

Ebola Virus Disease Guidelines

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Purpose

To describe the infection prevention and control procedures used in the management of a case of suspected or confirmed Ebola Virus Disease (EVD).

This document is divided into two parts:

1. EVD cases admitted to Christchurch Hospital
2. Cases presenting to Christchurch Hospital Emergency Department, Burwood, Ashburton and Christchurch Women's Hospital departments and other outlying facilities.

Scope

All clinical and non-clinical staff who are involved in the care of a suspected or confirmed EVD case.

Associated documents

- [IPC Intranet EVD procedures](#)
- [Ministry of Health Ebola Information for Health Professionals](#)
- [CDHB Community & Public Health Ebola Virus Disease Protocol](#)
- [CDHB Infection Prevention & Control Policy, Standard Precautions](#)
- [CDHB 'Guidelines for Patient Management Pathway – Suspected Ebola Virus'](#)
- Ebola Readiness Pack List of Contents (Appendix 1)

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Definitions

Refer to [Ministry of Health](#) for current definitions.

Equipment and forms

Refer [IPC Intranet EVD Procedures](#) for documents below.

- Isolation Room checklist for inpatient area
- PPE posters and instructions
- Signage
- Check list for Ebola Readiness packs
- Inpatient toilet sign

Refer individual procedures for other equipment required.

Relevant training

Advanced personal protective equipment (PPE) training.

Patient Management Pathway

A person who presents to any CDHB facility and meets the Ministry of Health (MOH) definition for suspected or confirmed Ebola Virus Disease (EVD) must be managed as per the CDHB '[Guidelines for Patient Management Pathway – Suspected Ebola Virus](#)'.

A suspected EVD patient may present at the Christchurch Hospital Emergency Department, Birthing suite, Gynaecology ward or other outpatient department, or at another CDHB hospital facility.

EVD readiness packs shall be available at all CDHB departments that may have a suspected case presentation (refer Appendix 1).

Admission to an inpatient ward will only be made after assessment by a Medical Officer of Health or Infectious Diseases Physician.

Christchurch Hospital is designated as the regional referral centre for inpatient EVD admission.

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1 EVD procedures for Christchurch Hospital inpatient area

1.1 Patient Placement

A suspected or confirmed EVD case may be admitted from another CDHB facility or directly transferred from the community or another DHB hospital in the South Island.

The current designated inpatient ward for a suspected or confirmed EVD admission is the Acute Medical Admission Unit (AMAU) in Christchurch Hospital.

One half of the AMAU is designated as an EVD inpatient area incorporating the three negative pressure rooms.

This area is zoned and marked with coloured floor tape for the effective implementation of EVD isolation procedures.

Ensure signage is in place including the isolation room check list.

Refer to AMAU EVD procedures for further details relating to zoning and set up.

1.2 Use of Personal Protective Equipment (PPE)

An advanced level of PPE shall be used when attending to or caring for a suspected patient with EVD.

All staff who are caring for an EVD inpatient must be competent in the use of advanced PPE and undergone training and/or refresher within the previous 12 months.

PPE must be approved by the CDHB IPC Service.

Refer to [IPC Intranet EVD Procedures](#) for detailed procedures for advanced PPE.

1.3 Patient Equipment

Store all equipment in patient room

Use disposable equipment where possible

Disinfect any reusable equipment with sodium hypochlorite solution 1000ppm after patient discharge in consultation with IPC Service

Suggested equipment

- Boxes of disposable gloves – all sizes
- Disposable plastic aprons
- Spare face protection e.g. face visor

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- Detergent wipes
- Disinfectant wipes - suggest cleaning wipes (available from cleaning contractors) soaked with sodium hypochlorite solution 1000ppm (2 x tablets Presept 0.5G in 500mls water)
- Cleaning bowl
- Dedicated sphygmomanometer (disposable cuff if available)
- Oxygen saturation monitor – disposable finger probe
- Disposable thermometer
- Laboratory (POCT) i-STAT®
- Small stock of disposable linen
- Yellow infectious waste bags
- Infectious linen bag and liner (for reusable linen pending diagnosis confirmation)
- White board and pen
- Baby monitor or other 2 way communication device
- Other medical equipment as advised by the clinical team

1.4 Linen and Laundry

Disposable linen shall be used and disposed of as EVD waste.

