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RESIST
Antimicrobial Resistance and Infection Control Team

Infection Prevention and Control Guidance for the management of suspected/ confirmed High Consequence Infectious Diseases (HCIDs) in Acute Healthcare settings

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List of Abbreviations

AGPs	Aerosol Generating Procedures
ABHR	Alcohol-based Hand Rub
AMRIC	Antimicrobial Resistance and Infection Control
CCHF	Crimean Congo Haemorrhagic Fever
CEC	Clinical Excellence Commission
CPHM	Consultant in Public Health Medicine
ECDC	European Centre for Disease Prevention and Control
ED	Emergency Department
EVD	Ebola Virus Disease
GP	General Practitioner
H&CW(s)	Health and Care Worker(s)
HCID	High Consequence Infectious Disease
HLIU	High-Level Isolation Unit
HPAI	Highly Pathogenic Avian Influenza
HPSC	Health Protection Surveillance Centre
HSA	Health and Safety Authority
HSE	Health Service Executive
ID	Infectious Diseases
IMT	Incident Management Team
IPC	Infection Prevention and Control
MAU	Medical Assessment Unit
MERS	Middle East Respiratory Syndrome
MOH	Medical Officer of Health
MPXV	Mpox Virus
MVD	Marburg Virus Disease
NCEC	National Clinical Excellence Committee
n.d	No date
NHPO	National Health Protection Office
NIU	National Isolation Unit

NSW	New South Wales
NVRL	National Virus Reference Laboratory
OOH	Out of Hours
PCRA	Point of Care Risk Assessment
PHEIC	Public Health Emergency of International Concern
PPE	Personal Protective Equipment
SARS	Severe Acute Respiratory Syndrome
SFTS	Severe Fever with Thrombocytopaenia Syndrome
SPHM	Specialist in Public Health Medicine
UKHSA	The UK Health Security Agency
VHF	Viral Haemorrhagic Fever
WHO	World Health Organization

1.0 Introduction

The aim of this document is to provide guidance on Infection Prevention and Control (IPC) measures for Health and Care Workers (H&CWs) caring for individuals with high consequence infectious diseases (HCIDs), contact or airborne, both suspected and confirmed. This includes guidance on patient placement, preparedness planning, transmission-based precautions, personal protective equipment (PPE) selection, environmental cleaning and disinfection, linen handling, and waste management.

HCIDs, although uncommon, may have a considerable impact both on the community and on the delivery of health services. All acute healthcare facilities need to have processes and preparation in place should a patient present with an HCID.

Infection prevention and control (IPC) measures are based on the principles of standard and transmission-based precautions. When implemented effectively, IPC measures prevent or control transmission of infections, keeping patients, H&CWs, and visitors/caregivers safe. Consistent application of standard precautions within the clinical environment remains the most effective way to prevent transmission of HCIDs. A point of care risk assessment (PCRA) should be conducted by every H&CW for every interaction with every patient, as this will enable the early identification of an individual with an HCID. More information regarding PCRA is available in Section 4.3 below, and on the HSE website here.

Workplace health and safety legislation mandates that employers have a duty of care to ensure workplace health and safety, including managing the risk of occupationally acquired infections. Workplace facilities must implement a robust risk assessment process aimed at eliminating risks where possible, and, if not, reducing them to ensure a safe working environment. The health and safety legislation relevant to Ireland can be found on the Health and Safety Authority (HSA) website.

2.0 Purpose and Scope

2.1 Purpose

The guidance contained within this document relates only to the use of HCID IPC measures for the first point of access (where patients present) to healthcare facilities. The purpose of this document is to describe the IPC measures that should be considered and implemented by H&CWs who are in contact with a patient with:

- a suspected HCID
- **OR** a confirmed HCID case prior to transfer. The National Isolation Unit (NIU) at Mater Misericordiae Hospital, Dublin is the national referral centre for high-risk adult cases. A new High-Level Isolation Unit (HLIU), a purpose-built ICU-level isolation facility, is under construction and will be completed in 2025.
- **OR** a confirmed HCID where transfer may not be necessary or feasible.

