

## New Zealand MOH Infection Control advice for the management of patients with suspected Severe Acute Respiratory Syndrome (SARS)\* (updated 4<sup>th</sup> April)

For detailed case definitions (of "suspect" and "probable" SARS patients) and clinical management recommendations please consult the bulletin sent electronically to all C&C DHB staff on 18 March. **Immediately notify** the Clinical Microbiologist/Infectious Diseases physician on call of any new suspected cases.

**SARS – should be suspected in patients presenting with symptoms of atypical pneumonia *and* a history *within the last 10 days* of recent travel or stay in South-East Asia *or* recent close contact with unwell travellers to that region or other areas of reported transmission of SARS.**

At this stage the causative organism is believed to be a coronavirus. Specific screening/diagnostic tests are being developed and will soon be available locally; specific treatments are under investigation but at present treatment is supportive – the emphasis must therefore be on minimizing contact by good infection control procedures as detailed below.

**Peak infectivity** occurs as patients develop obvious respiratory symptoms including cough. It is especially important at this stage for staff to use **eye protection in addition** to other personal protective clothing/equipment detailed below and to **avoid any aerosol-generating procedures** (eg use of nebulisers) with suspected or probable SARS patients.

**To minimise exposure of other patients, staff and hospital visitors, the World Health Organisation and the US Centers for Disease Control & Prevention advise:**

### 1. That all suspected SARS patients are managed in isolation using:

**Standard (blood/body fluid) Precautions** especially use of barrier protection when dealing with any blood or body fluids; use of masks (see airborne precautions below) **plus eye protection** (such as goggles or visor or use of a mask with attached eyeguard) when in close proximity to patients who are coughing (ie. all cases who meet the "probable" SARS case definition) and for all "suspect" SARS patients when procedures are done which are likely to generate splashes or sprays of respiratory secretions (eg. taking respiratory samples or suctioning) and scrupulous handwashing after removing gloves (see contact precautions below)  
*plus*

- **Airborne Precautions** placement of the patient in a negative pressure air-conditioned room and use of respiratory protection – particulate filter respirator masks (TB masks - Tecnol PCM 2000 mask) - by all staff and visitors,

*plus*

- **Contact Precautions** use of non-sterile gloves and disposable, impervious isolation gown by all staff and visitors for any contact with the patient, the patient's body fluids, with patient care equipment or with used linen or with waste

### 2. Patient masking for transport (ambulance or internal trolley transport) and short visits to other clinical departments (eg. Radiology)

- Patient movement outside negative pressure rooms should be avoided as much as possible.
- A **standard surgical mask** (eg. Tecnol Procedure mask 6001 or any other droplet containing mask) **must be placed over the patient's mouth and nose for transport** through corridors and public areas

(eg. between clinical areas such as Emergency Department and Radiology / wards /units) **or for investigation in departments such as Radiology.**

- **Attending staff** do not then require masks but should **continue use of gloves and gown** for direct contact with the patient, with blood or body fluids or with patient equipment.
- Receiving departments should be advised of the patient's isolation status when transfer or investigations are ordered and patients must be escorted during transport between negative pressure areas to ensure that appropriate precautions are maintained.
- See Equipment and Cleaning details below for advice on necessary equipment and environmental surface cleaning and decontamination following procedures on suspected SARS patients.

### **3. Emergency Dept. and Ward management details**

#### **Isolation room details**

- The patient must be isolated in a negative pressure single room – eg. rooms A3 or C7 in the Emergency Dept. or a room (preferably with attached ensuite bathroom) within the airborne isolation area in Ward 17.
- The isolation room **door must be kept closed at all times** except when required by entry or exit of personnel.
- A **laminated “STOP” isolation sign** (as distributed by the Infection Control Officers) must be placed on the door or where it will be visible to all who enter the room
- The patient should leave the room **only** when clinically necessary (see point 2. above).
- **Microshield 4 antiseptic handwash** should be used for all handwashing within the room and at adjacent washbasins outside the room (eg. in the anteroom) immediately following removal of protective clothing on exiting the isolation room.

Handwashing is the most important hygiene measure for preventing the spread of infection.

Gloves are not a substitute for handwashing. Hands must be washed and gloves replaced before and after significant contact with the patient, after activities involving handling of contaminated items and after removal of gloves.