If this is not possible then the usual hospital linen is disposed of as EVD waste.

For suspected patients awaiting laboratory confirmation for EVD, used linen may be held in the designated waste room in an infectious linen bag pending results. If results confirm EVD, the linen must be discarded.

1.5 Waste Management

1.5.1 Key Points

The safe handling and management of waste generated through the care of patients with EVD is based on three main principles:

- Safe containment and packaging of waste should be performed as close as possible to the point of generation. Staff must not open containers to manipulate waste after primary containment.
- Limit the number of personnel entering the EVD patient care area and those handling generated waste before and after primary containment.

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- Always use appropriate personal protective equipment and procedures for handling waste.

1.5.2 Waste Containers

- All EVD waste must be transported as class UN2814 Category A.
- The waste contractor will provide a lined UN2814 approved 120 litre drum which meets this category. The drums are stored in the designated disposal/collection room by the external AMAU doors
- EVD related waste must be triple packed with approved liners (the waste disposal provider will provide the 3rd layer by way of drum liner).
- Large foot pedal waste bins shall be available in the following locations:
 - Patient room
 - Ensuite bathroom
 - Ante-room
 - PPE removal Orange Zone (always ensure there are two bags in this bin)
 - Waste disposal room
- Yellow infectious waste bags must be used in all waste bins
- Waste bags must be securely positioned within the bin so that the opening is easy to handle
- Bags are secured with plastic cable ties
- Bags must not be filled more than 2/3rd full
- Waste bins shall be cleaned and disinfected daily or if visibly contaminated

1.5.3 Designated Disposal Room

- A room shall be designated as a holding bay for EVD waste awaiting pickup by the waste contractor
- The room shall be secure from the public
- The room shall be easily accessible from the EVD inpatient rooms

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- The room shall be easily accessible by the waste contractor for delivery and pick up of waste containers
- The room shall be able to be easily cleaned and disinfected
- The room shall contain the following items:
 - Hand washing facilities
 - A large waste bin lined with a yellow infectious waste bag
 - Detergent wipes
 - Disinfectant wipes (refer 3.1)
 - Additional disposable gloves, aprons and long sleeved gowns (in case of spill)
 - Cable ties
 - Additional yellow infectious waste bags

1.5.4 Removal of waste

Equipment

- Yellow infectious waste bags
- Plastic cable ties
- Body bags for isopod or other larger waste (obtain from mortuary)
- Detergent wipes
- Disinfectant wipes (refer 3.1)
- Personal Protective Equipment
 - Long sleeved disposable gown
 - Two pairs of disposable long cuffed gloves
 - Surgical mask
 - Face shield
 - Further PPE as required

a) Procedure for disposing of EVD waste in patient zones

Step	Action
1	The Red Zone HCW shall check the waste bins prior to exiting the room and is responsible for changing the bags when required.
2	Immediately prior to exiting the room, remove the waste bag and close with a cable tie. Place on floor in ante-room Place a fresh bag in the waste bin

