Introduction

This bed management toolkit has been developed as a ‘one stop shop’ to assist clinicians and bed management coordinators in healthcare facilities when single rooms are in short supply.

It will help in determining whether patients in acute care hospitals or residents of long term care facilities e.g. aged care or rehabilitation with certain infectious diseases or multi-resistant organisms require single rooms and ensuite bathrooms.

In large acute care facilities, cohorting should only be initiated after consultation with Infection Prevention and Control at the site/Local health Network, or the on call Infectious Diseases Consultant if available.

The flow charts are also available as part of the following guidelines:

> Infection Control Management of Infectious Diseases Summary Table
> Clinical Guidelines for the Management of Patients with Methicillin-resistant Staphylococcus aureus (MRSA)
> Clinical Guideline for the Management of Patients with Vancomycin-resistant Enterococcus (VRE)
> Multi-resistant Gram negative organisms (MRGN): Infection Prevention and Control Clinical Guideline
Infectious disease priority guide for allocation of isolation rooms and & patient cohorting

On suspicion of, or proven disease, the following guidance will assist with single room allocation & bed management

**Special situations**
- Pandemic influenza
- SARS / MERS
- Viral haemorrhagic fevers (VHF)

**Airborne & droplet infections**
- Chickenpox/disseminated shingles
- Measles
- Pulmonary tuberculosis

Pre-arrange accommodation
- **NOT** to wait in common area or with others
- **DO NOT COHORT**

**CONTACT, DROPLET** or **AIRBORNE PRECAUTIONS**
- Depending on current recommendations

**Lowest priority**

**Highest priority**

**Special situations**
- Carbapenem-resistant Gram-negative bacteria (CR-GNB)

**Airborne & droplet infections**
- Meningococcal disease with less than 24 hours antibiotics

**CONTACT PRECAUTIONS**

**Medium priority**

- *Clostridium difficile*
- *Diarrhoea / vomiting*
- Influenza-like illness
- Pertussis
- Respiratory viral infections (e.g. influenza, RSV)

**Single room** or **Cohort with dedicated bathroom facilities after consultation with IP&C**

**CONTACT, DROPLET** or **AIRBORNE PRECAUTIONS**
- Depending on current recommendations

**Lowest priority**

- Single room or Cohort after consultation with IP&C

**CONTACT PRECAUTIONS**

**NOTES**
1. If a negative pressure room is not available, place person in a single room with door closed. Ensure air-conditioning is vented to the outside.
3. Isolation is only required for 24 hours following administration of appropriate antibiotics.
4. Droplet precautions are required if Norovirus suspected.
5. Single room is required if admitted to an area where babies <12 months are housed
7. Higher priority should be given if the person is to be admitted to a high risk unit such as ICU, HDU, burns, transplant, renal or haematology/oncology, or if the person has faecal incontinence/diarrhoea

Contact precautions

Droplet precautions

Airborne precautions

Highest priority

Medium priority

Lowest priority
Infectious periods for common and significant infectious diseases for which isolation is required

