The information contained in this document is updated as of 26.4.03. The SARS epidemiology is still evolving. Until its causes and treatments are better understood, infection control measures that are put in place must target and prevent all possible modes of transmission.

This manual supersedes all other manuals. This manual was drawn up with the assistance of Dr Cathryn Murphy, Infection Control WHO SARS Response Team, Dr Brenda Ang, TTSH, Dr Tan Ban Hock, SGH, Dr Leo Yee Sin, CDC. Due to the rapidly changing situation, the user is encouraged to check with Ministry of Health, Singapore and the World Health Organisation for the latest updates.
A. DISEASE INFORMATION
(Reference: World Health Organisation. Please refer to www.who for the latest updates)

A1. CLINICAL FEATURES

1. SARS is the acronym for Severe Acute Respiratory Syndrome.
2. It is a new disease which has its origins in Guangdong Province, China.
3. It is caused by a type of coronavirus.
4. Countries affected include China, Hong Kong, Singapore and Canada.
5. It is most likely to be spread by close person-to-person contact involving exposure to respiratory droplets, and possibly by direct contact with infected bodily fluids.
6. Incubation period is usually 2-7 days but may be as long as 10 days.

7. **IT IS IMPORTANT TO NOTE THAT THE CLINICAL PICTURE IS VARIED IN ITS PRESENTATION ESPECIALLY IN THE PRESENCE OF CO-MORBIDITY. OTHER CONDITIONS WHICH MAY CLOUD THE CLINICAL PICTURE INCLUDE USE OF STEROIDS, IMMUNOCOMPROMISED STATE AND ADVANCED AGE.**

8. Presenting symptoms in the first 83 reported patients in Singapore include:
   a) High fever. (100% in the Singapore Series. Please note that at day 2 and 3 of the illness, the fever can dip to 37.6C or below but goes up again after that. Also note that immunocompromised patients may be afebrile initially or only have low grade fever).
   b) Chills
   c) Cough (73%)
   d) Myalgia (57%)
   e) Sore throat (31%)
   f) Malaise (23%)
   g) Rigors (18%)
   h) Headache (18%)
   i) Diarrhea (17%)
   j) Dizziness (1%)
   k) Rash (1%)

9. **Laboratory features**
   a) Absolute lymphocyte count is often decreased
   b) Overall white counts normal or decreased
   c) At peak of illness, leukopaenia, thrombocytopaenia
   d) Raised Creatinine Kinase (up to 3000IU/L)
   e) Raised transaminases (up to 2-6 times upper limits of normal)
   f) Raised LDH
   g) Raised C reactive protein
h) Hypoxia (occurring at end of first week of illness)

i) CXR findings

CXR may be normal during the febrile prodrome.

CXR findings may initially be interstitial infiltrates or a small, unilateral, patchy shadowing. Patchy CXR changes are sometimes noted in the absence of chest symptoms, or lung findings.

Progression may occur over the next few days to become bilateral and generalised, and more severe cases progress on to Respiratory Distress Syndrome.

10. Failure to respond to empiric treatment with macrolides or quinolones, the usual treatment for community acquired pneumonia, is an important diagnostic point.

11. Mortality worldwide is about 4-10%.

12. Approximately 10% of cases will require admission to intensive care facilities. Local figures multivariate predictors for admission to ICU are (TTSH):

   a) Age 40 years and above (p 0.009)

   b) Oxygen saturation <96% (p 0.001)

13. To-date, there is no cure, antidote or vaccine. Therapies tried include antiviral agents such as oseltamivir, ribavirin and steroids.

14. The best way of managing SARS is to prevent its spread. Each individual can minimise the risk of contracting SARS by taking precautionary measures and sensible hygiene practices for patients, themselves, fellow health care workers, other support staff and services.

