Infection Prevention and Control

On completion of this online package and assessment quiz you must also complete the Hand Hygiene Australia ‘5 Moments for Hand Hygiene’ assessment quiz.
Infection Prevention and Control

History of Latest Guidelines

In 2011, the Australian Commission on Safety and Quality in Healthcare published the National Safety and Quality Health Service (NSQHS) Standards, that included Standard 3: Preventing and Controlling Healthcare Associated Infections (2011). Their guidelines which adopted a risk management framework, focused not only on how infectious agents were transmissible but also on when, providing a clearer framework for implementing infection prevention and control strategies.

The National Safety and Quality Standards (2011) incorporate the following six (6) criteria to achieve the prevention and control of Healthcare Associated Infections (HAIs):

- Governance and systems for infection prevention, control and surveillance;
- Infection prevention and control strategies;
- Managing patients with infections or colonisations;
- Antimicrobial stewardship;
- Cleaning, disinfection and sterilisation; and
- Communicating with patients and carers.

These national standards build on the work undertaken by the National Health and Medical Research Council, Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010) that were accepted by the Department of Health and Aging as the best practice model for infection prevention and control, which was also then endorsed by the Communicable Diseases Network Australia, the National Public Health Partnership and the Australian Health Minister’s Advisory Council (2010).
Objectives of the Infection Prevention and Control Online Package

After reflection of one’s own knowledge, practice and work environment, and identifying your own learning needs HCA employees will be able to show evidence of current Infection Prevention and Control principles and practices to minimise the risk of transmission of infection in health care facilities as relevant to their scope of practice.

Infectious organisms evolve and change continuously thus creating ongoing challenges for all those involved in healthcare as seen with the emergence and transmission of multi resistant Staphylococcus aureus (MRSA). The health and aged care setting where patients and residents are in close proximity create environments that enable the rapid and cross transmission of infections. Patients and residents may also be receiving treatments and medications that again reduce their resistance to fight infections.

Research demonstrates that at least half of Healthcare Associated Infections (HAIs) are preventable and that strategies and procedures exist that can reduce the rate of infections. Successful infection prevention and control requires a range of strategies and procedures at all levels of the organisation and involving all members of the health/aged care team.

Access to and undertaking Continuing Professional Development (CPD) is in accordance with the Australian Health Practitioners Regulatory Agency (AHPRA), the Nursing and Midwifery Board of Australia (NMBA) and the standards for Nursing and Midwifery Professional Practice Guidelines. The Infection Prevention and Control competency is also a requirement for HCA Care Workers and Assistants in Nursing (AINs), and any staff working in the health and aged care sector including Theatre and Anaesthetic Technicians, Central Sterilising Department Technicians, and kitchen, domestic and porter staff.
Introduction

This education package recognises your prior learning in relation to Infection Prevention and Control, having completed a qualification as a Register Nurse and/or Midwife, Enrolled Nurse, as having completed a Certificate III in Community or Aged Care or staff working in the health and aged care sector including Theatre and Anaesthetic Technicians, Central Sterilising Department Technicians, and kitchen, domestic and porter staff.

This education package summarises that major standards and prevention strategies and provides updates on the latest national and international standards acknowledging that infectious diseases can rapidly spread around Australia and the world as experienced in 2002 – 2004 with the latest SARS outbreak and again in 2009, with the H1N1 influenza epidemic.

This education package with cover and assess your understanding of:

- Definition of infections and related diseases;
- Transmission and modes transmission in healthcare;
- Methods of reducing the spread of infections; and
- Risk management in infection prevention and control.

The package also covers in detail:

- 5 moments for Hand Hygiene;
- Standard Precautions; and
- Specific Contact Precautions.
1. **Definition of Infections**

An infection is any condition where all or part of the body is invaded by a pathogenic agent, which multiplies to produce a local or systemic inflammation and damage. The pathogenic agent may be bacteria, viral or of protozoa origin. Infections can come from numerous sources including:

- **Animate (Human Reservoir)** from other people and/or self;
- **Animate (Vector Reservoir)** from animals and/or insects; and
- **Inanimate (Fomite Reservoir)** from the environment or food.

In any Health/Aged care facility, the spread of infection requires:

1. **A susceptible host:** e.g. a sick/critically ill or elderly patient/resident, newborns, the immunocompromised patient and clients with lowered immunity profiles.