<table>
<thead>
<tr>
<th>Disease</th>
<th>Infectious period</th>
<th>Special requirements</th>
<th>Additional comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Burkholderia cepacia</strong></td>
<td>Duration of illness</td>
<td></td>
<td>&gt; Highest risk to individuals with cystic fibrosis</td>
</tr>
<tr>
<td>Chickenpox (Varicella zoster virus)</td>
<td>1-2 days before onset of rash and until all lesions are dry and crusted over</td>
<td>Negative pressure room</td>
<td>&gt; Infectious periods may be prolonged in immunocompromised individuals</td>
</tr>
<tr>
<td><strong>Clostridium difficile</strong></td>
<td>Duration of symptoms</td>
<td></td>
<td>&gt; Individuals can be colonised with C. difficile and often required hospital-based precautions for the duration of their admission</td>
</tr>
<tr>
<td>Diphtheria (Corynebacterium diphtheriae)</td>
<td>&gt; cutaneous</td>
<td></td>
<td>&gt; Chronic carriers may shed for more than six months</td>
</tr>
<tr>
<td></td>
<td>Usually less than two weeks.</td>
<td></td>
<td>&gt; Hospital-based precautions should continue until skin lesion healed or until at least one negative skin lesion culture taken at least 24hrs after completing antibiotics</td>
</tr>
<tr>
<td></td>
<td>&gt; pharyngeal</td>
<td></td>
<td>&gt; Hospital-based precautions should continue until 2 negative cultures are collected 24 hours apart and not less than 24 hours after completing antibiotics</td>
</tr>
<tr>
<td>Haemophilus influenzae (type b), invasive</td>
<td>Until 48 hours after effective antibiotic therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>Up to seven days following onset of symptoms (e.g. jaundice)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis E</td>
<td>Unknown, but likely up to 14 days after onset of jaundice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herpes simplex virus primary, disseminated, severe or neonatal</td>
<td>Until lesions dry and crusted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human metapneumovirus</td>
<td>Duration of illness (up to seven days after symptom onset)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impetigo</td>
<td>Until 24 hours after effective antibiotic treatment commenced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease</td>
<td>Infectious period</td>
<td>Special requirements</td>
<td>Additional comments</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------</td>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Influenza</td>
<td>Up to five days after symptom onset</td>
<td></td>
<td>➤ Shedding is longer in children (up to 10 days) and immunocompromised individuals (weeks), but low risk of infection once respiratory symptoms have resolved</td>
</tr>
<tr>
<td>Measles</td>
<td>One day prior to onset of prodromal symptoms (or four days before onset of rash) until four days after onset of rash</td>
<td>Negative pressure room</td>
<td></td>
</tr>
<tr>
<td>Meningococcal disease (invasive)</td>
<td>Until 24 hours after effective antibiotics commenced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mumps</td>
<td>Until four days after onset of swelling</td>
<td></td>
<td>➤ Asymptomatic infection can occur, and exposed non-immune individuals should be considering infectious from day 9 - 26 following last exposure</td>
</tr>
<tr>
<td><em>Mycoplasma pneumoniae</em></td>
<td>Duration of symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parainfluenza</td>
<td>Duration of illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pertussis, whooping cough (<em>Bordetella pertussis</em>)</td>
<td>From onset of catarrhal symptoms (rhinorrhoea, sneezing etc.) up to 21 days after onset of any cough, or 14 up to days after onset of paroxysmal cough, or after 5 days of effective antibiotics completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory Syncytial Virus (RSV)</td>
<td>Duration of symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhinovirus</td>
<td>Duration of illness</td>
<td></td>
<td>➤ Hospital-based precautions usually only required for immunocompromised individuals.</td>
</tr>
<tr>
<td>Rubella</td>
<td>Up to four days after onset of rash</td>
<td></td>
<td>➤ Congenital infection – refer to Infection Control Practitioner</td>
</tr>
<tr>
<td>Scabies</td>
<td>Until 24 hours after effective topical treatment commenced</td>
<td></td>
<td>➤ If severe/hyper-infestation, individuals remain infectious until 24 hours after the second course of effective topical treatment</td>
</tr>
<tr>
<td>Disease</td>
<td>Infectious period</td>
<td>Special requirements</td>
<td>Additional comments</td>
</tr>
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<td>---------------------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Shingles</strong> (Herpes zoster)</td>
<td>Until all lesion are dry and crusted</td>
<td>Negative pressure room in disseminated disease</td>
<td></td>
</tr>
<tr>
<td><strong>Staphylococcal infection:</strong></td>
<td>Until 24 hours after effective antibiotics commenced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For scalded skin syndrome, major skin infection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Streptococcal infection:</strong></td>
<td>Until 24 hours after effective antibiotics commenced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Group A, pyogenes): For major skin infection, invasive disease</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Tuberculosis** (Mycobacterium tuberculosis): | Until viable organisms are no longer present in respiratory secretions | Negative pressure room | Risk of infection from extra-pulmonary tuberculosis is very low  
Demonstration of three consecutive negative sputum AFB smears usually required |
Bed management: Multi-resistant Gram negative (MRGN) Organisms

Placement should be based on a risk assessment.
The following questions will assist to identify risk factors for MRGN transmission.