THE BEST STRATEGY IS TO HAVE A HIGH INDEX OF SUSPICION AND BE VIGILANT AT ALL TIMES FOR EVERY PATIENT.
A2. CASE DEFINITIONS

SUSPECT CASE

a) A person presenting with a history of high fever ( >38°C)
AND
b) Cough or breathing difficulty
AND one or more of the following exposures during the 10 days prior to onset of symptoms

c) Close contact with a person who is a suspect or probable case of SARS
d) History of travel to an affected area

PROBABLE CASE

a) A suspect case with radiographic evidence of infiltrates consistent with pneumonia or respiratory distress syndrome (RDS) on chest X-ray
b) A suspect case with autopsy findings consistent with the pathology of RDS without an identified cause
GUIDELINES FOR HEALTH CARE ORGANISATIONS

1. The following infection control guidelines are based on the assumption that appropriate early identification procedures and segregation/isolation of suspect and probable SARS cases are in place.

2. These guidelines should be followed from the point of patient presentation until their discharge.

Health-care workers caring for patients with Severe Acute Respiratory Syndrome (SARS) are at risk for acquiring SARS. Although the infectivity of SARS is currently uncertain, transmission to health-care workers appears to have occurred after close contact with symptomatic individuals (e.g., persons with fever or respiratory symptoms), particularly before implementation of recommended infection control precautions for SARS (i.e., unprotected exposures). Personal protective equipment (e.g., hand hygiene, gown, gloves, and N95 masks) in addition to eye protection, is mandatory for health-care workers caring for probable or suspect cases to prevent transmission of SARS in health-care settings.

In view of the atypical presentations of SARS in patients with multiple medical problems or on immunosuppression, a very high index of suspicion is necessary. HENCE IF THERE IS ANY UNCERTAINTY, PLEASE ENSURE THAT FULL PROTECTION IS WORN

B1. HEALTH CARE WORKERS (HCW)

Health Care Worker is defined as any staff who has the potential to come into contact with a patient or his bodily secretions including:

1. All doctors: in house, visiting and volunteer
2. Nurses, nursing aides
3. Therapists, therapy aides
4. Pharmacists
5. Radiographers
6. Porters
7. Health attendants
8. Medical social workers
9. Receptionists/ front line staff
10. Business office staff who come into contact with patients or work in clinical care areas
11. Cleaners

Other staff including administrative staff/support staff not coming into direct contact with patients but who work in a health care setting.
Assuming that some patients may be undiagnosed and therefore not recognised, staff working in the following areas may come in contact with patients with fever or patients undergoing procedures where there is a risk of contact with respiratory secretions. SARS should be excluded in these patients as early as possible. Areas under higher risk include:

1. Triage areas
2. Department of Emergency Medicine
3. Infectious diseases/ Isolation wards
4. Intensive Care Units
5. Dental Clinics
6. Ophthalmology
7. Endoscopy centres
8. ENT SOC
9. Respiratory and Critical Care
10. Operating Theatres
11. Physiotherapy, Occupational therapy, Speech therapy
12. Ultrasound room, interventional radiology suite
13. Staff Clinic

Protective apparel (N95 masks, gowns, goggles, gloves) should be available and used in those circumstances where there is a suspicion of SARS and direct patient care is being provided. Protective apparel should be worn in accordance with the guidelines in this document. ADEQUATE TRIAGING, ISOLATION OF AT RISK PATIENTS IS ESSENTIAL
ANNEX 1 WORKFLOW FOR INPATIENT MANAGEMENT: HOSPITALS

POINTS TO NOTE:

1. SARS presentation may mimic other conditions such as viral fevers. Some immunocompromised patients may not mount a febrile response.
2. Patients may have more than one cause of infection or co-morbidities that mask SARS
3. SARS should be considered as a differential diagnosis in patients with unexplained fever or worsening CXR changes without other good explanations.
4. Triaging is essential. When identified, isolate potential SARS cases, limit the number of staff coming into contact with patient, minimise contacts with other patients and restrict visitors
5. In the event of uncertainty, it is essential to practice full precautions
Points to note:

1. Incubation period can be up to 10 days. It is therefore essential to monitor patients whose clinical picture is unclear and advise them to return for review should the symptoms progress.

2. SARS presentation may mimic other conditions such as viral fevers. Some immunocompromised patients may not mount a febrile response.

