discussion on Guidelines for N95 below).
- f. Remove cap and dispose into yellow trash bins.
- g. Wash hands with regular soap and water. Preferably, take a full bath if with facilities.
- h. Change to street clothes and wash hands before leaving SARS-designated area.

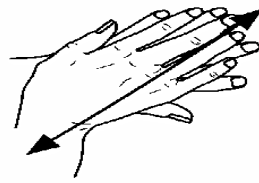
- **For ALL TYPES of patient contact and patient care activities, wear the FULL PPE at ALL TIMES, which includes the N95 mask, disposable non-sterile gloves, disposable fluid-resistant gown and goggles or face shields.**

- PPE should not replace proper hand hygiene. ALWAYS wash with soap and water after every patient contact. WHO recommends alcohol-containing hand wash solution as long as there is no gross soilage.
- **A full change of PPE must take place if the HCW will leave the SARS-designated areas.** NEVER BRING instruments or articles and equipment used in the SARS-designated areas outside of that area.

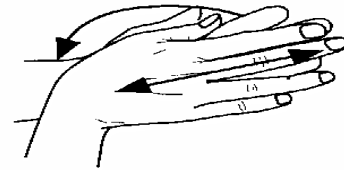
RECOMMENDED HAND HYGIENE PROCEDURE



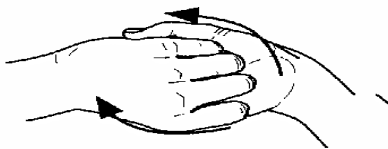
Procedure 1
Wet hands and wrists. Apply soap.



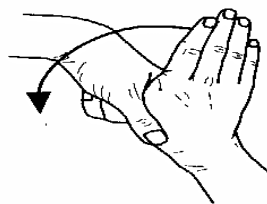
Procedure 2
Right palm over left, left over right.



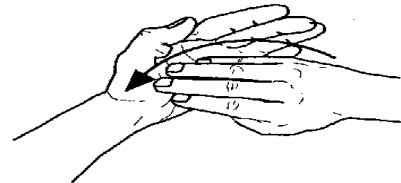
Procedure 3
Palm to palm, fingers interlaced.



Procedure 4
Back fingers to opposing fingers interlocked.



Procedure 5
Rotational rubbing of right thumb clasped in left palm and vice versa.



Procedure 6
Rotational rubbing backwards and forwards with tops of fingers and thumb of right hand in left and vice versa.

NOTE: Repeat procedures 1-6 until the hands are clean. Rinse hands and pat dry.

Guidelines for the use and reuse of N95 Mask

- **Train all HCW on how to use the N95 mask.** Wear masks at all times during the entire period that the personnel are inside the SARS area. WHO recommends change of mask every 6-8 hours in an ideal setting or every work shift. Discard grossly soiled or physically damaged or deformed N95 masks into infectious/yellow bags.
- If N95 masks are not available for all HCWs in a facility, **PRIORITIZE** the available masks to HCWs with the highest risk of direct contact with the SARS patients. A plain surgical mask with snug fit is an alternative while awaiting N95 supplies, but these are not as protective as N95 masks.
- The CDC recommends reuse only if the mask is not yet grossly soiled or physically damaged. **Reuse may increase contamination of the HCW.**
 - Keep used masks in individual disposable resealable plastic bags labeled with users' name. NEVER bring N95 used mask outside of the SARS-designated area
 - When putting on a reused N95 mask, be careful not to touch the potentially contaminated outside surface. Wash hands after putting on reused mask.

GENERAL CLEANING PROCEDURES FOR SARS FACILITIES

- Supervise and train properly all personnel assigned to do the daily cleaning and disinfecting tasks in SARS facilities, which include the triage and holding areas, SARS isolation rooms or wards.
- Disinfectant solutions acceptable for cleaning purposes are chemical germicides used in hospital infection control. These agents include 0.1% sodium hypochlorite (1part bleach in 100 parts water) or phenolic agents.