2. **An infectious organism source:** e.g. an animate or inanimate contaminated source in contact, directly or indirectly, with a host.

3. **A transmission pathway:** e.g. contact with bodily secretions either direct or indirect; other patients/residents, visitors or health care workers becoming a source of infection and then acting as a direct or indirect pathway.

*(Infection, Prevention and Control in the Healthcare Setting, section A1, National Standards, 2010)*
1.2 Transmission of Infection

How are infections spread?

Infections can be spread through a variety of methods including:

- **Contact:**
  - direct - person to person, via hands, injections, or ingestion;
  - indirect - via a contaminated object, equipment or environment; or
  - via droplet spread - droplet is generally considered large enough to have at least than one (1) meter spread;

- **Airborne:** microorganisms that remain alive in the air and are inhaled by hosts, usually greater than one (1) metre spread;

- **Common vehicle:** contaminated food, water, drugs, blood, equipment and instruments, etc.; and

- **Vectors:** animals/insects including flies, mosquitoes, rats, dogs, cats and bats.

1.3 Transmission Pathways Expanded

Contact Routes - Direct, Indirect & Droplet

**Direct Contact**
- when microorganisms are transmitted as a result of direct physical contact between an infected or colonised individual and susceptible host (body surface to body surface).

**Indirect Contact**
- involves the passive transmission of microorganisms to a susceptible host via an intermediate object, such as contaminated hands that are
not washed between patients/clients, contaminated instruments or other inanimate objects.

**Droplet Transmission**
- the transmission of large droplets generated from respiratory tract or the source patient/resident coughing or sneezing, or during procedures such as suctioning or bronchoscopy - large droplets do not remain suspended in the air.

**Airborne Transmission**
- the dissemination of microorganisms by aerosol – spray or vapour through coughing, sneezing or talking contact susceptible mucosal surfaces such as eyes, nose or mouth; and
- where organisms are suspended in moist nuclei or in dust particles containing skin cells and other debris that remain suspended in the air for long periods of time. The organisms are widely dispersed by air currents and *inhaled* by susceptible hosts.

**Common Vehicle Transmission**
- A single contaminated source such as food, medication, intravenous fluid, equipment, instrument etc., which serves as the vehicle to transmit infection to multiple hosts.

**Vector-Borne Transmission**
- Transmission by insect or animal vectors, which picks up infected organism etc. from an infected person and transmit it to a susceptible host.
1.4 Chain of Infection

Susceptible host

CHAIN OF INFECTION

Mode of Transmission

Source of infectious agent

2. What does Infection Prevention and Control do?

Infection Prevention and Control is used in the health/aged care industry to:

- Minimise the transmission risk of HAIs in health/aged care settings; and,
- Assist and educate healthcare workers in their knowledge of current Infection Prevention and Control principles and practices.

Infection Prevention and Control is implemented through the use of:

- Policies and procedures;
- Surveillance;
- Immunisation – of patients/residents and staff;
- Antimicrobial and Antiviral therapies; and
- Regular effective cleaning of equipment, instruments and inanimate items.

Who must abide by Infection Prevention and Control policies and procedures?

- Every health/aged care professional and worker,
- Visitors, families, volunteers …
- EVERYONE!!!
3. Methods of reducing the chain of infection

Standard Precautions

Standard precautions refer to those work practices that are applied to everyone, regardless of their perceived or confirmed infectious status and ensure a basic level of infection prevention and control. Implementing standards precautions as a front-line approach to infection prevention and control in the health/aged care environment minimises the risk of transmission of infectious agents from person to person, even in high risk situations.

Standard Precautions include:

- Personal hygiene practices, particularly hand hygiene, aim to reduce the risk of contact transmission of infectious agents (see Section B1.1).
  - Refer 5 Moments for Hand Hygiene.

- The use of personal protective equipment (PPE), which may include gloves, gowns, plastic aprons, masks/face-shields and eye protection, aims to prevent exposure of the healthcare worker and patients to infectious agents (see Section B1.2).

- Safe use and disposal of sharps assists in preventing transmission of blood-borne diseases to healthcare workers (see Section B1.3).

- Routine environmental cleaning, including cleaning and spills management, assist in preventing transmission of infectious agents from the environment to patients (see Section B1.4 and Section B5.1).
Table A1.1: How standard precautions are implemented, (NHMRC, 2010).