3. Patients may have more than one cause of infection or co-morbidities that mask SARS.

4. SARS should be considered as a differential diagnosis in patients with unexplained fever or worsening CXR changes without other good explanations.

5. Potential SARS risk patients (e.g. those who have had contact with a suspect or probable case but who remain afebrile and asymptomatic) should be advised to minimise contact with other members of the public.

6. Triaging is essential. If possible isolate potential SARS cases to a limited locality, limited staff, limited time, minimising contacts with other patients.
B2. TRAINING

Core components of an accredited training programme include:

1. Knowledge of SARS (latest update including MOH latest guidelines)

2. Knowledge of Health Care Infection Control principles including:
   a) Hand hygiene
   b) Standard precautions
   c) Use of masks, gowns, gloves and protective eyewear including proper fit testing for masks
   d) Use of other protective equipment e.g. PAPR
   e) Disposal of contaminated items
   f) Cleaning and disinfection of contaminated equipment

3. Other control measures
   a) The modular system
   b) Management of suspect SARS
   c) Management of probable SARS
   d) Staff monitoring
   e) Patient and contact monitoring

TRAINING IS COMPULSORY FOR ALL RELEVANT STAFF AS SPELT OUT UNDER "HEALTH CARE WORKER"

EVERY HEALTH CARE ORGANISATION MUST HAVE A DESIGNATED INFECTION CONTROL TEAM AVAILABLE TO ANSWER QUERIES FROM STAFF RE INFECTION CONTROL PROCEDURES AND TO AUDIT FOR COMPLIANCE
B3. PERSONAL PROTECTIVE EQUIPMENT (PPE)

MANDATORY INFECTION CONTROL FOR ALL HCWS COMING INTO CONTACT WITH SUSPECT OR PROBABLE SARS PATIENTS OR THEIR IMMEDIATE ENVIRONMENT.

Health-care workers caring for patients with Severe Acute Respiratory Syndrome (SARS) are at risk for acquiring SARS. Personal protective equipment (PPE) including hand hygiene, gown, gloves, and N95 respirators in addition to eye protection are mandatory for health-care workers to prevent transmission of SARS in health-care settings.

The transmission of SARS appears to occur predominantly by direct contact with infectious material, including dispersal of large respiratory droplets. Accordingly, the Ministry of Health recommends the use of N95 or equivalent respirators/masks.

SARS also appears to spread by direct contact with respiratory secretions, which makes touching contaminated objects a potential route of transmission. Although reaerosolization of infectious material is unlikely under normal use conditions, infectious material deposited on a respirator may cause it to become a vehicle for direct or indirect transmission. Therefore, additional infection control measures applicable to this specific situation are needed.

The basic recommended protective attire for CONTACT WITH SARS SUSPECT OR SARS PROBABLE PATIENTS includes fit tested N-95 respirators, goggles or face shields, disposable long sleeved gowns and disposable gloves. HAND HYGIENE (EITHER THROUGH HAND WASHING OR USE OF HAND RUB) IS CRITICAL BEFORE AND FOLLOWING CONTACT WITH SARS SUSPECT OR SARS PROBABLE PATIENTS. Re-usable equipment such as stethoscopes that are used on SARS suspect or SARS probable patients must be disinfected after use. Alcohol impregnated wipes are useful for this purpose.
RESPIRATOR (HIGH FILTRATION MASK)

The N95 respirator or equivalent mask must be used according to manufacturer’s instructions and fitted so that there is a proper seal between the masks sealing surface and the wearer’s face. It must be secured over BOTH the nose and the mouth. (Note that the instructions below apply only to these brands of masks: 3M8210, 1860, Johnson and Johnson N95 Masks. There are other types of masks, which are also effective, e.g. 3M1870 and Kimberly Clarke, but the instructions below do not apply to them. Masks also come in different sizes. Please ensure the correct size is used.

