Management of Patients with SARI (Severe Acute Respiratory Infection) Guideline

SARI includes all suspected cases of: **Avian Flu (H5N1/H7N9)**
H1N1
MERSCoV
SARS

a) If SARI suspected as possible diagnosis

Isolate patient to minimise contact/exposure (patient to wear surgical face mask)

Staff to wear PPE (FFP3 mask, disposable apron/gown and gloves)

b) Criteria for Classification of SARI

Fever > 38°C
Lower respiratory tract symptoms (cough/shortness of breath)
Clinical or radiological evidence of pulmonary parenchymal disease or ARDS
Or Severe acute illness requiring hospitalisation not explained by any other illness

And:
Travel/Contact with travellers to **MERSCoV areas in last 14 days (MERSCoV)**
Travel/Contact with travellers to **China in last 10 days (H7N9)**
Travel/Contact with travellers to **area of world affected by Avian influenza A/H5N1(Bangladesh, China, Egypt, Indonesia, Vietnam) in last 7 days (H5N1)**

See separate guidance documents for MERSCoV, Suspected Influenza A H5N1 and H7N9 and SARS

c) Meets Criteria for Possible Case of SARI

Patient Location Isolation, preferably negative pressure room. Discuss with ID Consultant and Infection Control
Staff PPE PPE (FFP3 mask, disposable apron/gown, eye protection and gloves)
Inform Health Protection team See guidance
Initiate Urgent Testing See Laboratory Guidance

See separate guidance documents for MERSCoV, Suspected Influenza A H5N1 and H7N9 and SARS

SEVERE ACUTE RESPIRATORY INFECTION (SARI)

a) Spread

- SARI pathogens are mainly transmitted by large respiratory droplets and direct or indirect contact with infected secretions.
- MERSCoV has also been detected in blood, faeces and urine.

b) Prevention of Transmission

- Strict adherence to infection prevention and control practices especially hand hygiene, containment of respiratory secretions and the use of personal protective equipment (PPE)
- Administrative controls e.g. separation of patients with SARI
- Restriction of symptomatic workers and visitors
- Education of staff, patients and visitors
- Visitors must wear same protective clothing as staff
- A record must be kept of all visitors entering the cubicle

c) Patient Placement

Location of patient with suspected respiratory infection within Lothian Acute Care:

- Patients who do not require critical care will be admitted to Regional Infectious Disease Unit (RIDU) at WGH.
- If critical care is required, then the patient will be transferred to the four bedded transplant HDU at RIE (Ward 117) to minimise closure of critical care beds.
- Direct admissions through A & E, RIE will be admitted to Ward 117
- If more than four patients require ICU/HDU care then they will be admitted to Ward 112 (CTR HDU) RIE
- Patients in Ward 117 requiring Critical Care support will be cared for by Ward 116/118 medical and nursing staff. Medical staff will be allocated by the senior consultant in 118. Nursing staff will be organised by Clinical Nurse Managers (or deputies) of both areas in consultation with the out of hours bleep holder and Chief Nurses.
- Existing patients in Ward 117 will be relocated within other RIE critical care beds. This will be coordinated by clinical nurse managers and the consultant/s on call.
- Patients should be admitted directly to a specialised negative pressure room
- If no negative pressure room is available and patient is intubated, a neutral pressure side room with a closed ventilator circuit should be used.
- If no negative pressure room is available and patient unintubated, then a single room with en-suite facilities should be used
- Room doors should be kept closed at all times

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d) Ventilation Management

All respiratory equipment must be protected by a filter with high efficiency e.g. HME Filter (BS EN 13328-1).

- Disposable respiratory equipment should be used wherever possible.
- Re-usable equipment must be decontaminated in accordance with the manufacturer's instructions
- Ventilator circuits should not be broken unless absolutely necessary
- Ventilators must be placed on stand-by when carrying out bagging.
- Water humidification should be avoided and a heat and moisture exchange should be used if possible.
- Use only closed system suction.
- The use of non invasive ventilation is contra indicated due to droplet spread

e) Communication

The senior nurse & doctor on duty must ensure that patient admission is notified to:

- Senior directorate team, out of hours bleep holder (1590) and executive on call.
- Infection prevention and control team
- Infection Prevention and Control Duty Nurse
- Duty Consultant in Microbiology and virology
- Domestic & portering managers

f) Transfer

Intra-hospital transfers to other departments:

- Must only occur if clinical need dictates and any patient's transfer must be in collaboration with the Infection Prevention & Control Team (IPCT).
- The patient must be taken straight to and from the investigation/treatment room and must not wait in any communal area.
- If not intubated, the patient should wear a surgical mask if this can be tolerated to minimise the dispersal of respiratory secretions and reduce environmental contamination.
- To allow decontamination after any procedure, ideally patients should be at the end of a clinical list (see cleaning).

