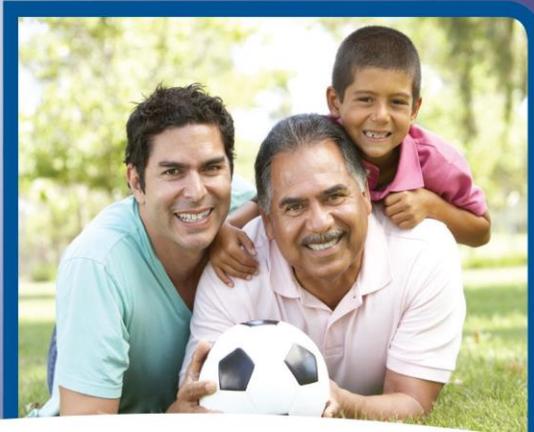
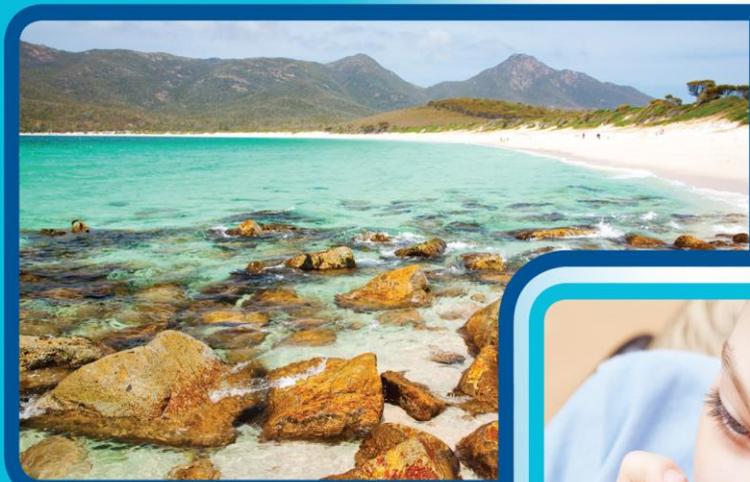


# Management of patients with pathogens of concern in non-acute healthcare settings



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Tasmanian Infection Prevention and Control (TIPCU)

Department of Health and Human Services, Tasmania

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# Background

The National Health and Medical Research Council (NHMRC) publication *Australian Guidelines for the Prevention and Control of Infection in Healthcare* outlines a risk management framework for infection prevention and control activities within healthcare.

In addition, the Australian Commission for Safety and Quality in Healthcare (ACSQHC) published the *National Safety and Quality Health Service Standards* in late 2012 with the aim of “protecting the public from harm and to improve the quality of health service provision”.

Both of these publications outline nationally agreed upon, evidence based strategies that can be used to reduce the risk of transmission of infectious agents within healthcare.

The management of patients who have been identified as either colonised or infected with a pathogen of concern requires a risk management approach to reduce the risk of transmission of these organisms between patients, clients and/or residents.

There are different types and levels of risk in different healthcare settings.

When healthcare facilities are developing local procedures they should perform a risk assessment that looks at how to identify and minimise risks in the context of their own particular setting and situation.

This guideline uses a risk management approach to assist non-acute healthcare settings within Tasmania to:

- Manage patients who have been identified as either colonised or infected with specific pathogens of concern.
- Reduce the risk of transmitting pathogens of concern between patients, clients and/or residents.

This guideline uses and adapts information in the *Patient-centred risk management strategy for multi-resistant organisms* produced and published in 2011 by the Quality, Safety and Patient Experience Branch, Victorian Government.

TIPCU acknowledges and thanks the authors for allowing TIPCU to use and adapt this work.

# Risk management

A **hazard** is an item or situation or a threat that can cause harm, while a **risk** is the probability that the hazard will cause harm.