2.2 Scope and Summary

This guidance is **intended for H&CWs in acute adult and paediatric settings**, including Emergency Departments (EDs), Medical Assessment Units (MAUs), GP surgeries, GP Out-of-Hours (OOH) services, and other outpatient settings where individuals with suspected HCIDs may present. It outlines the necessary steps to take while awaiting transfer to a NIU, or other appropriate management settings.

The National Isolation Unit (NIU)as a designated HCID treatment centre, should follow recommendations appropriate to the clinical setting. Such recommendations are beyond the scope of this document.

The requirements for suitable and adequate PPE in the ambulance service may differ due to the settings and conditions in which they operate. The ambulance service should continue to follow advice on HCID PPE set out by the National Ambulance Service (NAS).

While this is a stand-alone document, it is intended to be used in conjunction with the resources listed in **Box 1** below:

Box 1 – Links to Relevant Guidance

1. The National Clinical Excellence Committee (NCEC) National Clinical Guideline No. 30 Infection Prevention and Control

a) The following sections of Volume 1:

- Application of transmission-based precautions (p 88)
- Contact precautions (p 91)
- Droplet precautions (p 95)
- Airborne precautions (p 98)
- Personal Protective Equipment (PPE) (p 103)
- Staff health and safety (p 168)

b) The following sections of Volume 2:

- Table 44, Precautions for specific infections and conditions (p 252)

2. Guidance specific to diseases or pathogens may be found in the relevant section of the Health Protection Surveillance Centre website.

2.2.1 Summary Chart

Figure 1 below provides a condensed summary of the more detailed **Table 3**, outlining key IPC requirements for managing patients with confirmed or suspected HCID.