Transfer to another hospital

- Transfer of patients to another hospital should be avoided unless clinically necessary.
- Patients should not be transferred solely for the purpose of accommodation in a specialised negative pressure isolation room.
- If transfer is essential, the IPCT at the receiving hospital and the ambulance staff must be advised in advance of the special circumstances of the transfer.

SEVERE ACUTE RESPIRATORY INFECTION (SARI)

g) Infection Prevention and Control

Staff must comply with all infection control procedures as detailed below and in the additional information.

Hand Hygiene

- This is essential before and after all patient contact, removal of protective clothing and cleaning of the environment. Staff should follow the WHO 5 moments for hand hygiene

Personal Protective Equipment (PPE)

- Only essential staff should enter the isolation room wearing personal protective clothing (PPE).
- It is vital that PPE is worn for all airway management, including intubation.

h) High Risk Procedures

Procedures that produce aerosols of respiratory secretions should not be performed routinely or unnecessarily.

- This includes: intubation, extubation, suction, nebulisers, non-invasive ventilation, bronchoscopy, induced sputum, and humidification.

If high risk procedures are deemed necessary they should be planned and undertaken by experienced personnel with necessary PPE and using the minimum number of staff.

i) Further Information

See Management of Patients with SARI (Severe Acute Respiratory Infection)- Additional Information Guideline
See separate guidance documents for MERSCoV, Suspected Influenza A H5N1 and H7N9 and SARS

Links

http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/avian-influenza-mers-cov-ipcp-guidance-v7.2.pdf

http://www.hps.scot.nhs.uk/resp/avianinfluenza.aspx

http://www.hps.scot.nhs.uk/resp/coronavirus.aspx

http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/mers-primary-care-algorithm-v2.pdf

http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/mers-secondary-care-algorithm-v14.pdf

http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/information-healthcare-professionals.pdf

http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/mers-close-contact-algorithm-v14.pdf

SEVERE ACUTE RESPIRATORY INFECTION (SARI)

Management of Patients with SARI (Severe Acute Respiratory Infection) - Additional Information Guideline

This is additional guidance to supplement the Management of Patients with SARI (Severe Acute Respiratory Infection) *Protocol*

Personal Protective Equipment (PPE)

- **Only** essential staff **should enter the isolation room wearing personal protective clothing (PPE).**

To be worn by ALL staff and any visitors entering the room
Long-sleeved, fluid-repellent disposable gown.

- **Non-sterile disposable gloves.**
- **An FFP3 respirator conforming to (EN149:2001):** Fit testing must be undertaken prior to using this equipment and fit checking must be performed each time a FFP3 respirator is worn.
- **Eye protection compatible with the FFP3 respirator. Eye protection (prescription glasses do not provide adequate protection against droplets, sprays and splashes).**

It is vital that the PPE described above is worn for all airway management, including intubation.
NEED discussion about use of reusable PPE and confirmation of cleaning processes after use

Protective Clothing:
The following is the highest level of PPE available
Individual assessment of risk should be carried out with infection control team and senior clinicians
See link for PPE guidance
http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/avian-influenza-mers-cov-ipcp-guidance-v7.2.pdf

Put protective clothing on *in the following order* :
1. Theatre blues
2. Mask / respirator
3. Disposable visor / eye protection
4. Disposable cap
5. Water repellent long-sleeved gown
6. Disposable overshoes
7. Gloves
8. Second pair of gloves

Respiratory isolation packs containing gowns, notices, policies etc are kept in the main store room in Ward 116 and procedures room in 118.
Masks must be checked for secure fit after application and instructions for use, replacement and disposal followed carefully. Staff must be fit tested in advance and health & safety records kept.

After patient contact remove protective clothing *in the following order*:
1. Remove outer gloves and wash inner gloves at hand basin in patient's room
2. Remove gown, cap and overshoes and dispose of in clinical waste bag immediately before leaving patient's room
3. Use hand gel thoroughly before removing and disposing of mask and eye protection
4. Wash hands at nearest designated sink

• At the end of proposed period of contact e.g. break, end of shift staff should change out of scrubs in other evacuated room, shower and don own clothing or fresh uniform. Theatre blues should be placed in alginate bags then red linen bag.