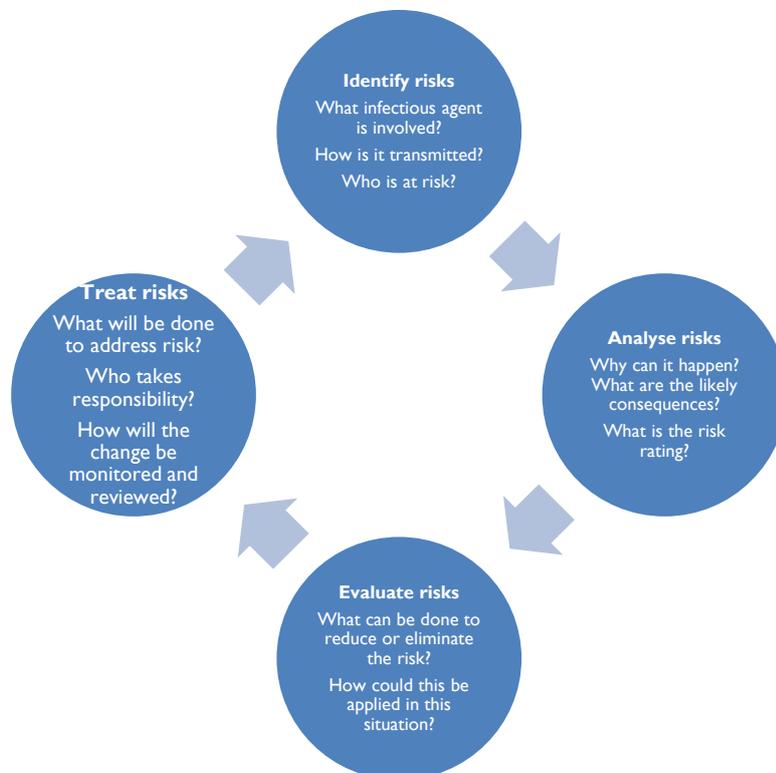
In the context of this guideline, the hazard is a pathogen of concern while the risk is the probability of a patient, client or resident acquiring a pathogen of concern due to activities that have taken place within a Tasmanian non-acute healthcare setting and/or are associated with healthcare activities delivered by the non-acute healthcare facility.

The aim of risk management is to ameliorate risk and this can occur on a number of different levels within a non-acute healthcare setting:

- Facility wide by providing a facility wide risk management policy, staff education, and monitoring and reporting potential infection risk activities.
- Ward or department based where risk management is a component of all ward based procedures.
- Individual level where infection risks are assessed for particular procedures.

Non-acute healthcare facilities differ widely across Tasmania so each facility must be able to assess infection risks in relation to activities that occur within their own site.

## Risk assessment and management flowchart



## Outline of a patient centred risk management plan

A risk can be defined as the estimate that an identified hazard will cause harm. *AS/NZS ISO 31000:2009 – Risk management* outlines established risk management principles which can be translated into a patient centred risk management plan for non-acute healthcare facilities.

|   |
|---|
| <b>Establish the context</b>  |
| This risk management plan is for use by non-acute healthcare facilities within Tasmania.  |
| <b>Avoiding the risk</b>  |
| Non-acute healthcare facilities are not able to avoid the risk as these facilities will, on occasion, be required to manage a patient/client/resident with a pathogen of concern.   |
| <b>Identify the risk</b>  |
| Communicate with the transferring acute health facility (where applicable) to identify a patient/client/resident infected or colonised with a pathogen of concern.<br><br>Review patient alert system to identify a patient/client/resident infected or colonised with a pathogen of concern.   |
| <b>Analyse and evaluate the risk</b>  |
| Assess if the patient/client/resident with a pathogen of concern has risk factors/behaviours that would increase the risk of transmission of the organism to other patients/client/residents.<br><br>Assess organisational measures such as policies and procedures that could be put in place within the facility to reduce the risk of transmission of the pathogen of concern.   |
| <b>Modify the risk</b>  |
| Use standard precautions for routine care of a patient/client /resident with a pathogen of concern.<br><br>Use contact precautions where the patient/client/resident with a pathogen of concern has risk factors/behaviours that would increase the risk of transmission of the organism to other patients/client/residents.<br><br>Provide education to staff about pathogens of concern, standard precautions and transmission-based precautions. |
| <b>Monitor the risk</b>   |
| Implement surveillance to monitor if transmission of the pathogen of concern occurs.  |

# Definitions

**Non-acute healthcare setting** – in the context of this guideline a non-acute healthcare setting includes the following – residential and aged care facilities, community health centres, mental health inpatient facilities, correctional services inpatient facilities.