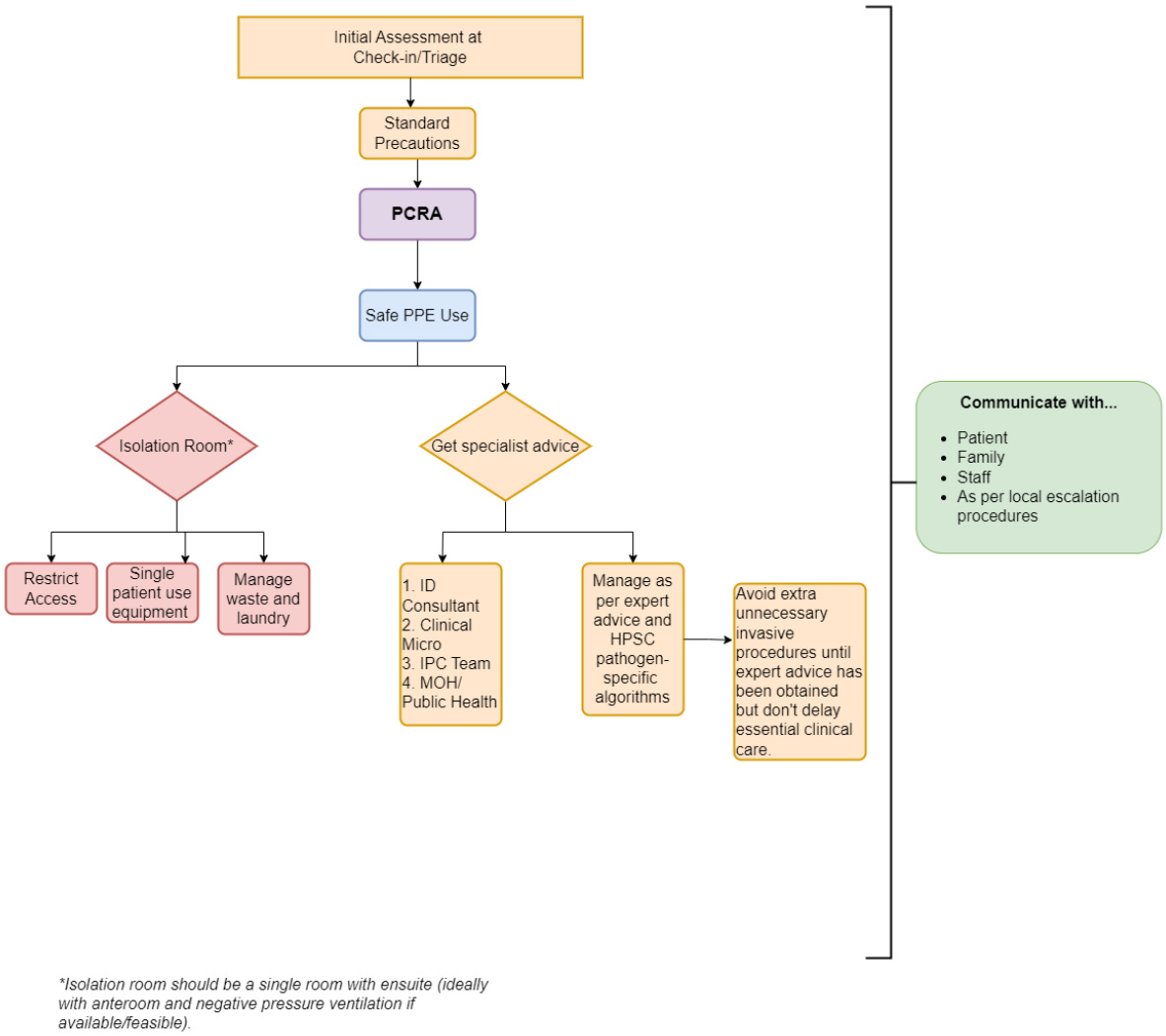

Figure 1 - Summary of Table 3 - Immediate IPC Actions when managing patients with suspected HCID

The document includes practical tables and checklists located in the following sections:

- Table 3 – Immediate Actions to be taken when an Individual is Identified as a Suspect or Confirmed Case of HCID
- Table 6 – Summary of HCID IPC Considerations
- PPE Donning and PPE Doffing
- Preparedness Checklist

3.0 Background

3.1 High Consequence Infectious Diseases – Definitions and Key Pathogens

HCIDs pose significant threats to human health. HCIDs can cause affected individuals to exhibit severe symptoms necessitating intensive care, and often have high case-fatality rates. Frequently, there is no specific prophylaxis or treatment available. HCIDs are contagious, requiring transmission precautions for H&CWs. Depending on their mode of transmission and infectivity, there is potential for large-scale epidemics (e.g., Ebola in West Africa 2014 or SARS in 2003) or even pandemics (e.g., the COVID-19 pandemic in 2020 or the Spanish influenza pandemic in 1918).

HCIDs are not endemic in Ireland, where the environmental conditions are unlikely to support the natural reservoirs and vectors of many of the HCID pathogens. The likely introduction of a HCID into Ireland would be via a person who has travelled to an endemic region or who has been in contact with a HCID case. Such an individual could present with a variety of symptoms to a healthcare provider, including an emergency department (ED) or primary care setting. Several HCIDs are transmissible from person to person and therefore require H&CWs to take precautions to prevent transmission.

3.1.1 Definitions

A HCID is defined as an acute infectious disease that meets the following criteria (as outlined by the European Centre for Disease Prevention and Control (ECDC) and the UK Health Security Agency (UKHSA):

- typically has a high case-fatality rate
- may not have effective prophylaxis or treatment
- often difficult to recognise and detect rapidly
- ability to spread in the community and within healthcare settings
- requires an enhanced individual, population and system response to ensure it is managed effectively, efficiently and safely.

3.1.2 Pathogens Considered to be HCIDs

HCID pathogens can be broadly categorised, according to mode of transmission:

1. ***Contact HCIDs*** may be spread by direct contact with an infected patient or infected fluids, tissues etc or by indirect contact with contaminated materials and fomites
2. ***Airborne HCIDs*** may spread by respiratory droplets or aerosol transmission, **in addition to contact routes of transmission.**

Table 1 below provides some examples of HCIDs and modes of transmission. **This is not an exhaustive list;** novel pathogens may not be included in the table. The HPSC website should be consulted for information on specific pathogens.