- Use **sodium hypochlorite solution (0.1%)** on surfaces after general cleaning procedures for environmental disinfection. Apply disinfectant using a damp cloth. Leave for 10 minutes then rinse off with water, and dry the surface or area. Do not use spray pack as this may promote aerosol production.
- Do not splash liquid while cleaning to avoid aerosol creation. Use a steady sweeping motion when cleaning floors or horizontal surfaces.
- Discard leftover solutions used for cleaning SARS facilities and do not use anymore in other hospital areas. Wash thoroughly and dry all housekeeping equipment such as mops and rugs.
- The cleaning services must ensure that the infectious/yellow bags for biohazard wastes and linen are durable and remain sealed during transport outside the SARS facilities.
- Clean and disinfect the triage area regularly. Disinfect at least once daily horizontal surfaces especially the table where the patient is interviewed.
- After discharge or transfer of a suspect SARS patient, clean and disinfect the Holding Area and SARS isolation rooms/ward before the next patient is seen or admitted. Terminal cleaning includes all horizontal surfaces covered in routine cleaning (floors, bathrooms, sinks) AND obviously soiled vertical surfaces and surfaces frequently touched by the patient and the HCWs (examining tables, side tables).
- Clean and disinfect equipment such as mechanical ventilators, pulse oximeter and BP cuff according to the manufacturer's instructions.

INFECTION CONTROL IN THE TRIAGE AND HOLDING AREAS

Physical Requirements for the Triage Area

- All health care facilities **MUST** designate a triage area, which should be located **as near as possible to the entrance of the hospital** to prevent patients from gaining access to the whole hospital facility. It should be **separate from the general emergency room** to prevent potential transmission of the SARS infection to other patients and hospital staff.
- The area should have **adequate ventilation and room air exchange**.

Physical Requirements for the Holding Area

This is the area where patients wait while transfer to the SARS Referral Hospital is being coordinated. **Provide surgical masks** to the patients and as much as possible minimize contact with them unless deemed necessary.

- The **holding area** should be a **separate room** located near the triage area to ensure the quick transfer of SARS suspects and to minimize contact with other hospital patients.
- The area should have **adequate ventilation and room air exchange** (negative pressure OR independent air-conditioning unit and exhaust OR open windows) and its **own sink and toilet facilities**.

Personnel Protection Requirements for the Triage and Holding Areas

- Provide training on patient screening and proper infection control precautions for all personnel in the triage and holding areas.
- The triage personnel must be equipped and protected with an **N95 mask**.
- The holding area personnel should wear the **full personal protective equipment**.
- **LEAVE ALL** appendages of healthcare workers such as **CELLULAR PHONES** and **PAGERS** outside the SARS designated areas. If this is not possible, cover them with yellow disposable plastic cover. Dispose the covers before leaving the SARS areas.

Containment procedures of SARS infection within the SARS holding area

- SARS suspects must wear a surgical mask at all times and remain within the SARS holding area until ready for admission or transport.
- Family members and other visitors **ARE NOT** allowed in the SARS Holding Area.
- In addition, changing into a different set of street or work clothes is highly recommended upon leaving the area.

INFECTION CONTROL IN THE EMERGENCY MEDICAL TRANSPORT (EMT) OF SARS PATIENTS

- **Transport of SARS suspects/cases to a SARS referral hospital is the mandatory responsibility of the referring health facility.** Notify receiving facility prior to transport of SARS patient.
- The driver and the EMT personnel must wear N95 mask during the entire trip. Utilize the minimum number of personnel in transporting SARS patients.
- Do not transport SARS patients with non-SARS patients in the same vehicle.
- The SARS patient MUST WEAR A SURGICAL MASK during the entire trip.
- Oxygen delivery with simple and non-rebreather facemasks may be used for patient oxygen support during transport.
- Disinfect the surfaces of the inside compartment of the transport vehicle with 0.1% sodium hypochlorite after each use.

INFECTION CONTROL IN THE INPATIENT SETTING

Physical requirements of SARS isolation room/ward

- Admit SARS SUSPECTS ONLY TO SINGLE ISOLATION ROOMS with their own sink and bathrooms. CLOSE the door at ALL times.
- The designated rooms for SARS suspects should have negative-pressure devices, but if not available, single air-supply or air-conditioning unit with independent exhaust is acceptable. Exhaust/windows must not open to area with public access.
- PROBABLE SARS should preferably be admitted to single isolation rooms also. If single private rooms will not be possible, cohort placement in one room is an acceptable alternative. Place a screen or other forms of barriers between patients.
- DO NOT MIX SARS Suspects and Probable SARS patients in the same room.
- Designate a separate area strategically located within the isolation room or ward for HCWs to change and dispose PPE (i.e. changing room).

Personnel requirements of SARS room/ward

- ONLY HCWs and paramedical staff with defined patient care-related activities should enter these areas. They must be protected with PPE when they enter these rooms.
- Keep to a minimum the personnel handling the patients and as warranted by the patients' condition.