• Jupiter respirators are to be used for staff performing procedures which put them at very high risk of contact with respiratory secretions e.g. intubation. Care must be taken to avoid contamination and hand washing/decontamination between stages of removal is required.

Equipment

- **Single use disposable equipment should be used wherever possible.**
- **Fans and air circulating equipment (bear hugger) should not be used.**

Management of Contacts

See: http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/mers-close-contact-algorithm-v14.pdf

Specimens

All specimens must be treated as biohazard**:**

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- **Use biohazard label**
- **Mark lab Request form accordingly**
- **Double bag sample**
- **Please see lab guidance "Information for Microbiologists and Virologists" for further details on transport and handling.**
  http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/mers-information-microbiologists-and-virologists-v6.pdf

  http://www.documents.hps.scot.nhs.uk/respiratory/coronavirus/mers-laboratory-testing-algorithm-v9.pdf
- **Laboratory should be notified prior to sending specimens.**
- Do not use the air tube system

Waste Disposal

- **Dispose of all waste in the isolation room as healthcare waste (orange stream) and double bagged.**
- **Linen should be placed in a water-soluble bag, then a red linen bag**
- **Mop heads should remain in the room and be changed at daily. Mop heads should go in an alginate bag**
- **Particular care should be taken to ensure vernagel silicon solidifying agent is used when disposing of suction receptacles and other body fluids.**

Cleaning

It is possible that the virus can survive in the environment for at least 48hrs, so environmental decontamination is vital.

- **Domestic staff must wear protective clothing as indicated above when entering the isolation room, and they must be made aware of the need for additional precautions and be trained accordingly.**
- **The isolation area should be cleaned after the rest of the ward area.**
- **Decontaminate the isolation room at least daily using :**
  - **A combined detergent disinfectant solution at a dilution of 1000 parts per million available chlorine (ppm available chlorine (av.cl.)); or**
  - **A detergent clean followed by disinfection (1000ppm av.cl.)**
- **Frequently hand-touch surfaces require more regular decontamination**
- **Environmental cleaning equipment must be single use or dedicated to the affected area.**
- **Following transfer and/or discharge of patient(s):**
  - **Remove:**
    All healthcare waste and any other disposable items
    Bedding/bed screens, treat as infectious linen
    Patient care equipment following decontamination
  - **The room/area should be decontaminated using:**
    A combined detergent disinfectant solution at a dilution (1000ppm av.cl.); or
    A detergent clean followed by disinfection (1000ppm av.cl.).

- **All surfaces and floors should be cleaned daily with a 1000 ppm Actichlor solution**
- **Mops & buckets should remain in the room and be changed every 24hrs at end of night shift.**
- **General cleaning will be done by nursing staff to minimise number of contacts**

Food

- **All trays and dishes leaving the room should be wiped or soaked in Actichlor solution, then washed in the dishwasher.**
- **Use disposable crockery & cutlery.**

Managing Body and Fluid Spills

See Appendix 3

Death

- **The policy for patients carrying a risk of infection, viewing and handling deceased patients should be followed and advice sought from the Infection control team**

- **Staff washing/preparing the body should wear disposable long-sleeved gowns and gloves. Facial protection should be worn if it there is anticipated/likely splashing of blood or body fluids.**
- **A body bag must be used: The act of moving a recently deceased body onto a hospital trolley for transportation to the morgue might be sufficient to expel small amounts of air from the lungs and thereby present a minor risk.**
- **Once in the hospital mortuary the body bag can be opened for viewing only.**

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- **If a post mortem is required then safe working techniques (e.g. manual rather than power tools and wearing full PPE as per pandemic influenza in the event power tools are used).**
- **Mortuary staff and funeral directors must be advised of the biohazard risk.**
- **Embalming is not recommended because of the potential presence of virus in blood.**

APPENDICES

Appendix 1

Enhanced Category B Transportation

Category B transportation is appropriate for sending samples from suspected coronavirus patients to local virology laboratories, the WoSSVC and Colindale.

The regulations for Category B transportation require an appropriately trained courier service (Do not use Royal Mail or DX**) who provide full tracking of their items the appropriate Category B documentation; and UN 3373 labelling on the documentation and the outside of the packages.**

As additional precaution for these samples it is required that the Category B packaging used is 'enhanced' as follows:

(a) The secondary packaging is of a robust nature and consists of a rigid container with a screw cap lid and 'O' ring (equivalent standard to category A packaging). (b) Enough absorbent material is included within the secondary packaging to absorb the total volume of the sample (c) Samples should be secure within the secondary packaging and separated with cushioning to prevent containers knocking together e.g. use of 'bubblewrap'. (d) Outer packaging must be appropriately labelled as per the regulations below (e) Paperwork must be located between the secondary and outer packaging i.e. not inside the secondary container

Soft packaging such as plastic bags must not be used as the secondary packaging material e.g. as in 'postal packs'. We will advise our couriers not to pick up such items so they will not be moved unless appropriately packaged.