Table 1 - Examples of HCID pathogens and modes of transmission (adapted from guidance documents of ECDC and Clinical Excellence Commission, New South Wales [CEC, NSW])

Disease	Virus/Pathogen	Primary mode of transmission	PPE required
Andes virus infection	Andes virus (Hantavirus)	Airborne	**Based on Point of Care Risk Assessment (PCRA)**
Argentine haemorrhagic fever	Junin virus (Arenavirus)	Contact	
Bolivian haemorrhagic fever	Machupo virus	Contact	
Crimean Congo haemorrhagic fever (CCHF)	CCHF virus (Nairovirus)	Contact	
Ebola virus disease (EVD)	Ebola virus (filovirus)	Contact	
Influenza (avian, highly pathogenic avian influenza HPAI and novel)	Highly pathogenic A(H7N9) and A(H5N1). Highly pathogenic A(H5N6) and A(H7N7)	Airborne	
Lassa fever	Lassa virus (Arenavirus)	Contact	
Lujo virus disease	Lujovirus (Arenavirus)	Contact	
Marburg virus disease (MVD)	Marburg virus (Filovirus)	Contact	
Middle East respiratory syndrome (MERS)	MERS coronavirus (MERS-CoV)	Airborne	
MPox (monkeypox) (Clade I only)	MPXV Clade I	Contact (+ potential for Airborne)	
Nipah virus infection	Nipah virus	Airborne	
Pneumonic plague	Yersinia pestis (bacterium)	Airborne	
Severe acute respiratory syndrome (SARS)	SARS coronavirus (SARS-CoV)	Airborne	
Severe fever with thrombocytopaenia syndrome (SFTS)	SFTS virus	Contact	

4.0 Patient Management

4.1 Preparedness Planning

At all entry, access, and assessment/triage areas where patients are seen, staff should check each patient's travel history to identify symptomatic patients who may have travel-related HCID. This is a critical factor in determining risk on an ongoing basis (see **Table 1** for examples of HCID pathogens, and **Section 4.3** for Patient Risk Assessment including links to resources for country-specific risks and current alerts).

Each facility should have a clear process for urgent actions, including implementing local management plans and identifying contacts (contact tracing), including accompanying individuals, waiting room contacts, and H&CWs without appropriate PPE. Each facility should have clear communication processes and risk documentation, along with a plan to manage these risks. This includes transportation to the NIU, and consultation with an ID Consultant.

4.1.1 Preparedness planning: Personal Protective Equipment (PPE) and shared equipment

As part of preparedness planning and the management of PPE and shared equipment, the following steps should be implemented:

1. Ensure that all assessment areas have access to appropriate PPE (see **Table 6**).
2. Strengthen the processes to ensure that all staff are familiar with the selection and application of PPE based on a **point of care risk assessment (PCRA).**
3. Support staff training via **Antimicrobial Resistance and Infection Control (AMRIC)** modules available on HSEland (AMRIC Hub) and recommend refresher training to ensure consistent approaches. Prioritise reviewing training records for H&CWs. Additional training and simulation exercises, including risk assessment and management, are recommended to help staff identify and manage individuals with suspected or confirmed HCIDs, especially at points of entry like EDs.
4. In acute healthcare settings, both adult and paediatric, it is essential to identify suitable en-suite isolation rooms. Each room should be single occupancy and ideally equipped with negative pressure ventilation (if available) and an anteroom for donning and doffing PPE. These rooms should be located close to patient entry points and have a ready exit route for onward transfer if necessary. Local arrangements must be in place to urgently vacate these rooms if they are occupied when a suspected HCID patient presents. If an anteroom is not available, a dedicated zone for PPE donning and doffing must be identified as part of preparedness planning. In GP or GP out-of-hours settings,

a single room should be used for patient assessment. This room must be cleaned and disinfected after each use (see **Table 6**). Any accompanying individuals should be managed as part of this process.

5. All EDs should maintain and have readily accessible appropriate PPE stock (FFP2/3 respirators, gowns, eye protection, etc.) as standard. Additionally, keep PPE kits for managing suspected or confirmed HCIDs, and regularly review and maintain these kits as part of routine emergency/disaster management equipment stores.
6. Ensure that dedicated patient care equipment can be provided in selected isolation rooms. Provide clear processes for the cleaning/disinfection processes for shared equipment (for example, ventilators, monitors and ultrasound devices).

4.2 Management and escalation planning

Each acute healthcare facility should develop a management plan which includes all essential elements for individuals with confirmed or suspected HCIDs (including for clinically stable and unstable patients). In this plan, it is important to establish clear communication pathways to notify, escalate, and convene an urgent incident management team (IMT). This ensures the safe management of individuals presenting with a HCID at the facility and their transfer through established national protocols.