Containment procedures for SARS room/ward

- Minimize absolutely exposure to the SARS-infected patient.
- Each patient should have utilities for exclusive use. Discard wastes soiled with body fluids of SARS patients in the yellow trash bags.
- Trained personnel must collect the linen with minimum handling, shaking, or sorting to minimize generation of contaminated aerosols. Disinfected and washed linen can be reused.

INFECTION CONTROL IN THE USE OF VENTILATORS

- Endotracheal intubation is a high-risk procedure, do this ONLY if medically necessary. Only skilled personnel equipped with the full PPE should do the intubation. Prescribed mask for this procedure is **P-100 FULL- FACE respirator mask or a purifying air-powered respirator (PAPR).**
- Discard all ventilator tubings after appropriate decontamination with the recommended disinfectants (0.1% sodium hypochlorite or similar agents) for these devices.
- Do not reuse tubings and suction catheters even in areas of limited resources.

INFECTION CONTROL WHILE COLLECTING/PROCESSING SPECIMENS

- Procedures that induce coughing and encourage the production of respiratory droplets are high-risk procedures that should not be performed unless absolutely necessary.
- Personnel taking care of the SARS patients, instead of the laboratory staff, should obtain clinical specimens. The Research Institute for Tropical Medicine Virology laboratory will process laboratory specimens of SARS cases. *Inform the reference laboratory that specimens will be collected from SARS patients.*
- Healthcare personnel should observe Standard, Airborne, Droplet and Contact Precautions in collecting and handling specimens. Wear the FULL PPE including gown, apron, eye protection, gloves and N95 mask. Always change gloves between patients.

INFECTION CONTROL IN PERFORMING RADIOLOGICAL PROCEDURES

- Perform radiological procedures as expeditiously as possible and with minimum contact with the patient. If possible, do a **bedside x-ray**.

INFECTION CONTROL IN HANDLING OF HUMAN REMAINS OF SARS PATIENTS

It is recommended that suspected SARS patients who die be autopsied by the designated SARS referral hospitals provided all infection control procedures are followed.

- As soon as a SARS patient expires, wrap the body in linen and put into a body bag. Place the body in cold storage at **3 degrees centigrade (+/- 2°C)** as soon as possible.
- DO NOT embalm the remains of a SARS case. Ideally, CREMATE the remains of a SARS patient, if not possible, put the remains in a durable, airtight sealed coffin for immediate burial.

MANAGEMENT OF HEALTH CARE WORKERS EXPOSED TO SARS PATIENTS

- The hospital shall designate a health officer who will be responsible for monitoring and recording HCWs including emergency transport personnel according to their date and type of contact with SARS cases and development of symptoms.
- It is highly recommended that a hospital identify a dedicated team of personnel of HCWs who will go on duty ONLY at SARS-designated areas.
- HCWs should monitor body temperature (twice daily) and the development of respiratory symptoms. Do baseline chest x-ray for all members of the SARS team.
- The designated hospital physician must promptly evaluate a HCW who becomes symptomatic with cough and fever. If the HCW is assessed to be a SARS suspect, admit and manage accordingly. Continue exclusion from duty **for 10 days** after the resolution of fever and respiratory symptoms.
- **Do not exclude from duty an exposed healthcare worker with proper protective equipment if they do not have either fever or respiratory symptoms.**
- REPORT any unprotected exposure of any hospital personnel to SARS patients to the designated health officer immediately and place on strict home confinement for 14 days.
- **All healthcare facility workers should be educated concerning the symptoms of SARS.**

INFECTION CONTROL PRECAUTIONS FOR CONVALESCENT PATIENTS AND HOUSEHOLD CLOSE CONTACTS OF DISCHARGED SARS PATIENTS

- After discharge, SARS patients should wear surgical mask, limit interactions outside the home and should not go to work, school, or other public areas **until ten days after resolution of fever** and with improved or absent respiratory symptoms.
- All members of a household with a SARS patient should carefully follow recommendations for hand hygiene, particularly after contact with body fluids.
- AVOID sharing of eating utensils, towels, and bedding between SARS patients and others. Clean all environmental surfaces soiled by body fluids with a household disinfectant according to manufacturer's instructions; wear gloves during this activity.
- **Household members or other close contacts of SARS patients who develop fever or respiratory symptoms should immediately contact the designated local government facility or the DOH SARS ATTACK hotline.**

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