**Infection** – invasion and growth of microorganisms into the body (systemic infection) or a body site (local infection) resulting in an immune response with or without symptomatic disease.

**Colonisation** – microorganisms live and reproduce on or in the body without causing disease.

**Diarrhoea** – three or more unformed stools (that take the shape of the container) within a 24 hour period.

**Standard precautions** – basic infection prevention and control work practices that are used for the care of all patients/clients/residents irrespective of their diagnosis, to reduce the risk of transmission of microbes.

**Transmission based precautions** – infection prevention and control precautions that are used in addition to standard precautions when managing patients, residents or clients suspected or known to be infected with particular agents transmitted by the contact, droplet or airborne routes.

**Pathogens of concern** - there are a number of micro-organisms that are of concern within healthcare due to:

- antimicrobial resistance making infections harder to treat
- easy transmissibility making outbreaks more difficult to control
- ability to persist in the environment thus decreasing the effectiveness of routine environmental cleaning
- a combination of one or more of these factors.

## Pathogens of concern relevant to this guideline

**Methicillin resistant *Staphylococcus aureus* (MRSA).** *Staphylococcus aureus* (*S. aureus*) is a Gram positive bacteria that colonises human skin and mucosa as well as causing a wide variety of infections ranging from superficial skin infections to severe life threatening infections such as pneumonia or septicaemia.

*S. aureus* resistant to the antibiotic methicillin, are termed methicillin-resistant *Staphylococcus aureus* (MRSA) and were first identified in the early 1960's.

Since that time, MRSA has become a significant healthcare associated pathogen and has become endemic in many parts of the world.

**Vancomycin resistant enterococcus (VRE).** Enterococci are Gram positive bacteria normally present in the human gastrointestinal and female genital tract. Enterococci can cause infections of the urinary tract, bloodstream and wounds.

Enterococci that have acquired resistance to the antibiotic vancomycin are called vancomycin resistant enterococcus or VRE.

VRE infections can be more difficult to treat than those caused by vancomycin sensitive enterococci.

Factors believed to contribute to the transmission of VRE in hospitals are ineffective infection control practices, overuse of antibiotics and suboptimal environmental cleanliness.

**Multi drug resistant Gram negative organisms (MRGN).** There are a wide variety of Gram negative bacteria but the ones of most concern within healthcare are Gram negative bacteria with particular antibiotic resistances.

These are Gram negative bacteria that exhibit:

1. multiple classes of drug resistance for example multidrug resistant *Acinetobacter* spp and multi-drug resistant *Pseudomonas* spp
2. resistance mechanisms such as ability to produce enzymes that breakdown critically important antibiotics, thus making the drug ineffective. This group includes extended spectrum beta-lactamase producers (ESBL) and Carbapenemase Producing Enterobacteriaceae (CPE) including Metallo-beta lactamases producers (MBL) and *Klebsiella pneumoniae* carbapenemases (KPC).

***Clostridium difficile*** is a bacterium that produces a toxin that causes a bowel infection with subsequent diarrhoea, and is a common cause of healthcare associated diarrhoea.

*Clostridium difficile* infection (CDI) causes significant patient morbidity and mortality and can result in increased hospital stays and costs.

Factors that may contribute to CDI include the overuse of antibiotics, ineffective infection control processes and suboptimal levels of environmental cleanliness.

# Infection control in healthcare

Infection prevention and control uses work practices that reduce the risk of transmission of infectious agents in healthcare through a two tiered approach using standard and transmission-based precautions.

Standard precautions are used for the care of all patients/clients/residents, irrespective of their known or suspected infectious status.

Transmission-based precautions are used in addition to standard precautions when using standard precautions alone may not be enough to prevent transmission of infectious agents and/or the infectious agent is a pathogen of concern in healthcare.

