Standard and Transmission-based Precautions

Sites where PCP applies

| All facilities and community health services |

Target audience

| All staff working in clinical areas |

Description

Use of standard and transmission-based precautions protect staff, patients and visitors from transmissible organisms in healthcare settings. Transmission-based (also known as additional) precautions are used in addition to standard precautions where there is a suspected or confirmed infective agent that is transmissible by contact, droplet or airborne routes.

Keywords

- Standard precautions
- Transmission-based precautions
- Additional precautions
- Personal protective equipment
- Contact precautions
- Droplet precautions
- Airborne precautions

This PCP relates to NSW Ministry of Health Policy Directive

- PD2007_036 Infection Control
- PD2010_058 Hand Hygiene
- PD2007_084 Multi-resistant Organisms

PCP number

- PD2007_036:PCP 1
- PD2010_058:PCP 1
- PD2007_084:PCP 3

Replaces existing document?

No

Document number and dates of superseded document/s

- PD2007_036:PCP 1
- PD2010_058:PCP 1
- PD2007_084:PCP 3

Version Two from 10 March 2015; PD2007_036:PCP 1
PD2010_058:PCP 1
PD2007_084:PCP 3
Version One from 19 November 2014; PD2007_036:PCP 1
Version Two from 20 May 2010 and rescinded on 19 March 2014; Version One from 4 August 2009.

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- PD2007_036 Infection Control Policy
- Australian Commission on Safety and Quality in Health Care National Safety and Quality Health service Standards; Standard 3: Preventing and controlling Healthcare Associated infections
- PD2007_084 Infection control Policy: Prevention & Management of Multi-Resistant Organisms (MRO)
- PD2012_061 Environmental Cleaning Policy
- PD2012_018 Code of Conduct
- PD2011_005:PCP 2 Health Care Worker Restrictions: Precautions for Preventing Transmission of Infectious Diseases
- HNELHD CG 13_22 Management of an Outbreak of an Infectious Disease or Infestation within HNE Health Facilities
- PD2007_036:PCP 3 and PD2007_084:PCP 2 Allocation of Isolation Rooms and use of Patient Cohorting for designated Infectious Diseases
- PD2012_018:PCP 4 Uniform/Non-Uniform Clothing and Footwear: dress Code Requirements for Nursing and midwifery Staff
- PD2007_036:PCP 4 and 2012_061:PCP Cleaning of Non-Critical, Reusable Medical Equipment
- HNELHD Pol 14_03 Aseptic Technique for medium and higher risk procedures in clinical settings
- HNELHD Care Plans for Contact Precautions, Droplet Precautions and Airborne Precautions – search the HNE Health PPG or follow links from the Infection Prevention Service intranet location.

Tier 2 Director responsible for Policy to which the PCP relates. PCP authorised by

Karen Kelly, Director Nursing and Midwifery

PCP contact person and Network or Service etc. responsible for the PCP

Dr John Ferguson, Director Infection Prevention Service

Contact details

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Date authorised

26 February 2015

This document contains advice on therapeutics

No

Issue date

5 October 2015

Review date

10 March 2018

TRIM number

15/43-2-18
Risk statement

This policy has been developed to ensure all healthcare workers, visitors and patients are protected against harm through the elimination or minimisation of risks associated with transmission of potentially harmful pathogens via the incorporation of standard and transmission-based precautions within their work practices in the healthcare setting.

Any unplanned event resulting in, or with the potential for, injury, damage or other loss to patients/staff/visitors as a result of this procedure must be reported through the Incident Information Management System and managed in accordance with the Ministry of Health Policy Directive: Incident management PD2007_061. This would include unintended injury that results in disability, death or prolonged hospital stay. **Risk Category:** Clinical Care & Patient Safety

Outcomes

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Standard precautions will be practiced across all facets of healthcare</td>
</tr>
<tr>
<td>2</td>
<td>Transmission-based precautions will be correctly applied as required in addition to standard precautions</td>
</tr>
<tr>
<td>3</td>
<td>Transmission of and morbidity from infectious diseases will be identified and reduced within healthcare settings</td>
</tr>
</tbody>
</table>

**Hospital / Service Manager Responsibility**

- Ensure that the principles and requirements of this procedure are applied, achieved and sustained

- Regularly review safety and quality performance data related to Standard and Transmission-based precautions and take action to improve the safety and quality of patient care as considered necessary.