FIT TESTING
1. Every health care worker must be fit tested for the appropriate size
2. A qualified person must carry out fit testing for every health care worker
3. Once fit tested appropriately, the health care worker must use the same model and size
4. The self-seal check / fit check is mandatory for every staff on every occasion: on first putting on the respirator, on reapplying respirator and when respirator is dislodged.
5. The fit test should be repeated before a different model of size of mask is used
6. The wearer must be clean-shaven. Beard, stubble or long mustaches may cause leakage into the respirator
7. Individuals with a compromised respiratory system, such as asthma should consult a physician before wearing respirators

When putting on the mask:
1. Pick the mask up in your cupped palm and press it firmly against your face with the nosepiece on the bridge of the nose.
2. Stretch and position the top band high on the back of the head followed by stretching the bottom band over the head and below the ears.
3. Mould the mask fit by pressing the aluminum nosepiece with hands to tighten it. Do not pinch up the aluminum nose piece as this may lead to air leak
4. Perform a fit test by exhaling and checking for air leaks around the mask.

ONCE WORN IN THE PRESENCE OF A SARS PATIENT, THE MASK SHOULD BE CONSIDERED POTENTIALLY CONTAMINATED WITH INFECTIOUS MATERIAL (EVEN IF THIS IS NOT VISIBLE) AND TOUCHING OF THE MASK SHOULD BE AVOIDED.
Based on US CDC guidelines (19th April 03) if a sufficient supply of respirators is not available, healthcare facilities may consider reuse as long as the device has not been obviously soiled or damaged (e.g., creased or torn). Data on reuse of respirators for SARS are not available. Reuse may increase the potential for contamination; however, this risk must be balanced against the need to fully provide respiratory protection for healthcare personnel.

If N95 respirators are reused for contact with SARS patients, implement a procedure for safer reuse to prevent contamination through contact with infectious droplets on the outside of the respirator.

1. Consider wearing a loose-fitting barrier that does not interfere with fit or seal (e.g., surgical mask, and face shield) over the N95 mask.

2. Remove the barrier upon leaving the patient’s room and perform hand hygiene. Surgical masks should be discarded; face shields should be cleaned and disinfected.

3. Use care if placing a used N95 mask on the face to ensure proper fit for respiratory protection and to avoid contact with infectious material that may be present on the outside of the mask.

4. Discard the bag that used mask was stored in.

5. Perform hand hygiene after replacing the N95 mask on the face.

N95 or equivalent masks may not be available in some settings due to supply shortages or other factors. In this situation, a surgical (procedure) mask should be worn. Surgical masks will provide barrier protection against large droplets that are considered to be the primary route of SARS transmission. However, surgical masks may not adequately protect against aerosol or airborne particles, primarily because they allow for leakage around the mask and cannot be fit tested. The mask should resist fluid penetration and fit tightly around the mouth and nose when properly applied to the face.

**GOGGLES/ OTHER EYE PROTECTION**

1. Goggles or a face shield are worn by staff to avoid splashes or sprays of body fluids, secretions, or excretions to provide protection of the mucous membranes of the eyes, nose, and mouth from contact transmission of pathogens.
2. They should be assigned to each worker at beginning of their shift and worn when entering the probable or suspect SARS patient’s room or when in direct contact with these patients.

3. Disinfect goggles according to manufacturer’s instructions

**HEAD COVERS**

1. Head covers can be used in high risk areas
2. Proper disposal into biohazard bags is essential

**GOWNS**

1. Gowns and protective apparel are worn to provide barrier protection and to reduce opportunities for transmission.
2. Gowns worn correctly will prevent contamination of clothing and protect the skin of personnel from exposure.
3. Gowns worn by personnel during the care of probable or suspect SARS patients will reduce the opportunity for transmission of SARS from patients or items in their environment to other patients or environments.
4. When gowns are worn for this purpose, they must be removed before leaving the patient’s environment and hands are washed.
5. Long sleeved surgical gowns should be worn when in direct contact with probable or suspect SARS patients.
6. It is preferable to change gowns between patients but if there is no physical contact with patients, gowns may be reused during one shift.
7. If gowns are reused they should be hung in a way that enables the user to identify the front of the gown and ensure that the gown is always worn front out first.
8. Disposable long sleeved gowns must be used when providing direct patient care where there is likelihood for contamination. Gowns as much as possible should be single use and not reused. If soiled, wet or visibly contaminated, gowns should be discarded and changed immediately. Discarded used gowns should be placed into biohazard bags.
9. Gowns in the labour ward and the operating theatres should be splash-proof
10. If long-sleeved gowns are in short supply, disposable aprons should be worn and discarded after each patient contact.
11. Care must be taken to wash hands and arms thoroughly after each patient contact
GLOVES