## Standard precautions

**Standard Precautions** involves the use of:

### Hand hygiene

- Perform hand hygiene using an alcohol based hand rub or liquid soap and water
- Perform hand hygiene at the '5 Moments for Hand Hygiene'
  1. Before touching a patient/client/resident
  2. Before a procedure
  3. After a procedure or body fluid exposure risk
  4. After touching a patient/client/resident
  5. After touching a patient/client/residents immediate surroundings

### Respiratory hygiene and cough etiquette

- Cover your nose and mouth when you cough or sneeze, preferably with a tissue but if you don't have a tissue, cough or sneeze into your elbow or upper arm.
- Perform hand hygiene after coughing, sneezing or using tissues

### Personal protective equipment

- Wear appropriate PPE when you anticipate contact with blood and/or body fluids.
- PPE includes gloves, fluid resistant gowns and/or aprons, eye protection, face shields and surgical masks.
- Change PPE between patients and/or when soiled.
- Perform hand hygiene before and after PPE removal.

### Aseptic technique

- Use aseptic technique to prevent micro-organisms being introduced into a susceptible site by hands, equipment and the environment.

# Standard precautions (continued)

## Waste management

- Segregate waste at the point of generation and contain it into the appropriate colour coded and labelled receptacle.

## The safe use and disposal of sharps

- Handle sharps safely during and after procedures and when disposing of used sharps.
- Do not recap, bend or break used needles after use.
- The person who has used a sharp is responsible for its safe disposal.
- Discard sharps at the point of use into an approved sharps container.

## Routine environmental cleaning

- Use detergent solution for routine cleaning of environmental surfaces.
- Routine disinfection is not required but may be indicated following a blood or body fluid spill, in the presence of drug resistant organisms, as part of transmission based precautions or during an outbreak.

## Cleaning shared patient equipment and items

- Clean shared equipment with detergent solution or detergent wipes between patient/clients/residents.
- Routine disinfection is not required but may be indicated following a blood or body fluid spill, in the presence of drug resistant organisms, as part of transmission based precautions or during an outbreak.

## Single use items

- Do not reprocess items and equipment marketed as single use or items marked with the single use only symbol:



## Linen management

- Handle used linen in a manner that will prevent microorganism dispersal
- Wear PPE where appropriate when handling linen soiled with blood or body fluids.

# When to use contact precautions

**Contact precautions** are one type of transmission-based precautions.

Contact precautions are used in addition to standard precautions and may be required where a patient/client/resident with a pathogen of concern has certain clinical risk factors that increase the risk of transmission of the pathogen to other patients/clients/residents.