The 4 characteristics of Standard Precautions applied are:

1. ROUTINELY
2. CONSISTENTLY
3. TO ALL PATIENTS/RESIDENTS
4. AT ALL TIMES
4. Risk identification in the clinical context

The following section explains the decision making processes for the identification, assessment and treatment/management of potential and real risks of infection transmission in the clinical setting.

1. Avoid the risk
2. Identify the risks
3. Analyse the risk
4. Evaluate the risks
5. Treat/manage the risks

1. AVOID THE RISK

The best way to manage the risk is to avoid it. It is vital to consider the following before undertaking a procedure:

- Is the planned task/procedure necessary?
- Are there alternative procedures that would eliminate or minimise any potential exposure of the patient/resident or yourself and other to infectious agents?

Examples:
- Can antibiotics be given orally rather than intravenously?
- Is it necessary to change the dressing daily?
- Does the patient still require an intravenous device, or can it be removed?

Consider your work context. What tasks or procedures can be eliminated or changed to reduce the risk of the transmission of an infection?

- ________________________________
- ________________________________
- ________________________________
## 2. IDENTIFY THE RISKS

When approaching a clinical task or procedure it is useful to consider the risks of HAI transmission of when/where/how and why they occur:

- What potential infective agents are involved?
- How are they transmitted?
- Who is at risk of infection?

### Examples:
- What is the source of the infection?
- Is the mode of transmission DIRECT or INDIRECT?
- Is the patient, health worker, patient environment at risk?

Again, consider your work context. Can you identify potential sources of infection, how the infection can be transmitted, and who is at risk of becoming infected?

- _________________________________________________________
- _________________________________________________________
- _________________________________________________________
- _________________________________________________________
### 3. ANALYSE THE RISK

The risks identified with a specific task or procedure need to be analysed. This can be achieved by considering:

- Why can it happen?
- What existing controls are in place to minimise the risk?
- How often could transmission happen?
- What are the likely consequences?
- What factors increase or decrease the risk of transmission?

#### Examples:

- What is it about the task or procedure that can transmit the infection?
- Are there procedures in place to minimise the risk of transmission?
- What is the likelihood of transmission?
- What is the associated morbidity or mortality with the HAI?
- What is the increased length of stay with the HAI?
- Are there factors that can alter the consequences or likelihood of the HAI? Is there appropriate equipment available? Is the level of clinical expertise available? What is the patient’s medical history?

From your work context can you analyse the risks for the transmission of infection?

The procedure? Is appropriate equipment available? Are appropriate skilled staff available? Is the patient’s/resident’s condition adding to the risk of transmission?

- __________________________________________________________
- __________________________________________________________
- __________________________________________________________

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4. EVALUATE THE RISKS

The next stage requires assessment of whether the level of risk is acceptable or not. Factors that influence this decision are:

- Is the risk so low that it is not considered a problem?
- Does the need to undertake the task/procedure outweigh the possible risk of HAI transmission?
- What can be done to reduce or eliminate the risk?
- Can steps be taken to minimise or mitigate the risk?
- How could this be applied in this situation?

Examples:

- Is taking the blood pressure of a healthy individual considered to have a low or high risk of transmission of infection?
- What changes to the treatment plan should be initiated for a patient who is suspected to be a carrier of MRSA, who requires physiotherapy for their total knee replacement? Location of the treatment – own room or the physiotherapy department? Should the physiotherapists use PPE? How should the physiotherapy equipment be cleaned and stored between treatments?
- What can be done to break the chain of infection?
- Are there special considerations required for the given clinical environment, such as an ICU, shared ward accommodation? Single room use? Patient/resident isolation?

Are the appropriate controls and measures in place in your clinical context to eliminate or reduce the transmission of infections?

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- 
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## 5. TREAT THE RISKS

At this stage all information gathered from the analysis and evaluation on the risk of HAI transmission. Consider what actions should be taken. In order to make this decision, consider how the level of risk will be affected by the proposed mitigation strategies.

- Avoiding the risk?
- Reducing the risk?
- Transferring the risk?
- Retaining the risk and managing it?

### Examples:

- Choosing an alternative lower risk task or procedure?
- What preventative measures, existing systems and controls can be used?
- Will getting another health worker or team to assist undertake the task or procedure, who are better equipped or have more experience in undertaking the task?
- What PPE or safety engineered devices can be used?

What can you do to avoid, reduce, transfer or manage the risk of transmitting a HAI?