4.3 Immediate Measures, Point of Care Risk Assessment (PCRA)

In the event that a symptomatic patient with a possible HCID (based on history of recent travel to an endemic country or known exposure to a HCID and compatible symptoms) presented to any healthcare setting (for example, the ED of an acute hospital), the approach outlined below is recommended.

4.3.1 Patient Risk Assessment

The aims of a patient risk assessment are:

1. To provide advice on initial actions to ensure the safety of the patient and the H&CW while conducting a point of care risk assessment,
2. To determine the likelihood of a HCID in the patient presenting.

The possibility of HCID should be considered in any sick person with a recent history of travel to an endemic country, who has no clear features of an alternative diagnosis.

4.3.1.1 Online Resources Regarding Country-Specific HCIDs

Box 2 below summarises online resources where country-specific information in relation to various HCIDs may be obtained:

Box 2 – Online Resources for Country-Specific HCID Information

- The UKHSA have published a list, on their website, outlining the country-specific risks for HCIDs.
- The TravelHealthPro website operated by the UK-based National Travel Health Network and Centre (NaTHNaC) and funded by UKHSA, provides essential travel health advice for each country.
- The WHO provides information on confirmed acute public health events or potential events of concern on the Disease Outbreak News section of their website.
- The ECDC website offers up-to-date information on the geographical distribution of infectious diseases, with data available in various formats, including interactive maps, databases, dashboards, and downloadable datasets. https://www.ecdc.europa.eu/en/data/maps

H&CWs should promptly protect themselves and others if they suspect a patient has a HCID. The clinical features in **Table 2** below should raise suspicion of a HCID.

Table 2 - HCID Risk Assessment (adapted from CEC, NSW)

<table>
<tr><td><u>Travel History</u>

Person has a recent (within past 21 days) travel history to an area where cases of the HCID have occurred or disease is endemic</td><td><u>OR</u></td><td><u>Close Contact</u>

Exposure to known or suspected case of HCID (present or past)

For example, contact with a person with a HCID, or cared for a patient with a HCID or come into contact with body fluids or contaminated waste from such a person, contact with sick/dead animal(s) etc.</td></tr>
<tr><td colspan="3"><u>AND</u></td></tr>
<tr><td colspan="3"><u>Symptom profile consistent with HCID*:</u>

• Fever greater than 37.5°C either on presentation or a patient who reports history of same in the previous 24 hours,

<u>AND/OR</u>

• New respiratory symptoms
• New rash.</td></tr>
<tr><td colspan="3"><u>OR</u></td></tr>
<tr><td colspan="3">Meets the case definition for a specific disease as specified by HPSC.

For many HCIDs, pathogen-specific risk assessment forms and clinical pathways can be accessed via the HPSC website by clicking on the specific pathogen in the Health Topics A-Z section</td></tr>
</table>

Although there could be other reasons for patients showing HCID-like symptoms, consider these cases as suspect until HCID is definitively ruled out, especially when there is a higher level of suspicion, for example following a WHO declaration of a Public Health Emergency of International Concern (PHEIC) or in response to national public health alerts.

It is important that patient care is NOT compromised, and essential investigations delayed while awaiting HCID sample result. However, **inform the laboratory in advance of high-risk exposure samples, and label as such.**

4.3.2 Identification and Isolation of Patients with suspected HCID

In the first instance, a point of care risk assessment (PCRA) should be conducted by every H&CW for every interaction with every patient, with a distance of at least 1 metre between the patient and the H&CW maintained (where possible). This will enable the early identification of patients presenting with signs and symptoms of a suspected HCID and guide the use of additional PPE. If HCID is suspected, the patient must be isolated immediately and contact precautions should be used.

A poster regarding the PCRA may be found on the HPSC website at the following link: Posters - Health Protection Surveillance Centre (hpsc.ie), with more detailed information regarding how to conduct a PCRA available on the HSE website here.

When undertaking a PCRA on a patient under investigation for a HCID, the type of PPE required will primarily be determined by the clinical status of the patient, in particular, whether a patient is in a 'dry' phase or in a 'wet' phase (the latter is a term used for patients who are vomiting, bleeding or having diarrhoea). It is very important to minimise the number of H&CWs present during the initial assessment.