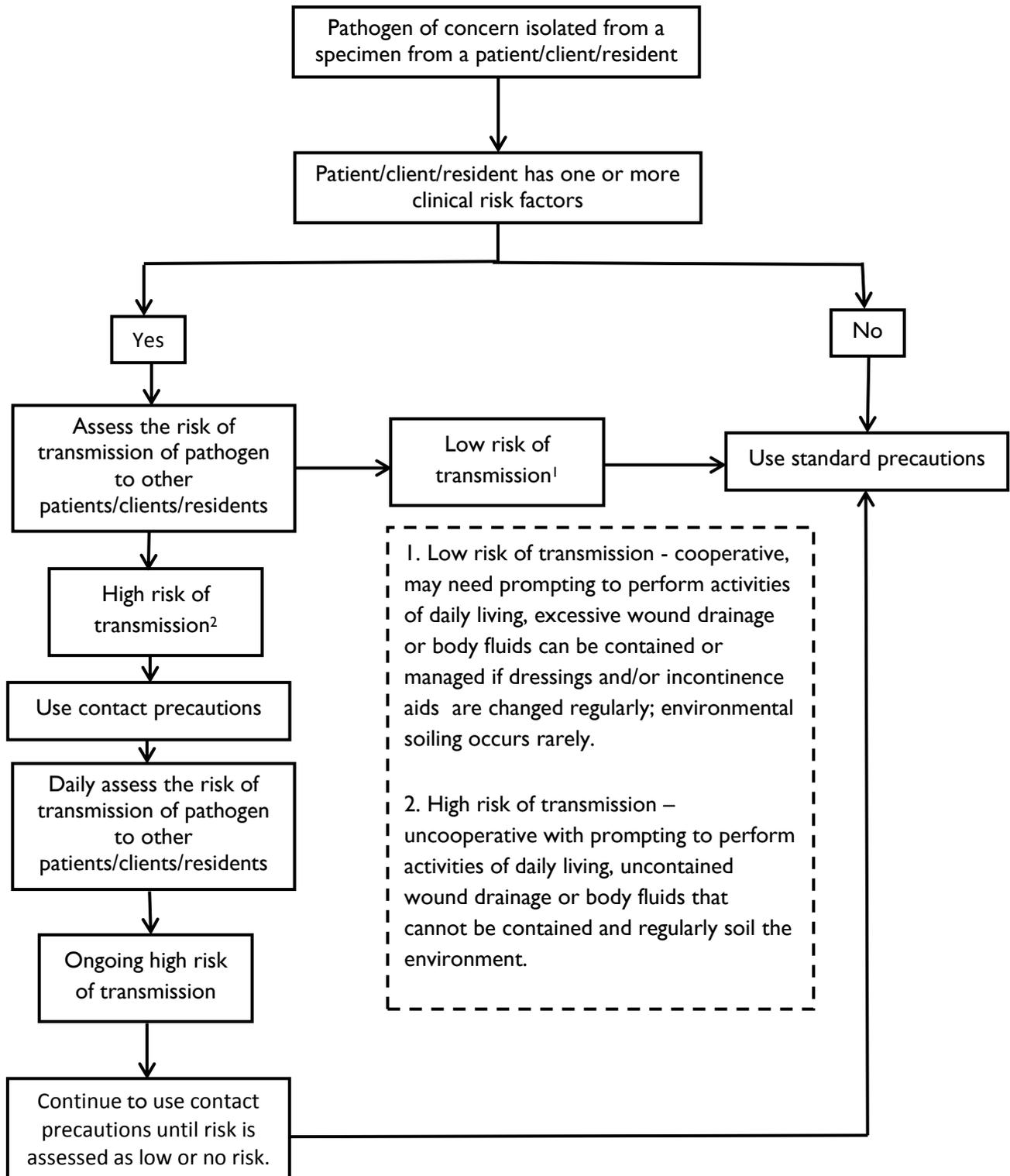
Use contact precautions after:

1. The transmission risk has been assessed.
2. The decision made that using standard precautions alone will not reduce the transmission risk.

## **Clinical risk factors where contact precautions may be indicated:**

- Copious or uncontained drainage from a wound colonised or infected with a pathogen of concern.
- Copious or uncontained respiratory secretions and/or urine, from a person colonised or infected with a pathogen of concern in their respiratory tract or bladder.
- Copious or uncontained diarrhoea from a person who is faecally colonised with a pathogen of concern.
- Diarrhoea of unknown aetiology OR caused by *Clostridium difficile*.
- A patient/client/resident with an infection caused by a pathogen of concern **and** is receiving specific antimicrobial treatment.