This packaging requirement is similar to that described for safe transport of other higher risk diagnostic materials permitted under category B packaging, such as MTb cultures, as described in the Department of Health document: *Transport of infectious substances - best practice guidance for microbiology laboratories: Department of Health - Publications.*

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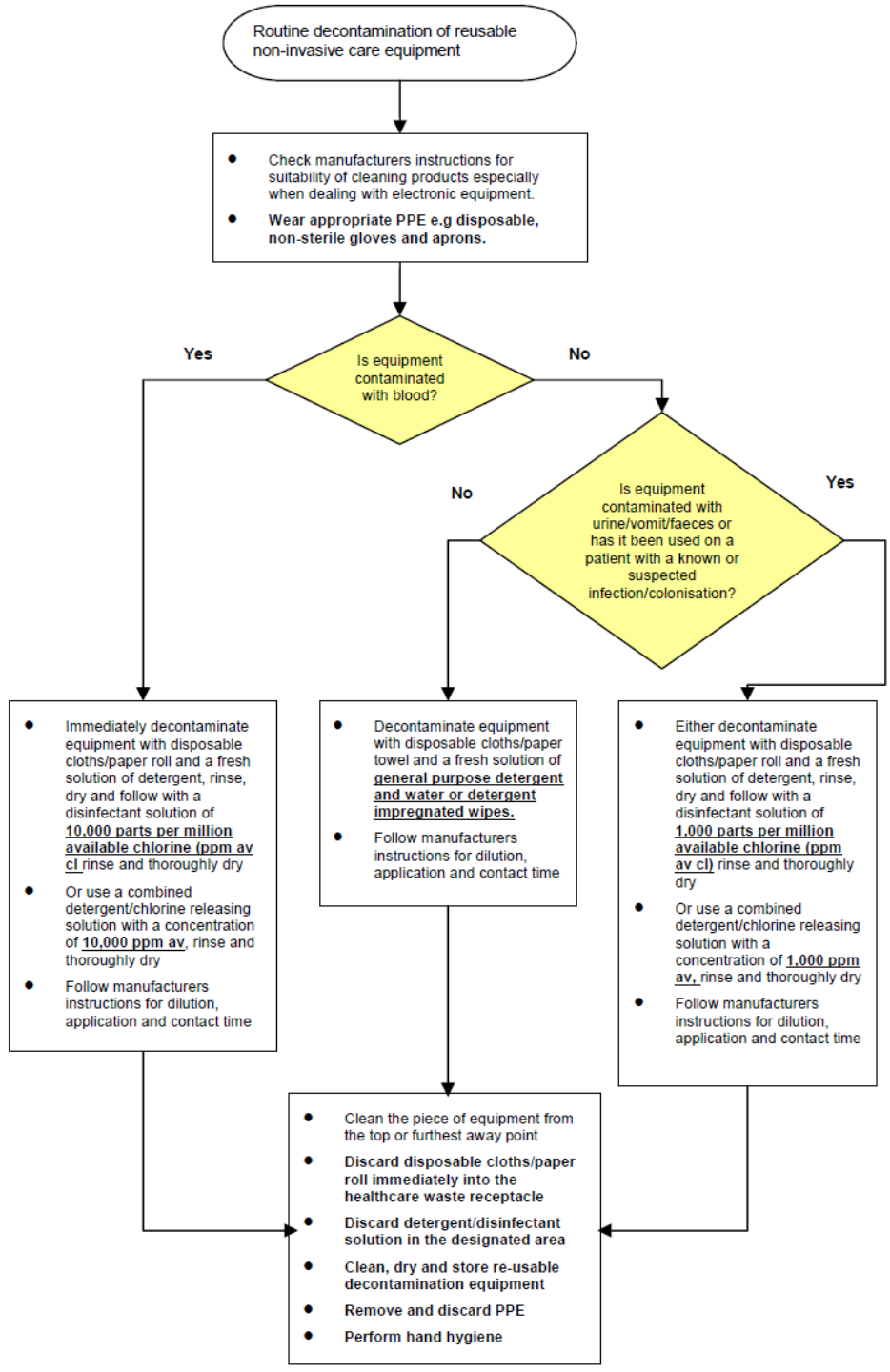
Appendix 2 - Routine decontamination of reusable non-invasive patient care equipment



