

Transmission Based Precautions (Isolation Guidelines)

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Policy

Transmission-based Precautions are used in addition to Standard Precautions when use of Standard Precautions alone does not fully prevent transmission of pathogenic organisms.

Purpose

To provide guidance on measures required to minimise the risk of transmission of pathogenic organisms to patients, staff and visitors.

Scope/Audience

All employees of CDHB Staff

Associated Documents

- CDHB IPC Guidelines A-Z Alphabetical List of Diseases
- CDHB IPC Policy: [Standard Precautions](#)
- CDHB IPC Policy: [Multi-drug Resistant Organisms](#)
- [Transmission Based Isolation Precaution Signage](#)
- PPE Flipchart (Ref. 1685)
- Patient pamphlet: [“Why am I in Isolation ?”](#) (Ref. 0106)
- Infection Prevention & Control Intranet page: [Isolation Procedures](#)

1.1 Transmission-based Precautions

Transmission-based Precautions are put in place for patients suspected or confirmed to be infected or colonised with microorganisms transmitted by the contact, droplet or airborne routes. Included here also is Protective Isolation. In all of these instances the route(s) of transmission of the micro-organism is/are not completely interrupted using Standard Precautions.

There are four categories of precautions that can be implemented in the CDHB

1. Contact Precautions
2. Droplet Precautions
3. Airborne Precautions
4. Protective Isolation

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Depending on the route of transmission, Transmission-based Precautions involves a combination of the following infection prevention measures:

- a. Allocation of single rooms or cohorting of patients
- b. Appropriate use of Personal Protective Equipment (PPE)
- c. Patient dedicated equipment
- d. Enhanced cleaning and disinfection of the patient environment
- e. Appropriate air handling requirements

Table 1 summarises the IPC measures required for each category of precautions. Refer also to [Transmission-based Precautions signage](#)

- Transmission-based Precautions are always **used in addition to Standard Precautions**.
- Some diseases have multiple routes of transmission and several categories of Transmission-based Precautions may be combined, e.g. Chickenpox may require Airborne and Contact precautions, Norovirus with vomiting requires Droplet and Contact
- Refer to the [CDHB IPC Guidelines A-Z Alphabetical List of Diseases](#) for details of precautions required
- All staff members must comply with Transmission-based Precautions.
- The duration of Transmission-based Precautions may be extended for immunosuppressed patients with viral infections due to the prolonged shedding of viral agents that may be transmitted to others.
- Ensure that the patient receives the information pamphlet: [“Why am I being Nursed in Isolation” \(Ref. 0106\)](#) - download from the IP&C intranet site
- It is important to advise the patient’s family, whanau and significant others regarding Transmission-based Precautions rationale and procedures.
- Contact the Infection Prevention & Control (IP&C) Service to arrange staff education sessions as required in the clinical area.
- Where single room accommodation is not available a risk assessment in consultation with the IP&C service is required.

1.1.1 Contact Precautions

Contact Precautions are intended to prevent transmission of (known or suspected) infectious agents including epidemiologically important micro-organisms, which are spread by direct or indirect

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contact with the patient or the patient's environment or patient care items, e.g. multi-drug resistant organisms, scabies, excessive wound drainage, drainage of body fluids causing extensive environmental contamination, and gastrointestinal tract pathogens such as Norovirus, *Clostridium difficile* and Rotavirus.

1.1.2 Droplet Precautions

Droplet Precautions are intended to prevent transmission of (known or suspected) infectious agents including epidemiologically important micro-organisms, which are spread by close respiratory or mucous membrane contact with respiratory secretions, e.g. influenza, pertussis (whooping cough), meningococcal meningitis (for first 24 hours of effective antimicrobial therapy).

1.1.3 Airborne Precautions

Airborne Precautions are intended to prevent transmission of (known or suspected) infectious agents that remain infectious over long distances when suspended in the air and are transmitted person to person by inhalation of airborne particles, e.g. chicken pox, measles, pulmonary tuberculosis.

NB Refer to separate section on care of patients with pulmonary tuberculosis and use of negative pressure rooms for Airborne isolation.

1.1.4 Protective Isolation Precautions

A protective environment is most commonly used for stem cell transplant patients to minimise fungal spore counts in the air and reduce the risk of invasive environmental fungal infections; this usually requires HEPA filtered positive pressure rooms such as those in the Bone Marrow Transplant Unit (BMTU).