**Line management responsibility**

- Ensure that all staff read and understand this document

- Monitor this document and ensure staff comply with its requirements

- Ensure audits on compliance of Standard and Transmission-based precautions are monitored during site visits in association with the Infection Prevention service (IPS).

**Employee responsibility**

**All staff must:**

- Read, understand and comply with the requirements of this procedure

**IMPLEMENTATION AND MONITORING COMPLIANCE**

1. All ward locations utilize standardized posters as specified by the document

2. Mandatory HETI-Online training for infection control specifies systems in alignment with this PCP. Managers assess compliance with mandatory training at PDRs across HNE Health.

3. The Infection Prevention Service regularly audits compliance with Standard and Transmission-based precautions across all clinical locations, using its site visit audit tools. Findings of these audits are tabled at relevant committees and with local management for corrective action.
Background

A wide range of infective agents (bacteria, viruses, fungi, parasites & prions) cause disease in humans. A majority are predominantly transmitted by direct or indirect contact.

The predominant reservoirs of infective agents in healthcare settings are colonised / infected patients or staff. For some pathogens (eg multi-resistant bacteria, Clostridium difficile, norovirus), the healthcare environment is a significant reservoir (room surfaces, furnishings, reused equipment, bathrooms, other fomites). Contaminated food or water are less likely sources.

The susceptibility of patients to colonisation and infection is increased by antibiotic exposure, use of gastric acid suppression, use of invasive devices, surgery, immunosuppressives and many other factors.

Colonisation: a sustained presence of replicating agents on or in the body without producing an immune response or disease.

Infection: an invasion of infective agents into the body resulting in an immune response, with or without symptomatic disease.

Routes of Transmission

Contact

Direct – transfer of infective agents from one person to another.

Indirect – transfer of infective agents via a contaminated object (fomite) or person. This can occur when hand hygiene is not performed by staff between touching patients, or between touching the contaminated patient or hospital environment and a patient.

Droplet

Occurs when an infected person coughs, sneezes or talks, producing airborne droplets of varying size. Larger droplets may fall on to oral, nasal or ocular mucosal surfaces. Smaller droplets may be delivered into the airways by inhalation (see below). These agents are also transmitted by direct and indirect contact means as most survive for extended periods on surfaces/clothing or hands. Respiratory large droplet distribution depends on the force of the expulsion, and travel up to about two metres or more.

Airborne

Certain infectious agents are disseminated through small airborne particles that can remain infective, suspended in air over distance and time. These agents may be inspired, potentially infecting a susceptible individual.
Standard Precautions

Standard precautions refer to staff work practices applied during interactions with any patient, regardless of perceived or known infectious status, to prevent or reduce the risk of transmission of infective agents. **Standard precautions provide the basic level of protection against transmission of bloodborne pathogens and other pathogens transmitted by the contact route. They are the keystone for protection of patients from healthcare-associated infection and the protection of staff and visitors.**

The NSW Infection Control Policy (PD 2007_36; update planned for release in 2014) and NSW Hand Hygiene policy (PD2010_058) are the essential references for Standard Precautions.

**Healthcare workers need to consider the risks involved in carrying out specific procedures and wear personal protective equipment as required.**

Standard precautions include the following:

<table>
<thead>
<tr>
<th>Element</th>
<th>Rationale</th>
<th>Related elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand hygiene (staff and patients) in accord with the national 5 Moments Standard.</td>
<td>Reduce the risk of contact transmission</td>
<td>Skin care and problem identification Daily skin integrity assessment Bare below the elbows and dress codes for clinical staff – Promoting patient and visitor hand hygiene Methods for hand rub application and hand washing – see Appendix 2 for diagrams.</td>
</tr>
<tr>
<td>Personal protective equipment (PPE) worn as required (gloves, gowns, eye protection, masks)</td>
<td>Prevent or reduce the risk of exposure of skin, mucous membranes or clothing to infective agents</td>
<td>NSW PD 2007_36, Infection Control Includes safe handling and transport of laboratory samples.</td>
</tr>
<tr>
<td>Safe handling of sharps</td>
<td>Prevent sharps exposure injuries and potential transmission of blood-borne diseases</td>
<td>NSW PD 2007_36, Infection Control</td>
</tr>
<tr>
<td>Cough etiquette and respiratory hygiene (staff, patients and visitors)</td>
<td>Reduce transmission of respiratory diseases including influenza</td>
<td>See NSW PD Under HNELHD Influenza Like Illness management recommendations (HNELHD ILI Management Fact Sheet 2013), during the winter and regardless of patient ILI status, bedside curtains should be drawn approximately halfway along the length of the bed, between the bed heads in EDs and other locations where beds are closer than 2 metres apart.</td>
</tr>
<tr>
<td>Environmental controls</td>
<td>Reduce the risk of indirect contact transmission from the environment</td>
<td>Cleaning of patient environments and clerical areas Reducing clutter in common areas, regular cleaning of keyboards and clerical zones in ward areas. NSW PD 2012_061, Environmental Cleaning Policy</td>
</tr>
<tr>
<td>Cleaning/reprocessing of reusable equipment and instruments (e.g.</td>
<td>Prevent patient to patient transmission by fomites</td>
<td>HNELHD PCP: Cleaning of Non-Critical, Reusable Medical Equipment Avoidance of using personal mobile</td>
</tr>
</tbody>
</table>
Stethoscopes, oxygen saturation probes etc) prevent microorganisms contaminating a susceptible body site during an invasive or other high risk procedure. Prevent microorganisms contaminating a susceptible body site during an invasive or other high risk procedure. HNELHD Policy, 2014: Aseptic Technique for medium and higher risk procedures conducted in clinical settings. Bare-below-elbow dress code required for all aseptic procedures.

### Appropriate linen and waste handling procedures

| Appropriate linen and waste handling procedures | Minimise contamination of skin and clothing. | NSW PD 2007_36, Infection Control Clean (unused) linen must be stored in a closed location or covered to avoid airborne contamination. |

### Skin care and problem identification

- Frequent use of alcohol hand rubs or hand washing leads to drying of the skin. It is recommended to apply skin moisturiser several times per day whilst on clinical duty (eg at morning tea and lunch breaks and also at the end of the day).

### Hand skin problems (dryness, dermatitis or potential reactions to hand hygiene products) should be reported to your supervisor or manager. Staff Health or designated care provider can then advise and arrange referral to a Dermatologist if required. Daily checking of skin integrity

- It is a requirement that staff check their skin integrity by applying alcohol based hand rub upon commencement of shift.
- If stinging occurs, this indicates an open lesion or area of dermatitis that requires covering with a water-resistant occlusive dressing. This dressing should be changed as often as necessary, especially when it becomes soiled, loose, damp or damaged.

### Dress code for clinical staff

- Bare-below-elbows (BBE) dress code for all clinical staff during patient or client interactions is required. The rationale for BBE is to:
  - Improve effectiveness of hand hygiene prior to patient care and
  - Reduce the scope for cross-transmission of hospital pathogens by contaminated jewelry and staff clothing sleeves and/or neck ties and scarves.
  - Furthermore, BBE is an essential pre-requisite for procedures that require Aseptic Technique (HNELHD Policy, 2014: Aseptic Technique for medium and higher risk procedures performed in clinical settings).

### Promoting patient and visitor hand hygiene

All facilities must provide adequate means for patients to undertake hand hygiene:

- before eating
- after going to the toilet or using a bedpan or urinal
- whenever hands are visibly soiled
- after sneezing or coughing into hands or tissue

All visitors are to be encouraged to perform hand hygiene when they enter and leave a ward.

[Standard Precautions Poster](Nationally agreed format)
Transmission-based Precautions

- Transmission-based precautions are practices that augment standard precautions to reduce transmission of certain high risk pathogens in healthcare

- Patient requirements for Transmission Based Precautions are specified by the Infection Prevention Service (IPS) by patient alerts on the iPM and CAP systems.

- Refer to the HNE LHD PCP Allocation of Isolation Rooms and use of Patient Cohorting for designated Infectious Diseases specifies requirements for isolation and/or cohorting for specific infectious conditions.

- For infection-specific Transmission Based Precautions requirements, please consult the NSW Infection Control Policy, PD 2007_36.

- Certain infections may require combined Transmission Based Precautions – e.g. Contact + Airborne for a patient with chickenpox. The IPS will provide direction in that instance.

Contact Precautions

Contact precautions are implemented in addition to standard precautions in the presence of known or suspected high impact infectious agents that are spread by direct or indirect contact with the patient or the patient’s environment. The additional elements of PPE and isolation increase the effectiveness of standard precautions at reducing spread by contact.