- __________________________________________
- __________________________________________
- __________________________________________
- __________________________________________
5. Managing HAI transmission

Managing HAI transmission is everyone’s responsibility and will cover the following subject areas:

1. Hand Hygiene;
2. Personal Protective Equipment (PPE);
3. Patient/Resident and visitor education;
4. Health Worker Precautions and Needle Stick Injury;
5. Standard Precautions for Blood and Body Fluids;
6. Containing infections; and

5.1 Hand Hygiene

Remember to wash your hands…

- On arriving at work;
- Between and after caring for individual patients/residents;
- When hands are soiled;
- Before and after wearing gloves;
- After going to the toilet;
- Before eating meals;
- Before leaving work.

Remember: Bacteria can survive for DAYS on equipment, linen and blankets, etc.
Why is Hand Hygiene so important? Hand washing is easily, the most important way to stop the spread of infection:

- 7 – 10% of patients will acquire one or more HAIs;
- HAI’s contribute to 7,000 deaths per annum; and
- Average HAI costs $3,500 + increased Length of Stay (LOS) of 4 + days.

5.2 Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) includes all equipment designed to reduce the spread of infections where staff are exposed to infections and thus become the source of transmission. PPE includes face masks, eye masks, hats, gloves, gowns, shoe covers and if needed scrubs.
Face Masks

- Make sure the mask is not damaged and the seal is in good condition;
- Ensure all straps are in place and are not damaged;
- Make sure metal nose clip (if applicable) is in place and functions correctly;
- Ensure there is a good seal – ‘fit check’

‘Fit Check’ Mask

- This ensures that there are no air leaks around the mask;
- No exhaust valve – exhale;
- Exhaust valve – inhale;
- Check for air leaks around the mask;
- Discard mask after use.

Removal of PPE

- Remove in a way that does not allow transmission of infectious agents;
- Remove gloves first - do not touch skin;
- Remove face/eye protection, wipe with alcohol wipe;
- Remove gown, fold carefully with covered side in and place in covered linen bin. Do not flap gown around;
- Remove mask touching tapes only, discard;
- Wash hands immediately or use an alcohol rub – WASH VERY WELL.
5.3 Health Care Worker Precautions

Remember Standard Precaution means … Reporting Infections

As an employee, you are required to report that you have been exposed to infections and if there is a risk of you disseminating an infection, including:

- Fever, sore throat, flu like illness, productive cough, whooping cough;
- Acute skin eruptions or infections;
- Purulent wound infections;
- Jaundice;
- Conjunctivitis;
- Diarrhoea; and/or
- Recent immunisation with a live virus such as oral poliomyelitis vaccine.

Make sure that you cover any cuts or abrasion with a waterproof dressing to provide a barrier to a/the pathogen.
Needlestick Injury

'Skin puncture from a needle which has been used to draw blood from a person known to be infected is estimated to be: HIV = 0.3%; Hepatitis C = 3%; Hepatitis B = 30%.
(Source: Healthcare Infection Prevention and Control Management Resources (HICMR))

All staff who administer injections – intravenous, intramuscular, subcutaneous are at risk of sustaining a needlestick injury. You are required to:

- Follow Health Facility Policy for use and disposal of needles/sharps;
- Use appropriate authorised containers;
- Follow Health Facility policy if Injury occurs;
- Report incident immediately and fill out appropriate Incident form;
- Arrange with Infection Prevention and Control department for risk assessment and if follow up required e.g., Blood testing for HIV, Hep B & Hep C.

Immediately after the injury

Suggestions include:

- Wash the wound with soap and water;
- If soap and water aren’t available, use alcohol-based hand rubs or solutions;
- If you are at work, notify your supervisor or occupational health and safety officer - you will need to fill out an accident report form; and
- Go straight to your doctor, or to the nearest hospital emergency department.
5.4 Containing the infection

Admission Screening
Based on: NHMRC (2010), B3.1.3 Organism-specific approach recommendation, admission screening is implemented to identify at risk patients. Questionnaires, previous history and face-to-face interviews are used. Examples of admission screening include:

- SARS/ Avian Flu/ H1N1 Flu;
- Creutzfeldt-Jakob Disease (CJD); and
- WA and NZ pursue a standard approach to specific admission screening for MRSA. (Ref 1.) A number of other state hospitals engage in routine MRSA screening via individual hospital policy.