The person has an active alert or has known MRGN carriage # or is an overseas/interstate patient transfer screened for CRE/CPE

Carbapenem-resistant Gram-negative bacilli (CR-GNB) (includes CRE & CPE) #
- *Enterobacteriaceae* (e.g. *E.coli*, *Klebsiella pneumoniae*)
- *Acinetobacter* sp.
- *Pseudomonas aeruginosa*

Discuss management with an ID physician or Infection Control Service on 7425 7161

Person must be isolated in a single room with ensuite bathroom
Transmission Based Precautions

ESBL or Amp C producing Enterobacteriaceae, e.g.
- *E.coli*
- *Klebsiella pneumoniae*
- *Enterobacter species*
- *Proteus species*

Multi-resistant strains of:
- *Pseudomonas aeruginosa*

Does the person have any of the following:
- Diarrhoea or uncontained faecal incontinence
- Discharging wound/s that cannot be contained by a dressing
- Presence of an enterostomy or urinary catheter
- Unable to comply with, or manage personal hygiene

YES

Single room with ensuite bathroom *& place on contact precautions
*If an ensuite bathroom is not available a shared bathroom can be used. However, it must be cleaned & disinfected more frequently e.g. twice a day.

NO

Can be placed in a shared room on Standard Precautions only with others at low risk for infections i.e. other people in the shared accommodation/bay do not have:
- unhealed wounds present
- indwelling devices e.g. PEG, indwelling urinary catheter
- not on immune suppressive therapy.

Do not cohort with another person carrying a different MRO e.g. MRSA, VRE

NOTE: The risk of multi resistant organism (MRO) transmission can be minimised by adherence to hand hygiene, environmental cleaning and antimicrobial stewardship i.e. standard precautions

In large acute hospitals, contact precautions should be maintained in a cohort situation.

For further information on MRGN see SA Health MRGN Guideline

Infection prevention and control: bed management toolkit v1.4 (Nov2017)
Bed management: Methicillin-resistant *Staphylococcus aureus* (MRSA)

Placement should be based on a risk assessment. The following questions will assist to identify risk factors for MRSA transmission.

**The person has an active alert or has known MRSA carriage**

Does the person have an unhealed wound?
- chronic infected ulcer
- weeping wound
  (healed surgical wounds not included)

**YES**

**NO**

Does the person have an indwelling medical device present?
- e.g. PEG, long term indwelling urinary catheter, wound drain
- external fixation device
- vascular access device

**YES**

**NO**

Does the person have an exfoliating skin condition?
- e.g. psoriasis

**YES**

**NO**

Can be placed in a shared room on Standard Precautions only **with others at low risk for infections**

i.e. other people in the shared accommodation/bay do not have:
- unhealed wounds present
- indwelling devices e.g. PEG, indwelling urinary catheter
- not on immune suppressive therapy.

Do not cohort with another person carrying a different MRO e.g. ESBL, VRE

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**NOTE:** The risk of multi resistant organism (MRO) transmission can be minimised by adherence to hand hygiene, environmental cleaning and antimicrobial stewardship. **In large acute hospitals, contact precautions should be maintained in a cohort situation.**

For further information on MRSA, see [SA Health MRSA Guideline](#)
Bed management: Vancomycin-resistant enterococci (VRE)

Placement should be based on a risk assessment. The following questions will assist to identify any risk factors for VRE transmission.

**The person has an active alert or has known VRE carriage**

- **Does the person have diarrhoea or uncontained faecal incontinence?**
  - **YES**
  - **NO**

- **Does the person have a discharging wound?**
  - i.e. a weeping wound that cannot be contained by a dressing
  - **YES**
  - **NO**

- **Does the person have an enterostomy?**
  - **YES**
  - **NO**

- **Is the person able to comply with, or manage, personal hygiene?**
  - **YES**
  - **NO**

**Single room with ensuite bathroom** & place on contact precautions.
*if an ensuite bathroom is not available, a shared bathroom can be used. However, it must be cleaned & disinfected more frequently, e.g. twice per day.

**Note:** Consider use of a commode rather than a shared toilet.

Can be placed in a shared room on Standard Precautions only with others at low risk for infections i.e. other people in the shared accommodation/bay do not have:
- unhealed wounds present
- indwelling devices e.g. PEG, indwelling urinary catheter
- not on immune suppressive therapy.

Do not cohort with another person carrying a different MRO e.g. MRSA, ESBL

**NOTE:**
The risk of multi resistant organism (MRO) transmission can be minimised by adherence to hand hygiene, environmental cleaning and antimicrobial stewardship. In large acute hospitals, contact precautions should be maintained in a cohort situation.

For further information on VRE, see [SA Health VRE Guidelines](#).