Gloves are worn for three important reasons in hospitals. First, gloves are worn to provide a protective barrier and to prevent gross contamination of the hands when touching blood, body fluids, secretions, excretions, mucous membranes, and non-intact skin. Second, gloves are worn to reduce the likelihood that microorganisms present on the hands of personnel will be transmitted to patients during invasive or other patient-care procedures that involve touching a patient's mucous membranes and non-intact skin. Third, gloves are worn to reduce the likelihood that hands of personnel contaminated with microorganisms from a patient or a fomite (such as a surface or a piece of equipment) can transmit these microorganisms to another patient.

1. Disposable gloves must be worn at all times when in contact with probable or suspect SARS patients, their environment and any equipment used in their care.
2. Wearing gloves does not replace the need for handwashing, because gloves may have small, inapparent defects or may be torn during use, and hands can become contaminated during removal of gloves.
3. Hand hygiene must be performed after gloves are removed.
4. Gloves must be single use only
5. Gloves must be disposed of into a biohazard bag

HAND HYGIENE

1. Before and after having direct contact with a SARS suspect or SARS probable patient wash your hands with soap and water, or use a hand rub if soap and running water are not available.
2. Make sure all skin surfaces come in contact with water and soap or with hand rubs, and are rinsed thoroughly.
3. Watches and jewelry may limit the effectiveness of the hand hygiene and must not be worn.
4. Hand hygiene must always be performed:
   a) between patient contacts,
   b) before donning or after removing protective apparel,
   c) after contact with any respiratory secretions,
   d) after removing the mask
   e) before leaving the isolation area;
   f) before touching your personal items; and
   g) before meal breaks.
5. Hand hygiene is necessary even if gloves have been worn.

**STETHOSCOPE**

1. After using stethoscope, place it on the over-bed table before proceeding with the rest of the physical examination.
2. After the examination is over:
   a) Remove gloves
   b) Use handrub
   c) Remove gown without contaminating hands
   d) Clean stethoscope with alcohol wipes
   e) Use wipes to hold onto parts of stethoscope that may have been contaminated
   f) Wash hands/use hand-rub
3. Gloves must be removed and hands washed before handling notes, charts or X-rays, or writing in the patient's notes

**OTHERS**

**RESUSCITATION**

1. *First Person to attend to patient*
   a) Use N95 respirator, face shield/goggles, gowns
   b) Use gloves and proceed with resuscitation

2. *Doctor intubating patient*
   a) The most competent person on the team should carry out intubation.
   b) Full protective gear including the PAPR must be used. If not available, proceed with mask, eye protection, gloves, gown
   c) Any health care worker assisting with suctioning must also prepare himself by donning full protective apparel and a PAPR. If not available, proceed with mask, eye protection, gloves, gown

**PORTERING OF HIGH RISK PATIENTS (Patients to and from Isolation wards)**

1. Wear full PPE before attending to patient
2. Line trolley/wheel-chair with disposable sheet
3. Staff transferring the patient should wear PAPR wherever available
4. On reaching destination, transfer patient accordingly
5. Wipe surface with disinfectant (e.g. Presept) after use
6. Remove gown and gloves and discard into biohazard bag
7. Wash hands
8. Proceed on to do normal duties

CLEANING OF EQUIPMENT

1. Routine cleaning of equipment is mandatory especially after contact with a potentially infectious patient
2. Equipment includes trolleys, X ray tables, examination surfaces, couches and medical equipment
3. Surfaces are to be cleaned with phenolic or equivalent daily. Terminal cleaning for isolation rooms is done with phenolic or equivalent for all surfaces including walls, tabletops and curtains changed. Equipment are to be wiped down with 70% alcohol or equivalent according to manufacturer's instructions.