- All staff and visitors must put on mask, gowns and gloves as specified before entering the isolation room.
- On leaving the isolation room, staff and visitors should remove gown, gloves and mask (in that order, masks should be handled only strings); place them into a yellow Biohazard waste bin and immediately wash their hands. (In Ward 17 this is done in the ante-room to the isolation rooms; in the Emergency Dept. this must be done immediately outside the isolation room and then the nearest washbasin must be used for handwashing.). These are single use items - fresh gowns, gloves and masks must be put on for any subsequent entry into the isolation room.
- Provide patients with ample supplies of disposable tissues and teach them to cover their mouth and nose when coughing or sneezing. Tissues must be handled and disposed of as Biohazard waste.
- Patient notes, including medicine and observation charts (and clinical staff's pens) **must not** be kept or taken into the room.
- Patient samples/specimens should be handled in the usual manner (placed in a Biohazard specimen bag for transport to the laboratory accompanied by a completed request form)

#### **Staff allocation**

- The primary focus must be appropriate, skilled response to the clinical needs of the patient
  - The nurse allocated to direct patient care on each shift is responsible for directing other health care workers and visitors on the nature of the precautions required
  - The number of staff allocated to the patient should be as small as possible to decrease the possibility of transmission to other patients within the ward or to other areas of the hospital.
- eg. Blood tests are to be taken by the Medical Officer ordering the test** rather than being put out for Phlebotomy service staff
- Whenever possible, care is provided by nurses/staff usually working in the ward
  - If care cannot be provided from within the ward, the Coordinator Central Nursing, her deputy or the after hours manager is contacted for assistance by the nurse in charge and consultation must include the Clinical Microbiologist/Infectious Diseases physician on call
  - A nurse employed by the Casual Resource may look after the patient only if s/he has the skills and knowledge necessary to care safely and confidently for the patient, and the Central Nursing Coordinator and the nurse agree to the assignment.

### **Equipment and supplies**

- Disposable equipment should be used wherever possible in the treatment of patients with suspected SARS.
- A range of sizes of non-sterile gloves must be available inside and at the entrance to the isolation room. Gloves must be changed as clinically indicated and removed and disposed of in the Biohazard waste each time personnel leave the isolation room.
- Disposable, impermeable isolation gowns are recommended (eg. Baxter yellow disposable isolation gowns). Gowns are single use items and may not be kept for reuse – they must be removed and disposed of in the Biohazard waste when personnel leave the isolation room and a new gown must be worn for re-entry.
- **Masks:**
  - Particulate filter respirator (Tb) masks must be available (eg. TecnoI PCM 2000 mask), preferably the fluid repellent orange version (PCM 2000 reorder number 47707 – available from Supply Dept.) and in the fluid repellent orange version with attached eyeguard (PCM 2000 reorder number 47757 – available as a buy-in, 15/box).
  - Standard surgical masks (eg. TecnoI Procedure mask 6001 – available from Supply Dept.) must be available for use by the patient to prevent dispersal of respiratory droplets if the patient must leave the isolation room.
  - Masks are single use items and must be removed and disposed of in the Biohazard waste each time staff and visitors leave the isolation room and a new mask must be worn for re-entry.
- Equipment and supplies necessary for patient treatment, safety and comfort must be available in the isolation room but storage of supplies and equipment within the room must be kept to a minimum and be replenished daily if necessary.
- **All** non-disposable equipment (eg. blood pressure cuffs, stethoscopes, tympanic membrane thermometers and including mobile units such as X-ray machines, IV pumps etc.) that is taken into the room must be decontaminated immediately after removal from the isolation room and before it may be reused in the care of other patients. At a minimum, items will require cleaning by surface wiping with a disposable cloth, detergent and water (or specialist products if these are normally used) and usual disinfection and sterilisation processes should be used for items normally reprocessed by these methods.
- It is recommended that some dedicated items of non-disposable equipment (eg. blood pressure cuffs) are left in the room for the duration of the patient's isolation so that discharge/terminal cleaning only is likely to be required.
- Bedpans and urinals should be emptied and reprocessed (immediately after use ie. Should not be left unprocessed on communal dirty benches in utility rooms) by the usual method in ward sanitisers. The isolation nurse may need assistance from other nursing staff outside the isolation room to facilitate this (these staff should use gloves, disposable aprons and facial protection when handling used toilet items and plan the transfer of items so that minimal contamination of environmental surfaces occurs).
- Metal surgical instruments requiring sterilisation in the Sterile Production Centre can be placed in a clear plastic bag, the opening secured and then returned in the usual container to SPC for routine decontamination (full body and facial protective equipment is worn routinely in the SPC decontamination area).
- A designated sharps container must be available in the room plus phlebotomy equipment if required (tourniquet, vacutainer collection system, A.N.D. disposal unit for vacutainer needles, etc).
- The wash bowl is kept in the room for the duration of the isolation. It is cleaned with hot soapy water after use, dried, then stored, inverted, off the floor. Bowls used to clean patients after incontinence episodes are to be emptied in the sluice room, rinsed and wiped over with 1% Chlorine solution then sanitised in the usual manner.

### **Food service**

- Usual meal trays, plates and cutlery may be used. Menus and trays do not need special marking or bagging as isolation items.
- After use, waste food should be disposed of within the isolation room and the trays and utensils should be returned directly (with assistance from staff working outside the isolation area) to the Food Services trolley for return to the kitchen for reprocessing. Staff in this area routinely wear protective clothing and the usual machine dishwashing process is adequate to decontaminate the trays and utensils.