When caring for patients who require contact precautions:

- Perform hand hygiene

- Put on apron/gown and gloves upon entry to the patient-care area

- Ensure that clothing and skin do not contact potentially contaminated environmental surfaces and

- Remove gloves and apron/gown, and perform hand hygiene before leaving the patient-care area.

Use patient-dedicated equipment or single-use non-critical patient-care equipment where possible. If reusable equipment cannot be dedicated to one patient clean the equipment and allow it to dry before use on another patient. A single-patient room with ensuite is recommended for patients who require contact precautions.

Limit transfers of a patient on contact precautions to reduce the risk of contamination of other patients and environmental areas. Transport staff require clean gloves to push a wheelchair or bed. Clean PPE is donned at the destination if required for assisting the patient. See Appendix 10 for competency assessment tool.

Resources

- Contact Precaution Signage (Nationally agreed format)

- Contact Precaution Care Plan Appendix 3 (HNELHD designated)
Droplet Precautions

Droplet precautions are implemented in addition to standard precautions for patients known or suspected of being infected with agents that are transmitted by respiratory droplets that are generated by a patient when they cough, sneeze or talk.

When caring for patients who require droplet precautions:

- Perform hand hygiene
- Put on a surgical mask and eye protection when entering the patient-care area (if contamination likely, contact precautions may also be needed, requiring an apron/gown and gloves);
- Ensure that clothing and skin do not contact potentially contaminated environmental surfaces
- Remove eye protection (wipe with large alcohol wipe) and mask (gloves and apron/gown if used), and perform hand hygiene before leaving the patient-care area.

Use patient-dedicated equipment or single-use non-critical patient-care equipment where possible. If reusable equipment cannot be dedicated to one patient clean the equipment and allow it to dry before use on another patient.

A single-patient room with ensuite is highly recommended for patients who require droplet precautions.

If it is necessary to place a patient in a shared room (cohorting) please contact your infection prevention professional for advice.

If cohorting is required follow these recommendations:

- Avoid placing the patient with other patients who are at increased risk of an adverse outcome from infection (immunocompromised, immunosuppressed, have open wounds, have indwelling devices)
- Change protective attire and perform hand hygiene between caring for patients in the same room, regardless of whether more than one patient is on droplet precautions.
- Curtains to be drawn approximately halfway between patients’ beds to ensure spatial separation of >1 metre

Limiting transfers of a patient on droplet precautions reduces the risk of contamination of other patients and environmental areas. If tolerated, patient to wear surgical mask whilst being transported with nasal prongs underneath if required.

When attending high risk aerosol-producing procedures which potentially expose the healthcare worker to airborne contaminates, Airborne precautions also need to be applied. Examples of aerosol producing procedures include:

- BPAP/CPAP and other non-invasive ventilation
- Bronchoscopy
- Open suctioning of airway and secretions in intubated patient
- Resuscitation, involving emergency intubation or Cardiac Pulmonary Resuscitation and Endotracheal intubation

Resources

- [Droplet Precaution Signage](#) (Nationally agreed format)
- [Droplet Precaution Care Plan Appendix 4](#) (HNELHD designated)
Airborne Precautions

Airborne precautions are implemented in addition to Standard precautions for patients known or suspected to be infected with infectious agents transmitted person-to-person by the airborne route.

When caring with patients who require Airborne precautions:

- Perform hand hygiene
- Wear a correctly fitted P2 mask/respirator (if needed, ask for instruction on fit-checking the mask prior to entry) and protective eyewear when entering the patient’s room. Please note, in some circumstances, contact precautions may also be required with use of a gown, gloves, and protective eyewear. Men with beards cannot use a P2 mask and require a full respirator.
- Ensure that clothing and skin do not contact potentially contaminated environmental surfaces;
- Remove PPE in the following order: gloves; clean hands; gown; clean hands; eye protection, clean with large alcohol wipe; clean hands; mask; clean hands.

A negative pressure single-patient room (or a room where the air does not circulate to other areas) with ensuite is necessary for patients who require airborne precautions.

If transfer of the patient outside of the negative pressure room is necessary, ask the patient to wear a correctly fitted surgical mask with nasal prongs underneath if required, while they are being transferred and to follow respiratory hygiene and cough etiquette.