OTHER MEASURES

1. All health care workers should check temperatures 3 times a day (8am, 2pm, 8pm) and for be alert for respiratory symptoms.
   a) Temp greater than 37.5C (i.e. at least 37.6C) - if staff is well, with no other symptoms, do nothing, but recheck in 15 minutes time. Staff should not come into contact with patients or unprotected colleagues until repeat temperature check is below 37.5C
   b) If temp > 37.6C still or greater, proceed to staff clinic of each institution. If no other cause is found, or temp > 38C, then may require admission for isolation.
   c) If strong contact history, of if there are other cases from same ward/dept, or if there are other symptoms e.g. dry cough, myalgia, headache, then consider sending to Emergency Department TTSH even if < 38 C
2. Staff should keep a personal diary of contacts. The diary should not be taken into the patient's room
3. In the event of a fever staff should report directly to a designated sick staff clinic
4. In the event of a possible contact with a SARS patient, to inform designated supervisor by telephone
5. Health staff should practise infection control precautions in their home environment to minimise the risk of spreading to their friends and family members.
B4. MANAGEMENT OF VISITORS & VOLUNTEERS

1. All visitors must be registered and provide full contact details (name, NRIC, if possible, address, contact number). All visitors will have their temperatures taken and asked the following questions:
   a) Do you have high fever of more than 38°C or other symptoms such as cough, shortness of breath or difficulty in breathing?
   b) Have you been near a person who is now down with SARS?
   c) Have you been to SARS affected countries in the last 14 days?

2. All persons with a temperature of (>37.5°C) will not be allowed in.

3. Children with suspect SARS may have one parent or guardian staying in and the other parent or guardian as a registered visitor.

4. All visitors to probable or suspect SARS patients must wear full protective clothing.

5. For SARS probable cases, it is recommended that no visitors be allowed.
B5. SPECIAL PRECAUTIONS

INPATIENT SETTING
CARE FOR PROBABLE SARS CASES

1. Probable SARS cases should be isolated and accommodated as follows in descending order of preference:
   a) negative pressure rooms with the door closed
   b) single rooms with their own bathroom facilities
   c) cohort placement in an area with an independent air supply, exhaust system and bathroom facilities

2. Turning off air conditioning and opening windows for good ventilation is recommended if an independent air supply is unfeasible. Please ensure that if windows are opened they are away from public places.

3. WHO advises strict adherence to the barrier nursing of patients with SARS, using precautions for airborne, droplet and contact transmission.

4. All staff, including ancilliary staff must be trained in the infection control measures required for the care of such patients.

5. If possible, identify a member of the staff who will have the sole role of observing the practice of others and provide feedback on infection control.

6. Disposable equipment should be used wherever possible in the treatment and care of patients with SARS and disposed of appropriately. If devices are to be reused, they should be sterilized in accordance with manufacturers' instructions. Surfaces should be cleaned with broad spectrum disinfectants of proven antiviral activity.

7. Movement of patients outside of the isolation unit should be avoided. If moved the patients should wear surgical masks.

8. Visitors, if allowed by the health care facility should be kept to a minimum. They should be issued with personal protective equipment (PPE) and supervised.

9. All non-essential staff (including students) should not be allowed on the unit/ward.

10. Handwashing is crucial. Hands should be washed before and after contact with any patient, after activities likely to cause contamination and after removing gloves.

11. Alcohol-based skin disinfectants could be used if there is no obvious organic material contamination.

12. Particular attention should be paid to interventions such as chest physiotherapy, bronchoscopy or gastroscopy (Nebulisers should not be used in management of patient with probable or suspect SARS). PAPR or equivalent should be used by staff for such interventions.