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3	Engage Buddy and indicate that there is waste to be disposed of. The waste bag is disposed of before taking off PPE.
4	When Buddy has prepared the de-robing area, step outside of patient room onto Red Zone blue mat and place waste bag directly into another infectious waste bag in the waste bin located in the adjacent Orange Zone. Buddy may use the foot pedal to open the lid of this bin.
5	Buddy closes the 2 nd bag with a cable tie, removes from the waste bin and places on the floor until all waste bags are ready to transport to the holding room for collection
6	Buddy replaces yellow bag in Orange Zone waste bin – there should be two waste bags in this bin prior to the Red Zone HCW removing their PPE.
7	Red Zone HCW to continue to take off PPE as per procedure
8	When both the Red Zone HCW and Buddy have removed their PPE there will be a 2 nd double bagged waste bag to be removed

b) Procedure for transferring waste bags to designated disposal room

Step	Action
1.	HCW puts on disposable gown, gloves, surgical mask and eye protection
2.	Using a trolley, carefully transport the double bagged waste and /or sharps containers to the designated disposal room
3.	Place waste (including sharps container) into a lined UN2814 approved drum
4.	Do not over fill drum container. When 2/3rds full tie off the liner bag. Close lid of container and seal lid. Wipe outside of drum with (1000ppm) sodium hypochlorite solution-soaked wipes. Contact the waste contractor to advise of full drums ready for collection.
5.	Clean down trolley using pre-soaked wipes.
6.	Remove PPE and dispose of in infectious waste bin in disposal room
7.	Perform hand hygiene
8.	Place a 'cleaned' sticker on trolley and return trolley to 'Orange Zone'

1.6 Environmental cleaning

1.6.1 Key Points

The safe cleaning of the environment of patients with suspected or confirmed EVD is based on two main principles:

- Correct use of appropriate PPE.

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- Minimising the number of staff exposed to suspected or confirmed EVD patients.

1.6.2 Responsibility for cleaning of inpatient rooms

No CDHB cleaning contractors are to be involved in the cleaning or decontamination of EVD areas, (unless patient is confirmed EVD negative).

It is recommended that daily environmental cleaning is undertaken by those working in the patient area to reduce the bio burden of EVD.

1.6.3 Daily cleaning

Routine cleaning of patient areas is to be done by the medical and nursing staff working within the EVD red zone.

In addition, the area assigned to removing PPE (Red and Orange Zones) should be cleaned and disinfected daily and after each use

1.6.4 Terminal clean post discharge

Confirmed EVD case: Contact the Medical Officer of Health to discuss who may advise using an external expert decontamination contractor.

Unconfirmed EVD case: Discuss with the Infection Prevention & Control Service so that a risk assessment can be made as to the level of decontamination required.

Negative EVD case: Routine discharge clean.

1.6.5 Cleaning Procedures

PPE must ALWAYS be worn for cleaning the environment of a suspected or confirmed EVD patient.

All cleaning materials must be disposed of in infectious/medical waste.

Equipment

- Detergent wipes
- Disinfectant wipes – refer 3.1

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- Fluid absorption granules/powder
- Bucket
- Disposable mop head with re-usable handle
- Yellow infectious/medical waste bags
- Plastic cable ties
- Personal Protective Equipment as per guidelines

Procedure for routine room cleaning

Step	Action
Days 1-3 (allows time for laboratory confirmation of diagnosis)	
1.	Visibly contaminated areas must be cleaned with detergent wipes prior to disinfection
2.	The red zone worker (nurse or doctor) shall wipe the following with disinfectant wipes at least twice daily: <ul style="list-style-type: none"> • all touch points • horizontal surfaces • toilet seat and flush handle/button (unless patient able to do this) • parts of the bed/trolley not covered with bedding
3.	If patient is able, they should be asked to wipe toilet seat and flush handle/button with disinfectant wipe after each use and dispose of wipe in yellow infectious/medical waste bag. There is an appropriate toilet notice available from the IPC Service
4.	The red zone worker (nurse or doctor) shall wipe the outside of the waste container daily with disinfectant wipe
Days 4 onwards (in addition to above)	
5.	Clean the floor daily using a disposable mop and sodium hypochlorite solution diluted to 1000ppm

Small Spills (<10cm diameter)

Step	Action
1.	Small spills to be removed with disposable absorbent wipe
2.	Clean area with disposable detergent wipe
3.	Disinfect area with disinfectant wipes (refer 3.1)
4.	Dispose of cloths and wipes in yellow infectious/medical waste bag in room.