Resources

- Airborne Precaution Signage (National format)
- Airborne Precaution Care Plan Appendix 5 (HNELHD designated) at:

Appendices

Appendix 1 Summary of Standard & Transmission-Based Precautions
Appendix 2 How to perform hand hygiene
Appendix 3 Contact Precaution Care Plan
Appendix 4 Droplet Precaution Care Plan
Appendix 5 Airborne Precaution Care Plan
Appendix 6 Standard precautions for medical staff – Information Sheet
Appendix 7 Standard and Transmission-based Precautions Information Sheet
Appendix 8 Infection Prevention Liaison Nurse Role Statement
Appendix 9 Isolation – Staff Contact Record
Appendix 10 Donning and Doffing Respiratory Personal Protection Equipment – Competency Assessment Tool
Appendix 11 Bare Below Elbows Fact Sheet
Appendix 12 Influenza Like Illness Fact Sheet
### Appendix 1: Summary of Standard & Transmission-Based Precautions

<table>
<thead>
<tr>
<th>Type of precautions</th>
<th>Examples of infectious agents</th>
<th>Single room or cohort</th>
<th>Gloves</th>
<th>Gown</th>
<th>Mask</th>
<th>Eye protection</th>
<th>Handling of equipment</th>
<th>Visitors*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td>Standard precautions apply for all work practices to prevent the likelihood of transmission of infection.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Hand hygiene</strong>&lt;br&gt;Respiratory hygiene and cough etiquette</td>
</tr>
<tr>
<td><strong>Contact</strong></td>
<td>MROs, <em>C. difficile</em>, intestinal tract pathogens (e.g. norovirus), highly contagious skin infections</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✴</td>
<td></td>
<td>Single use or reprocess before reuse on next patient</td>
<td>Check with Staff, same precautions if gastro suspected</td>
</tr>
<tr>
<td><strong>Droplet</strong></td>
<td>Influenza, RSV, norovirus, pertussis (whooping cough), meningococcus#</td>
<td>✓</td>
<td>✹</td>
<td>✹</td>
<td>✓</td>
<td>Surgical mask</td>
<td>Single use or reprocess before reuse on next patient</td>
<td>Restrict visitor numbers and precautions as for staff*</td>
</tr>
<tr>
<td><strong>Airborne</strong></td>
<td>Pulmonary TB, chickenpox (varicella)#, measles (rubella)#, SARS,</td>
<td>✓</td>
<td>✹</td>
<td>✹</td>
<td>✓</td>
<td>P2 (N95) respirator</td>
<td>Single use or reprocess before reuse on next patient</td>
<td>Restrict visitor numbers and precautions as for staff*</td>
</tr>
</tbody>
</table>

*See Appendix 9 for restricted access isolation – staff contact record

✓ Essential component of transmission-based precautions

✴ Surgical mask required if infectious agent isolated in sputum

🔹 As required — Gloves to be worn whenever there is the potential of direct or indirect contact with blood or body substances

# for bacterial infections these precautions apply until the patient is non-infectious ie. on recommended antibiotics for 5 days for pertussis and for 24 hours for meningococcus infections

Gowns to be worn for procedures when there is the potential of direct or indirect contact to body substances

Face and eye protection to be worn when there is the potential of exposure to splashes or sprays to mucosa (including during aerosol-generating procedures) * Visitors should be given instruction about correct procedures when transmission-based precautions are applied and given appropriate resources to support them in meeting these requirements.

See table B5.2 in NHMRC Infection Prevention & Control Guidelines for Healthcare Facilities for information on the type and duration of precautions for specific infections & conditions:

Appendix 2: How to perform hand hygiene

**How to handrub?**
WITH ALCOHOL-BASED FORMULATION

1a. Apply a painful of the product in a cupped hand and cover all surfaces.

1b. Rub hands palm to palm

2. Rub hands palm to palm

3. Right palm over left dorsum with interlaced fingers and vice versa

4. Palm to palm with fingers interlaced

5. Backs of fingers to opposing palms with fingers interlaced

6. Rotational rubbing of left thumb clasped in right palm and vice versa

7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

20-30 sec

8. Once dry, your hands are safe.

**How to handwash?**
WITH SOAP AND WATER

0. Wet hands with water

1. Apply enough soap to cover all hand surfaces.

2. Rinse hands with water

3. Dry thoroughly with a single use towel

4. Use towel to turn off faucet

40-60 sec

11. ...and your hands are safe.

World Health Organization

October 2015