Dependant on neutrophil count, only patients considered to be sufficiently immunosuppressed by their clinical team should be placed in Protective Isolation.

Generally there is no evidence to support the need for special diets for those in protective isolation and general good hygiene practice must be observed.

Staff & visitors with upper respiratory tract infections should not enter a room in Protective Isolation.

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Table 1: Summary Chart for Transmission-based Precautions

Action	Contact Precautions	Droplet Precautions	Airborne Precautions	Protective Isolation
Single Room with ensuite facilities	Yes, or cohort If single room not available risk assessment necessary in consultation with IP&C	Yes, or cohort	Yes	Yes
No ensuite facilities available	Designate toilet/shower and label clearly for individual room number OR use individually assigned commode in patient's room. Shower last and terminally clean afterwards.	Patient to wear surgical mask while transferring to WC/Shower OR use individually assigned commode in patient's room. Shower last, if possible.	Non applicable as should have ensuite/dedicated bathroom.	Designate toilet/shower and label clearly for individual room number OR use individually assigned commode in patient's room. Shower in freshly cleaned shower.
Specialised Air Handling	No	No	Yes – negative pressure	Yes – may have positive pressure HEPA filtered
Door Closure	Open	Open	Closed at all times	Closed at all times in positive pressure room.
Equipment	Dedicated equipment or disinfect between uses. Ensure equipment and furniture can be disinfected. Keep supplies in room to a minimum. Patient's records outside room.	Dedicated equipment or disinfect between uses. Ensure equipment and furniture can be disinfected. Keep supplies in room to a minimum. Patient's records outside room.	As per Standard Precautions	Ensure equipment is clean before being taken into room.
Hand Hygiene	Antimicrobial soap or alcohol-based hand rub. NB. Hand washing with liquid soap is required after contact with patient with <i>Clostridium difficile</i> infection	Plain liquid soap or alcohol-based hand rub.	Plain liquid soap or alcohol-based hand rub.	Plain liquid soap or alcohol-based hand rub.
Gloves (must be used in line with 'The 5 Moments for Hand Hygiene')	For direct contact with patient or environment. Remove when exiting room, then perform hand hygiene	As per Standard Precautions	As per Standard Precautions	As per Standard Precautions
Gowns/aprons	Wear gown when close physical contact, e.g.	As per Standard Precautions	As per Standard Precautions	As per Standard Precautions

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Transmission Based Precautions (Isolation Guidelines)

Action	Contact Precautions	Droplet Precautions	Airborne Precautions	Protective Isolation
	manual handling is anticipated. Wear plastic apron when limited contact with patient or environment is planned except in a case of Scabies where a long sleeved gown is required. Remove and dispose of before leaving room avoiding contact with outer surface.			
Mask	As per Standard Precautions	Surgical mask when entering the patient's room. Remove at exit to the room	Particulate Respirator (N95) on entering room (sized and fitted correctly). Remove outside room.	No mask required. Restrict entry to staff or visitors with upper respiratory tract infection
Goggles/Face shield	As per Standard Precautions	As per Standard Precautions	As per Standard Precautions	As per Standard Precautions
Linen	Place in red linen bag with water soluble liner.	Place in red linen bag with water soluble liner.	No special precautions for linen.	No special precautions for linen.
Waste	As per infectious/medical waste disposal. Dispose of inside room.	As per infectious/medical waste disposal. Dispose of inside room.	No special requirements	No special requirements
Visitors Refer also 1.2.4	Perform hand hygiene. Not required to wear PPE. See additional information.	Perform hand hygiene. Not required to wear PPE. Discourage visiting whilst patient actively symptomatic.	Perform hand hygiene. Not required to wear N95 if they have been in contact prior to / or immune to identification of causative organism. Visitors may need to be restricted.	Perform hand hygiene. Do not visit if unwell.
Transfer to other departments/hospitals	Ensure receiving area is aware of status of Contact Precautions prior to transfer.	Ensure receiving area is aware of status of Droplet Precautions prior to transfer. Patient to wear surgical mask.	Limit to essential transportation only. Ensure receiving area is aware of status of Airborne Precautions prior to transfer. Patient to wear surgical mask .	Ensure receiving area is aware of status of Protective Environment prior to transfer. Patient to wear surgical mask or N95 mask if high dust risk (risk assess).