13. PPE should be worn by all staff and visitors accessing the isolation unit.
14. The PPE worn in this situation should be:
   a) N95 mask or equivalent as a minimum
   b) Single pair of gloves
   c) Goggles /other eye protection
   d) Disposable gown

15. All sharps should be dealt with promptly and safely

16. Linen from the patients should be prepared on site for the laundry staff. Appropriate PPE should be worn in this preparation and the linen should be double bagged – inner biodegradable bag, inside a transparent bag, placed in outermost canvas bag

17. The room should be cleaned by staff wearing PPE using a broad spectrum disinfectant of proven antiviral activity

OUTPATIENT/TRIAGE SETTING

1. Those presenting to health care facilities who require assessment for SARS must be rapidly diverted by triage nurses to a separate area to minimize transmission to others

2. Patients considered to be a risk should be given a surgical mask to wear

3. Staff involved in the triage process should wear a N 95 mask and wash hands before and after contact with any patient, after activities likely to cause contamination and after removing gloves

4. Wherever possible, segregate patients who have risk factors for SARS, plus fever, symptoms, from those who do not.
# B6. ROLES AND RESPONSIBILITIES

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<td><strong>CEO (Chief Executive Officer)</strong></td>
<td>Overall responsibility for all processes</td>
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| **CMB (Chairman Medical Board)** | All Clinical processes including: Reporting to the DMS, MOH  
1. Ensuring proper infection control guidelines, processes and containment for all health care workers  
2. Ensuring proper infection control processes and containment for all patients |                                                                                               |
| **Director of Nursing**      | All process pertaining to nursing procedures including  
1. Infection control  
2. Communal housing arrangements for nursing staff | Reporting to CEO of hospital                  |
| **Infection Control Chairman/ Head* | 1. Auditing  
2. Contact tracing procedures  
3. To work with the CMB in ensuring processes are developed | Reporting to the CMB of the hospital          |

*Every health care organisation must develop their own institution specific infection control standard operating procedures.

Development of institution infection control standard operating procedures must include the following:

1. Inputs from infection disease physicians, nurses
2. Review of workflow, processes for all health care workers for SARS suspect, probable and Non SARS patients
3. Guidelines with regards to implementation of the modular system
4. Manpower deployment for all health care workers in the implementation of the modular system
5. Triaging processes and early identification, isolation of potential SARS patients
6. Training programmes for all health care workers
7. Housing arrangements for staff sharing accommodation
B7. THE MODULAR SYSTEM OF SERVICE PROVISION AND STAFF DEPLOYMENT

1. To reduce the risk of cross-infection. Hospitals should divide their services into self-contained units with minimal physical contact between each of their units.

2. Within each unit and especially in high-risk areas, it is essential to review workflow/processes to minimise the number of staff-staff, staff-patient contacts without compromising the quality of care provided. Where possible, multitasking (e.g. taking of temperatures and meal delivery) should be done by one staff rather than the nurse aide for temperature and the health attendant for meal delivery. Similarly for doctors, if possible, limit the number of procedures/encounters by different team members for one patient. One designated doctor to see patient, review the patient, take blood and carry out procedures if possible.

3. Team leaders in every specialty are to review the necessity of any procedure/activity as well as the number of staff necessary to carry out the activity/procedure.

4. Staff deployed to each unit should minimise contact both during office hours as well as outside office hours. This applies especially to the foreign staff with shared housing. Arrangements should be made to prevent cross infections with dormitory mates for staff who live in staff dormitories, if they have unprotected contact with suspect SARS case.

5. All staff should be encouraged to minimize contact with health care workers from other institutions wherever possible.

6. Where achievable, it is recommended that a reserve team of staff deployment be implemented. This will allow another team to be available to take over should an outbreak occur.

7. If there are common areas of usage e.g. radiology, special precautions must be taken to ensure minimisation of cross infection. The practice of having several patients waiting in holding areas in the X-ray department may result in cross-infection between patients, and should be stopped. For SARS patients, dedicated portable X-rays are preferred.

8. All common staff facilities e.g. staff lounge should be closed.

9. The modular system is necessary to ensure minimal disruption to health care services should there be a breach of infection control. It also aims to minimise the cross infectivity risk among patients and health care workers. However, the aim is always 100% protection of all health care workers 100% of the time.