Large Spills (>10cm diameter)

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Step	Action
1.	Absorb with absorbent granules and remove with disposable wipes
2.	Clean area with disposable mop and detergent solution
3.	Wipe area again with chlorine solution diluted to 1000 ppm OR if there is a blood spill use at 5,000 ppm (9 x 0.5G Presept tablets in 1litre water)
4.	Dispose of cloths and mop head in infectious/medical waste bag
5.	Empty bucket carefully into en-suite toilet. Close lid and flush

1.7 Visitors

The decision to allow visitors for a suspected or confirmed EVDE patient will be made by the Medical Officer of Health in discussion with the Infectious Diseases Consultant and Nurse in Charge.

Visitors shall only be permitted on a case by case basis.

The following procedures **MUST** be followed:

- Details of visitors entering the room shall be recorded in a dedicated log book
- Visitors shall wear the same PPE as clinical staff
- Visitors shall be trained in how to safely don and remove PPE by a person trained in advanced PPE appropriate for EVD.
- If a visitor is unable to safely don and remove the PPE they shall not be allowed to enter the room
- Visitors **MUST** be observed by a trained clinician when removing PPE. Any breaches in PPE removal shall be reported to the Medical Officer of Health

Security may be required to enforce access restrictions

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2 EVD procedures for all other CDHB hospital sites

Includes Ashburton Hospital, Burwood Hospital, Primary Care Units, Christchurch Women's Hospital, Christchurch Emergency Department

NB: Refer also generic procedures on pages 2-3

2.1 Patient Placement

Refer to the relevant Emergency Planning flow charts for each site.

All sites should have a designated room identified for temporary placement of a suspected EVD case.

2.2 Use of Personal Protective Equipment (PPE)

The level of PPE for suspected EVD cases presenting at other departments is based on an assumption that the patient is a 'dry' case – that is the person is not actively vomiting or incontinent.

PPE shall be in line with Ministry of Health Guidelines for Primary Care.

Where patient safety allows, avoid physical contact with a suspected case to minimise exposure.

Only staff members who are competent in using standard PPE shall care for the patient, pending review by a Medical Officer of Health or Infectious Diseases physician.

Table 1: PPE Requirements for departments

Department	Long sleeved gown	Disposable gloves	Mask	Eye protection	Other (overshoes / bootees / head covering)
Emergency Department	✓	✓ (single pair)	Surgical	Goggles / visor	X
Birthing Suite/Gynae ward	✓	✓ (single pair)	Surgical	Goggles / visor	X
Other hospital sites designated room	✓	✓ (single pair)	Surgical	Goggles / visor	X
Outpatient departments	✓	✓ (single pair)	Surgical	Goggles / visor	X

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2.3 Linen and Laundry

Disposable linen shall be used and disposed of as EVD waste.

If this is not possible then the usual hospital linen is disposed of as EVD waste after confirmation of EVD.

2.4 Waste Management

Normal foot operated large medical waste bin with yellow infectious waste bag.

2.4.1 EVD waste from Christchurch Campus departments outside of AMAU

Applies to Emergency Department, Christchurch Women's Hospital and any other ward or department on the Christchurch Campus that identifies a potential EVD case and subsequently generates EVD-related waste.

- All waste to be double bagged at point of use using appropriate PPE
- Waste bags to be transported to the AMAU waste disposal room by a departmental staff member who has already had contact with either the waste or the patient. Orderlies must not be asked to transfer the waste.
- Where possible transfer the waste bag/s using a trolley or the same wheelchair which has been used to transport the patient.