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1.2 Additional General Information

1.2.1 Points to Consider when Working in Transmission-Based Precautions

1. Minimise the frequency of entrances into the room by collecting all the equipment required before entering the room.
2. Have the minimum amount of people in the room.
3. Have minimum amount of equipment in the room. When admitting into an isolation room, remove surplus equipment where possible.
4. Spend a minimum amount of time in the room if the person is acutely unwell with a highly transmissible infectious disease such as Norovirus.
5. When patients are placed in Transmission-based Precautions due to an infection or colonisation with an MDRO, efforts should be made to ensure patients continue to receive adequate medical and nursing care to counteract potential psychological adverse effects such as anxiety, depression and/or feeling of stigmatisation.
6. Consider nominating a buddy or runner who can assist staff working in Transmission-based Precautions, e.g. collecting and removing supplies or equipment.

1.2.2 Use of Personal Protective Equipment (PPE) in Isolation Rooms

- Generally, PPE should be put on outside and removed inside the room and placed directly into infectious/medical waste bins (exception is a N95 mask). Hand hygiene is performed prior to exiting the room.
- Remove PPE in a manner that prevents self-contamination or self-inoculation or environmental contamination with contaminated PPE or hands
- Remove the most heavily contaminated items first, i.e. gloves.
- Do NOT remove PPE prior to leaving a room when transporting blood or body fluid substance to the sluice for disposal e.g. a bedpan. Go directly to the sluice and remove PPE in the sluice after completion of task.
- In Contact Precautions ensure compliance with hand hygiene prior to a procedure or aseptic technique is maintained by changing gloves and performing hand hygiene within the room as per The 5 Moments of Hand Hygiene.

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- Refer [Standard Precautions](#) for more information on use of PPE.

1.2.2.1 Particulate Respirator (N95) Mask

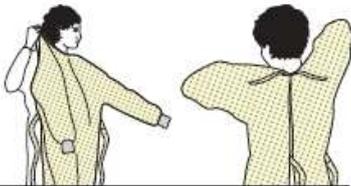
- A Particulate Respirator (N95) Mask is used for Airborne Precautions and aerosol generating procedures with any respiratory infection.
- NB: N95 mask fit testing of staff is no longer a routine requirement. However, staff must ensure that the mask worn forms a tight seal around nose/mouth before entering isolation room. [Refer IPC Intranet site for video](#) demonstrating correct fitting of mask
- Used Particulate Respirator (N95) Masks are considered contaminated and must be discarded following a patient episode of care. DO NOT REUSE

1.2.3 Sequences for Putting on and Removing PPE

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

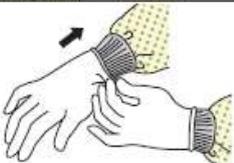
The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

- #### 1. GOWN

 - Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
 - Fasten in back of neck and waist
- #### 2. MASK OR RESPIRATOR

 - Secure ties or elastic bands at middle of head and neck
 - Fit flexible band to nose bridge
 - Fit snug to face and below chin
 - Fit-check respirator
- #### 3. GOGGLES OR FACE SHIELD

 - Place over face and eyes and adjust to fit
- #### 4. GLOVES

 - Extend to cover wrist of isolation gown

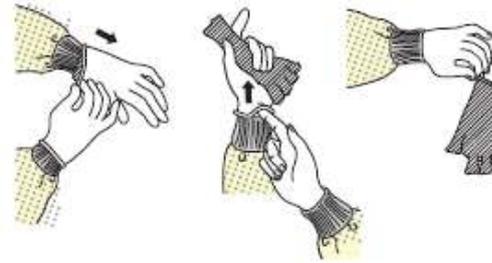
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SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glovet
- Discard gloves in waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



3. GOWN

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated – DO NOT TOUCH!
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container



1.2.4 Visitors

- Visitors, especially children, should consider delaying their visiting for patients in the acute phase of highly transmissible diseases such as Norovirus, Rotavirus, Influenza, Mumps and Measles.
- Visitors must not be discouraged from visiting patients with multidrug resistant organisms.