From 'HPS Scotland Infection Control Advice MERS-CoV Feb 2015 v7.1 p9'

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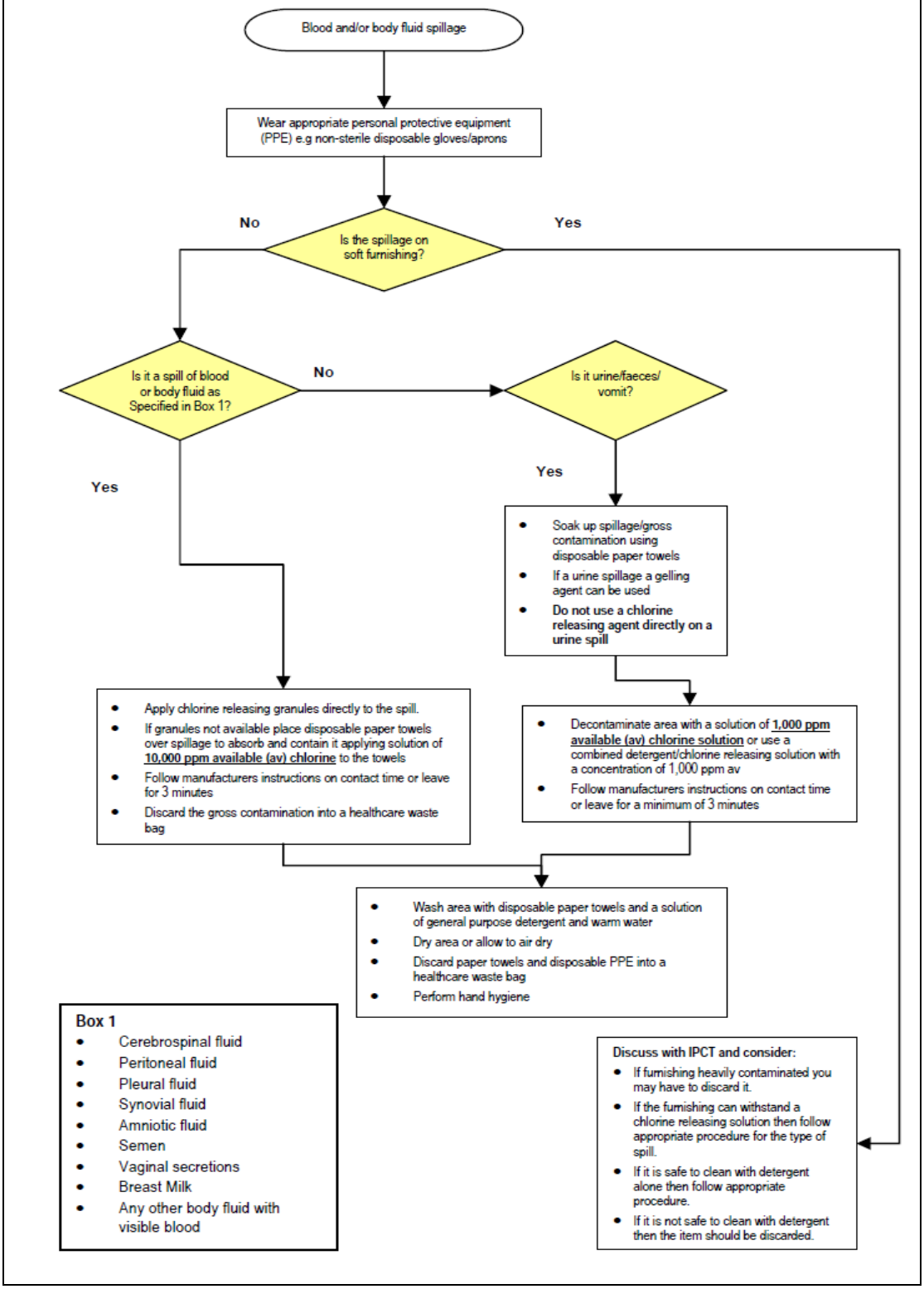
Appendix 3 – Management of blood and body fluid spillages



From 'HPS Scotland Infection Control Advice MERS-CoV Feb 2015 v7.1 p10'

Title: Management of Patients with SARI (Severe Acute Respiratory Infection) Guideline	
Authors: Dr Murray Blackstock, Dr Mark Dunn, Dr Mike Gillies, Dr Stuart McLellan	
Document Version: 1	**Review Date: September 2017**
Authoriser: QIT	**Date Authorisation: September 2015**

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