Blood and Body Fluids
Work practices required for a basic level of Infection Prevention and Control, and considered the minimum ROUTINE work practices. All of the patient’s blood and body fluids are to be treated as potentially infectious. When in contact with any of the patient’s blood and body fluid minimum precautions need to be applied.

- Blood and blood products;
- All other body fluids, secretions and excretions (excluding sweat), urine and faeces, mucous and sputum, pus and any discharge;
- Non-intact skin – cuts, abrasions, wounds, lesions, sores, etc; and
- Mucous membranes – inside the mouth and nasal cavity, conjunctiva, etc.
Decontamination of Equipment

- Use “single use” equipment where possible
- Non-disposable items in contact with **INTACT SKIN = CLEANING**
- Non-disposable items in contact with **MUCOUS MEMBRANE = DISINFECTION**
- Non-disposable items in contact with **STERILE SITES = STERILISATION**
- All items must be cleaned thoroughly **BEFORE** any other process takes place as per **STANDARD PRECAUTIONS**.

Disposal of Waste means......

- Dispose of waste appropriately;
- Wear gloves when disposing of waste;
- Place waste contaminated with body fluids in sealed plastic bags marked infectious waste and disposed of in accordance with clients procedures and hospital policy;
- Handle and dispose of sharps carefully;
- Sharps such as hypodermic needles, scalpel blades or broken glass may cause injury through cuts or puncture wounds;
- Place sharps in rigid, impervious sharps containers as soon as possible after use; and
- Remember – clean sharps passing through contaminated gloves can become contaminated.
5.5 Patient/Visitor Education Airborne Precautions

- Patients should wear a surgical mask if anyone is in the room (if possible);
- Door of patient’s room should remain closed at all times;
- Staff, patient and visitors should be informed of this;
- Restrict patient movement;
- Patient must wear a mask if leaving the room for procedures and provide one (1) metre of separation in waiting rooms.

5.6 Specific Contact Precautions

This section will summarise infectious diseases and conditions with the appropriate care to minimise the transmission of infections

- Resistant bacteria – MRSA, VRE and others
- Clostridium difficile infection with diarrhoea/gastroenteritis – if incontinent or if < 6 years of age
- Highly contagious skin infections – scabies, lice, impetigo.

Mycobacterial Skin Infection Sores
5.6.1 MRSA and other Resistant Microorganisms

- **MRO**: Multi-resistant organism;
- **MRSA**: Multi-resistant staphylococcus aureus;
- **VRE**: Vancomycin-resistant enterococci; and
- **MRGN**: Multi-resistant gram-negatives i.e. pseudomonas aeruginosa.

MRSA and VRE have emerged as significant HAI due to the extensive use of antibacterial agents over the past 4 decades. Managing these infections are a major challenge for all health and aged care facilities.

**Management of MRSA**

- A bacteria that *sometimes* causes infection in *some* people;
- Difficult to treat as has developed multi-resistant to common antibiotics;
- Very easily spread from one sick vulnerable person to another;
- Not dangerous to fit healthy people;
- In acute care, additional precautions may be used for MRSA.

**Management of MRSA in Acute Care**

- Follow the Institution’s Policy;
- Accommodate patient in a single room with door sign;
- Additional precautions – PPE;
- Antimicrobial hand wash dedicated equipment; and
- Special cleaning for all equipment and linen used.

**Management of MRSA in Aged Care**

- Standard precautions are generally all that is required – attention to hand hygiene;
- Care with open wounds; and
▪ Thorough environmental cleaning.

Management of VRE

**Acute Care**
▪ Additional precautions (as for MRSA);
▪ PLUS cleaning with disinfectant.

**Aged Care**
▪ Standard precautions are generally all that is required – attention to hand hygiene.

**Additional contact precautions required if:**
▪ Affected resident has diarrhoea, faecal incontinence or discharging lesions;
▪ There are other residents at risk.

5.6.2 **Diseases with Contact + Other Route Combination**

Some microorganisms are transmitted by more than one route; e.g. airborne and contact, or droplet and contact. Contact plus other route combination diseases include:
▪ Zoster = contact + airborne;
▪ Rubella = contact + droplet; and
▪ Lassa, Ebola, Marburg = contact + airborne.