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- Visitors wishing to see other inpatients are requested to do so prior to visiting the patient in Transmission-based Precautions.
- Prior to entering a Transmission-based Precautions room, visitors require instructions on performing hand hygiene.
- All visitors must wash their hands or use alcohol-based hand rub prior to leaving a Transmission-based Precautions room.
- Visitors generally do not need to wear PPE (Refer Summary Chart for Isolation Precautions). There may be exceptions to this based on risk assessment e.g. TB – discuss with the IP&C service or Charge Nurse Manager.
- Visitors should not use ward toilets or enter staff areas.
- Visitors should not visit if they have symptoms of an infectious disease in the previous two days.

1.2.5 Cohort Isolation (Sharing Rooms)

- When a single room is not available, an infected or colonised patient may be placed with another patient who is infected with the same micro-organism provided that:
 - Neither patient is infected with other potentially transmissible micro-organisms.
 - The likelihood of re-infection with the same micro-organism is minimal.
- Ensure the patients are physically separated.
- Change PPE and perform hand hygiene between contact with patients in the same room.
- It is important to be certain of the mode of transmission of the known or suspected pathogens. Contact the Infection Prevention and Control Service if cohorting of patients is being considered.

1.2.6 Laboratory Specimens

- All human blood and body substances must be treated as if they are infected or contaminated with infectious agents; therefore there is no need to label as infectious.
- Care should be taken when collecting specimens to avoid contamination of the outside of the container. Ensure specimen container is closed securely.

1.2.7 Deceased Patients and Infectious Diseases

Body bags are **only** required in the following circumstances:

The body is:

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- Leaking body fluids which are not containable or where gross external contamination of blood is present, **OR**
- Deemed to be at high risk of leaking body fluids by nature of condition, e.g. oedema, aspiration, extensive burns, trauma, **OR**
The patient:
 - Had or was suspected of having a Viral Haemorrhagic Fever, **OR**
 - Has confirmed/suspected Emerging New Infectious Disease (ENID) which may have resulted in death.

Body bags are available from Mortuary or Undertaker and can be requested via the Mortuary staff or orderlies out-of-hours.

- The ward staff **must** advise the Mortuary if a patient is known or strongly suspected of having one of the following infectious diseases. **However, a body bag is not necessary unless any of the criteria above are present.**
- Spongiform encephalitis, e.g. Creutzfeldt Jacob Disease
- Ebola Virus Disease
- Hepatitis B
- HIV/AIDS
- Hepatitis C
- Tuberculosis
- Typhoid/paratyphoid
- Meningococcal meningitis/septicaemia (if death occurs before 48 hours of suitable antibiotics given).
- Invasive Beta-haemolytic Streptococcus Group A disease (if death occurs before 24 hours of suitable antibiotics given).

1.3 Transmission-Based Precautions Cleaning and Disinfection

1.3.1 Daily Cleaning

- Clean room last.
- No special cleaning solutions are required for daily cleaning of room.
- Disposable cloths must be used.
- Focus on frequently touched surfaces and equipment such as bed rails, over bed tables, commodes, door knobs, call bells.
- Protective equipment is worn by cleaning staff in accordance with Transmission-Based Precautions sign outside room.

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1.3.2 Terminal Cleaning

Terminal Cleaning occurs on patient discharge from Contact Precautions.

Terminal cleaning can be undertaken using steam cleaning or the use of an environmental disinfectant.

- Nurse-in-Charge contacts cleaning services to arrange.
- Privacy, window, shower curtains (if applicable) require removing prior to terminal clean.
- Curtains to be sent to laundry in black laundry bags.
- Steam clean or disinfect surfaces using an approved CDHB disinfectant e.g. Sodium hypochlorite (Presept/Chlorwhite) 1000ppm. 70% alcohol wipes may be used for electronic equipment but not to be used on display panels of electronic equipment.

1.3.3 Bed Space Disinfection

The disinfection of the bed space follows the identification of an infectious patient in a multi bed room and their subsequent transfer to a single room or discharge. The multi bed room in these instances is not in Contact Precautions.

- Transfer or Discharge
 - privacy curtains are removed for laundering
 - bed, locker, chair and equipment transferred to the single room with patient
 - horizontal and touch points disinfected

1.5 Notifiable Diseases in New Zealand (includes suspected cases)*

Refer to Intranet guidelines

Measurement/Evaluation

Environmental audits

Ward rounds

References

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