## Flowchart outlining when to use contact precautions



## Contact precautions applicable to non-acute settings

| Issue                                  | Description   | Outline  |
|--|---|--|
| Accommodation – inpatient/residential  | Single room where possible; the room door can remain open | <p>If the patient/resident resides in a shared room, assess the risk of transmission of the pathogen of concern to the co-occupants (eg diarrhoea, presence of indwelling devices, wounds).</p> <p>A temporary move to a single room, if available, may be required for a short period until the patient/resident is able to be managed using standard precautions alone.</p> <p>Contact precautions can be implemented in a shared room but can be more difficult to manage for staff and residents.</p> <p>Use the ACSQHC Contact Precautions signs outside the resident's room.</p> |
| Accommodation – non-inpatient settings | Perform risk assessment                                   | <p>Most patient/clients in non-inpatients settings do not require specialised accommodation such a waiting area apart from other patients/clients.</p>   |
| Personal Protective Equipment (PPE)    | Gloves and gowns/aprons                                   | <p>Staff must wear fluid impervious gown and/or apron and gloves when entering the immediate patient care area for direct care of the resident and for contact with environmental surfaces.</p> <p>For shared residents rooms - change PPE and perform hand hygiene between contact with each resident in the same room.</p> <p>Change gown and gloves if they become extensively soiled during patient care activities.</p> <p>Remove gown and gloves when leaving the patient care area.</p> <p>Perform hand hygiene before putting on and after removing gloves and gown.</p>       |
| Cleaning                               | Patient room and immediate environment                    | <p>Clean the residents room, bathroom, toilet and all high touch surfaces and items at least daily using a detergent and water solution followed by a suitable environmental disinfectant OR a detergent/disinfectant combination product.</p> <p>When Contact Precautions are no longer required, thoroughly clean the residents room, bathroom, toilet and all high touch surfaces with a detergent and water solution followed by a suitable environmental disinfectant OR a detergent/disinfectant combination product.</p>  |

## Contact precautions applicable to non-acute settings (continued)

| Issue  | Description  | Outline   |
|--|--|---|
| Cleaning   | Shared patient equipment   | Clean shared patient equipment between use using detergent and water solution followed by a suitable environmental disinfectant OR a detergent/disinfectant combination product.  |
| Linen and waste  | All used linen and waste   | Dispose of waste and handle laundry as per routine processes.   |
| Education  | Informing residents, visitors and families about Contact Precautions | <p>Provide education and information to residents, visitors and families regarding the precautions being used.</p> <p>Ask visitors to speak with the nurse before entering the resident room.</p> <p>Non-staff who assist with a residents care should use the same PPE as the HCWs.</p> <p>All visitors should perform hand hygiene before and after visiting the resident.</p>                                      |
| Other issues for patients/clients/residents with a pathogen of concern | Communal activities  | <p>Should not have restrictions placed on their movement both inside and outside the facility.</p> <p>Can join other patients in communal areas such as sitting, dining or therapy rooms.</p> <p>Can receive visitors and go out of the facility (where applicable).</p> <p>All residents should perform hand hygiene or be assisted as necessary before leaving their room or participating in group activities.</p> |
|  | Admission to facility  | Cannot be refused admission to a non-acute setting based on the presence of a pathogen of concern.  |

# Summary of infection prevention and control precautions for in non-acute settings

- Use standard precautions for all patients/residents/clients including those colonised or infected with a pathogen of concern.
- Contact precautions are rarely required but may be clinically indicated for patients/residents/clients with a specific risk factor for transmission.
- Routine screening of all patients for pathogen/s of concern is not required.
- If a patient/client/resident with a confirmed pathogen of concern requires treatment or admission to an acute hospital, ensure this is communicated to the receiving facility.

# Resources

Aged Care Standards and Accreditation Agency [www.accreditation.org.au/](http://www.accreditation.org.au/)

The Australian Commission for Safety and Quality in Healthcare [www.safetyandquality.gov.au/](http://www.safetyandquality.gov.au/)

The Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010), [www.nhmrc.gov.au/book/html-australian-guidelines-prevention-and-control-infection-healthcare-2010](http://www.nhmrc.gov.au/book/html-australian-guidelines-prevention-and-control-infection-healthcare-2010)

Hand Hygiene Australia <http://www.hha.org.au/home.aspx>

National Safety and Quality Health Service Standards [www.safetyandquality.gov.au/our-work/accreditation-and-the-nsqhs-standards/](http://www.safetyandquality.gov.au/our-work/accreditation-and-the-nsqhs-standards/)

Tasmanian Infection Prevention and Control  
[www.dhhs.tas.gov.au/publichealth/tasmanian\\_infection\\_prevention\\_and\\_control\\_unit](http://www.dhhs.tas.gov.au/publichealth/tasmanian_infection_prevention_and_control_unit)

Victorian Government, Quality, Safety and Patient Experience Branch (2011), *Patient-centred risk management strategy for multi-resistant organisms*, [www.health.vic.gov.au/infectionprevention/](http://www.health.vic.gov.au/infectionprevention/)