### **Linen and waste handling**

- A linen skip (with a cloth linen bag lined with a hot water soluble alginate liner) and a Biohazard yellow waste bag must be present in the isolation room.
- All waste (except sharps which must go into the sharps container) produced in the room must go into the Biohazard waste bag.
- Care should be taken not to shake or flap the bedlinen. Change the bedlinen completely each morning shift and carefully scoop and fold used linen to place it in the used linen container.
- Linen and waste bags are to be replaced at least daily and when two thirds full.
- Nursing staff are responsible for the closure and replacement of bags. Double bagging and labelling are not required.

### **Visitors**

- Visitors other than close family members should be discouraged as the causative organism and infectivity of SARS is not yet clear and specific treatments have not yet been identified.
- Request visitors not to visit other patients in hospital if they are visiting patients with suspected SARS.
- All visitors must wear full protective clothing (gown, gloves and mask) to enter the isolation room. (See procedures detailed for staff).
- Nursing staff are responsible for ensuring that visitors comply with isolation procedures and should explain and assist as necessary.

### **Daily cleaning**

- The isolation room must be cleaned daily.
- Under the direction of the Team Leader, Clinical Coordinator or deputy, the cleaner must be directed and shown how to use full protective clothing (gown, gloves and mask).
- The room (and ensuite) must be cleaned last of all the rooms on the ward. Disposable cleaning cloths must be used.
- The cleaner must dust to a height of 6 feet the door, bed frame, bed light, window sills and furniture, shelves and ledges, trolleys and equipment. Dust must not be shaken out of cleaning cloths but must be contained by folding inwards.
- Locker tops, washbasins, taps and door handles must be cleaned with clean cloths, fresh hot water and detergent.
- The floor must be wet mopped with clean hot water and detergent.
- Isolation bathroom areas must be cleaned following the isolation room, using the same precautions.
- Dispose of all cleaning cloths in the Biohazard bag in the isolation room. The mop head must be placed in an alginate liner bag before being sent to the Laundry for routine laundering – special labelling is not required.
- The bucket is to be washed thoroughly with hot water and detergent and turned upside down to dry.
- The cleaner must be shown how and where to take off protective clothing in a safe manner, dispose of it into a Biohazard container and instructed to wash their hands immediately.

### **Terminal cleaning (on patient discharge)**

- Infection Control advice must be sought for the decontamination complex equipment.
- Nursing staff are responsible for supervising the safe stripping and cleaning of the isolation room and bathroom including instructing and supervising the cleaner in putting on protective clothing.
- Strip the bed of linen. Check for breaks in the impervious covering of the pillow and mattress.  
**Only** when breaks are detected - dispose of these items as Biohazard waste (pillows can be placed in a Biohazard waste bag; if mattresses are to be disposed of they must be contained within clean large plastic bags, clearly labelled as intended for Biohazard waste and Orderlies should be contacted to collect and place them directly into a large yellow Biohazard waste bin for transport to the Infectious Waste room.)
- Dispose of disposable equipment (used or unused stock) and other waste into the Biohazard waste bag.
- Leave the waste and linen bags to be tied off by the cleaner once cleaning is completed so that cleaning cloths and protective clothing can be discarded safely.
- The cleaner must clean all the surfaces including isolation bathrooms and floors as listed in the daily cleaning requirements with clean disposable cloths, clean hot water and detergent.
- All cleaning cloths must be disposed of into the Biohazard waste bag. Mop heads must go to the Laundry as detailed above in Daily cleaning and the bucket must be cleaned as above.
- Curtains:

- In the Emergency Department, ask the cleaner to check the curtains for soiling; if present, ask for the curtains to be changed.
- In the ward or unit setting, ask the cleaner to change the curtains. (New curtains must not be put up until the room has been fully cleaned and aired for 1 hour following completion of cleaning).
- The cleaner must be shown how and where to take off protective clothing in a safe manner, dispose of it into a Biohazard container and instructed to wash their hands immediately.
- The rooms should be left with the door closed for 1 hour before the bed is remade, curtains are rehung and the room is re-occupied. This is to allow for sufficient air changes to occur to ensure removal all possibly contaminated air.

**This information is subject to change and updating as further information and direction comes to hand from WHO, CDC and the NZ Ministry of Health.**

**For further infection control advice**

- Please contact an Infection Control Officer (Clo Taylor on ext/page 5925 or Viv McEnnis on ext/page 6514).

**References**

1. Garner JS, Hospital Infection Control Practices Advisory Committee " Guidelines for Isolation Precautions in Hospitals" Infection Control & Hospital Epidemiology 1996; 17: 53-80.
2. US Centers for Disease Control and Prevention information – Severe Acute Respiratory Syndrome "Interim Information and Recommendations for Health Care Providers" 15 March 2003.
3. NZ Ministry of Health – information distributed electronically on 18 March 2003 and sourced from WHO and CDC.