Refer to 1.5.4 Transferring waste bags, Steps 3-8

2.4.2 Waste from CDHB satellite hospitals and rural facilities

Waste is managed as per Ministry of Health Guideline for Primary Care EVD

2.4.3 Canterbury Health Laboratory-generated EVD waste

The CHL processes and procedures for management of EVD specimens and testing include waste management details

All CHL EVD waste will be autoclaved prior to removal from the PC3 laboratory

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2.5 Environmental cleaning

Once the patient has been transferred or discharged, no other patient or staff member is to use the room or any other potentially contaminated areas until the appropriate level of cleaning and disinfection is assessed and undertaken.

If the patient has experienced vomiting, diarrhoea or loss of body fluids in these areas contact the Medical Officer of Health as it is likely that they will advise that the cleaning be undertaken by an expert external contractor.

If there is no evidence of body fluid contamination, the assessment room, all frequently touched surfaces and any other facilities used e.g. toilet, must be cleaned as per ED and other CDHB facility assessment areas procedure below.

Waiting rooms and corridors etc. where the suspected EVD patient has passed through and there is no visible contamination (body fluids) do not need to be specifically cleaned and disinfected.

Procedure for cleaning rooms previously occupied by suspected EVD cases

Step	Action
1.	Ensure you are wearing appropriate PPE (gown, mask, eye protection and gloves)
2.	Wipe over all surfaces and objects with detergent wipes and allow to dry. Dispose of wipes in yellow infectious/medical waste bag
3.	Wipe over all surfaces and objects with dilute sodium hypochlorite (1000ppm) solution or wipes and allow to dry. Dispose of wipes in yellow infectious/medical waste
4.	Remove and dispose of PPE as per guidelines and perform hand hygiene.
5.	Put on fresh gloves and dispose of double bagged waste as per guidelines
6.	If the patient has experienced vomiting ,diarrhoea or loss of body fluids, contact the Medical Officer of Health to discuss and get advice on cleaning by expert external contractor

References

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- Ministry of Health waste procedure for packaging of class UN2814 Category A waste in accordance with NZS5433:2012

Procedure Owner	Role title, no names, no departments
Procedure Authoriser	Role title, no names, no departments
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Appendix 1: Ebola Readiness Pack – List of Contents

EQUIPMENT	NOTES
1. Information Sheets – <ul style="list-style-type: none"> • Ebola Flow charts for specific hospital • PPE Donning procedure • PPE Doffing procedure • Patient Management Guideline for Primary Care Ebola virus disease, MOH 	
2. Patient Information Sheet	Provides an explanation to the patient of why they are being placed in a separate area and what to expect
3. Alcohol based Hand Rub/gel	One bottle
4. Yellow long sleeved Disposable Gown	3 gowns – 1 for assessing patient and 2 for cleaning and waste disposable
5. Disposable gloves	9 pairs of each size
6. Surgical mask	Surgical masks must meet fluid repellent standards – check on box
7. Eye protection (Goggles) or Face shield	2 pairs goggles OR 2 face shields – DO NOT USE BOTH
8. Bowl	For use when making up detergent solution for cleaning surfaces prior to disinfecting with bleach solution
9. Squeezy Plastic bottle to make up Chlorine solution – oracle code 181062	300- 500ml bottle. Avoid ‘spray’ bottles when using chlorine solutions
10. Presept	Make up Presept at time of incident as per instructions for 1000ppm (4 0.5G tabs to 1 litre) Label diluted container with chemical and date Do not store made up solution for more than 24 hours
11. Disposable cleaning wipes – Multipurpose wipe Reynards – oracle code 122204 (16 pkts in carton) Chux clothes 10/pkt oracle 107731	For use with detergent and chlorine solutions. Chux clothes are not usually disposable but in this situation will be disposed of.
12. Infectious waste bags and cable ties	Two yellow infectious bio-waste bags for used PPE and cleaning materials Several cable ties
13. Patient vomit container	
14. List of important contact numbers	<ul style="list-style-type: none"> • Community and Public Health – Canterbury Ph: 03 364 1777 • Interwaste for disposal of infectious waste Phone: (03) 3445000 Mobile: 021 905211

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