**Remember:** These are clients infected with an organism that spreads by direct, indirect or droplet routes. The main focus is to contain (and prevent) the spread via direct, indirect or droplet routes.
▪ Single room if possible, with ensuite, or shared with patients with like condition if necessary;
▪ Gloves should be worn when entering the room;
▪ Impermeable gown if clothing or forearms will have direct contact with patient or contaminated environment;
▪ Remove gloves and gown, wash hands before leaving patients rooms;
▪ Anything that has potentially been in contact with the microorganism must remain in the contained environment;
▪ Dedicated patients equipment;
▪ Mask/eyewear if splash likely;
▪ Patient to leave the room for essential procedures only;
▪ Maintain precautions during transport;
▪ Notify area receiving patient;
▪ Visitors should talk to nursing staff before entering the room; and
▪ Keep visitors to a minimum.

5.6.3 Airborne Diseases and Precautions

Common airborne diseases include:
▪ Pulmonary TB (suspect/confirmed);
▪ Measles;
▪ Varicella (chickenpox);
▪ Zoster (disseminated);
▪ Zoster (immunocompromised);
▪ Viral haemorrhagic fever (e.g. Ebola, Lassa); and
▪ Severe acute respiratory syndrome (SARS), Avian Flu, H1N1 Flu.

Airborne Precautions on top of Standard Precautions
▪ **Remember:** These are patients infected with an airborne organism that spreads by direct or indirect routes. The main focus is to contain – to
prevent spread by direct, indirect or droplet routes. Remember that you are looking to prevent inhalation of the organism;

- Single room – **door kept closed** at all times;
- Ensuite facilities;
- Negative pressures used if available – keep room vacant one hour post discharge, 2-3 hours for measles post discharge;
- Monitor negative pressures maintained in room;
- PPE – as for standard precautions;
- Mask – high efficiency particulate P2 N95 mask for TB and SARs and non-immune staff (varicella, measles). All others surgical masks;
- Rostering of immune HCW’s to care for certain classes of infectious patients/clients;
- Dedicated patient equipment to prevent contaminated air particles transfer outside of room;
- Restrict movement of patient – essential procedures only;
- Transport of patient – surgical mask for patient;
- Notify area receiving patient;
- Teach patient to cover nose and mouth when coughing or sneezing; and
- Visitors must talk to nursing staff before entering room.

**Staff Entering & Leaving room Airborne Precautions**

- Put all (PPE on before entering room;
- On leaving with Anteroom – remove PPE in anteroom;
- If no anteroom – exit room wearing PPE, place used PPE in pedal lift bin or covered laundry bin outside room; and
- Wash hands or use alcohol rub immediately after removal of PPE.
5.6.4 Droplet Diseases and Precautions

Common droplet diseases include:

- Haemophilus influenza meningitis/epiglottis (until 24 hours of appropriate treatment);
- Neisseria meningitis septicaemia/meningitis (until 24 hours of appropriate treatment);
- Diphtheria (pharyngeal);
- Pertussis;
- Influenza;
- Mumps;
- Rubella;
- Group A streptococcal infections in infants & children; and
- Group A Streptococcal pneumonia, scarlet fever (all) (until 24 hours of appropriate treatment).

Droplet Control on top of Standard Precautions

Remember: These are clients infected with an organism that spreads by direct or indirect droplet routes. The main focus is to contain (to prevent spread by direct or indirect droplet routes).

- Roster immune HCW’s to care for certain classes of infectious patients;
- Teach patients/clients to cover nose and mouth when coughing or sneezing;
- Wear surgical mask plus eyewear if splash is likely;
- Single room with door closed, if possible with ensuite or shared with patients with like condition if necessary;
- Transport of patients/clients – surgical mask to be worn by patient;
- Patients to leave the room for essential procedures only;
- Notify area receiving patient and 1 metre of separation to be maintained; and
- Visitors should talk to nursing staff before entering the room.

**Combined Precautions**

- Some microorganisms are transmitted by more than one route; e.g. airborne and contact or droplet and contact;
- Zoster (disseminated) = contact + airborne;
- Lassa, Ebola, Marburg with Pneumonia = contact + droplet;
- Rubella = contact + droplet;
- Viral respiratory tract infection = contact + droplet;
- MRSA pneumonia = contact + droplet.
Congratulations!

You have completed the reading for this part of the course. You should now complete the multi-choice Infection Prevention and Control assessment quiz.

After completing the assessment quiz please also complete the Hand Hygiene Australia online quiz and print your certificate:

Advisory Panel: April 2014

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Content correct as at June 2015.
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Further resources

Hand Hygiene Australia. Comprehensive information for health professionals and general public.
www.hha.org.au