4.3.3 Summary of Immediate Actions

Table 3 below provides a comprehensive list of immediate actions to follow should the patient risk assessment identify a risk of HCID

Standard precautions must be always applied for all patients and are summarised in **Box 3** below:

Box 3 – Summary of Standard Precautions:

- √ Hand hygiene according to the WHO 5 moments for hand hygiene
- √ The use of appropriate personal protective equipment (PPE)
- √ Respiratory hygiene and cough etiquette
- √ Safe injection practices (safe use and disposal of sharps)
- √ Aseptic technique
- √ Management of patient care equipment
- √ Environmental hygiene
- √ Safe handling and disposal of waste
- √ Management of laundry and linen.

Table 3 - Immediate Actions to be taken when an Individual is Identified as a Suspect or Confirmed Case of HCID (adapted from CEC, NSW guidance)

No.	Action to be taken	Completed
1.	**Initial assessment** and history at check in/triage	☐
2.	Apply **standard precautions** (see Box 3 and NCEC National Clinical Guideline No. 30 IPC - Vol 1, p20) for all patients at all times. Provide the patient with a surgical facemask (and emesis bag - if needed).	☐
3.	Conduct a **PCRA** to determine the risk of exposure to body fluids. (Assess patient for "dry symptoms", e.g. fever and fatigue or "wet symptoms", e.g. diarrhoea, vomiting or bleeding) (see **Table 4**)	☐
4.	**Safe PPE donning and doffing** procedures (PPE based on PCRA but typically includes, at a minimum, respirator, eye protection, gown and gloves). Perform hand hygiene before donning and after doffing as per WHO 5 moments. See **Appendix 3** for HCID PPE.	☐
5.	Immediately accompany the patient to a **single room for assessment.** This room should be ensuite, **preferably with negative pressure** ventilation (where available), and should ideally have **an anteroom for putting on and taking off PPE**.	☐
6.	**Restrict access** (staff and visitors) to the room to minimise exposure to others. The exception is when, in the view of the clinical team, it is essential for clinical care that a visitor enters the patient room (for example in the case of a child or vulnerable adult). In such cases a PCRA must be performed, and visitors must adhere to IPC guidance. Consider that the accompanying person may be a case or a contact.	☐
7.	Initial suspicion, following risk assessment- ensure that **urgent advice is sought** from ID consultant on call/Clinical Microbiologist/ IPC team/Paediatric ID consultant. Where there is no local ID expertise, discuss case directly with the Consultant/Specialist in Public Health Medicine (CPHM/SPHM) (contact details here). Urgent communications with local governance structures (including hospital management) should follow local escalation protocols.	☐
8.	Ensure that **single patient-use equipment** is available and allocated to the room.	☐
9.	**Manage waste**: PPE should be treated as Category A waste and stored securely until HCID status is confirmed. Mpox waste can be managed as Category B (see **Appendix 5**).	☐
10	**Do not delay essential tests** for diagnosis and management. **Avoid extra unnecessary invasive procedures** until ID consultant has been contacted and provided advice. **Inform the laboratory in advance of high-risk exposure samples, and label as such.**	☐
11	**Limit staff contact** and compile a line listing for staff/patients/others who have had contact with the patient – for follow up with Public Health and Occupational Health.	☐
12	Manage Patient as per **advice** from ID Consultant/ Clinical Microbiology/ Public Health. Refer to HPSC website for pathogen-specific management algorithms.	☐
13	**Communication** with the patient/family. Provide advice and information to the patient and/family or caregivers, e.g. Isolation precautions	☐

5.0 Personal Protective Equipment (PPE)

For comprehensive PPE and IPC guidance, see page 103 of NCEC National Clinical Guideline No. 30 IPC- Vol 1 and the HPSC website here. Proper use and correct sequencing of PPE are crucial to reduce transmission risk and prevent contamination.

5.1 Criteria for appropriate selection of PPE

This section advises on PPE for any person entering the room of an individual with a suspected HCID until the risk is determined. Donning and doffing PPE should be supervised by a trained observer/buddy (where possible) to ensure correct selection, fit, use and safe doffing and disposal. Initially, airborne as well as contact and droplet precautions are required until there is further clarification and information about the level of risk.

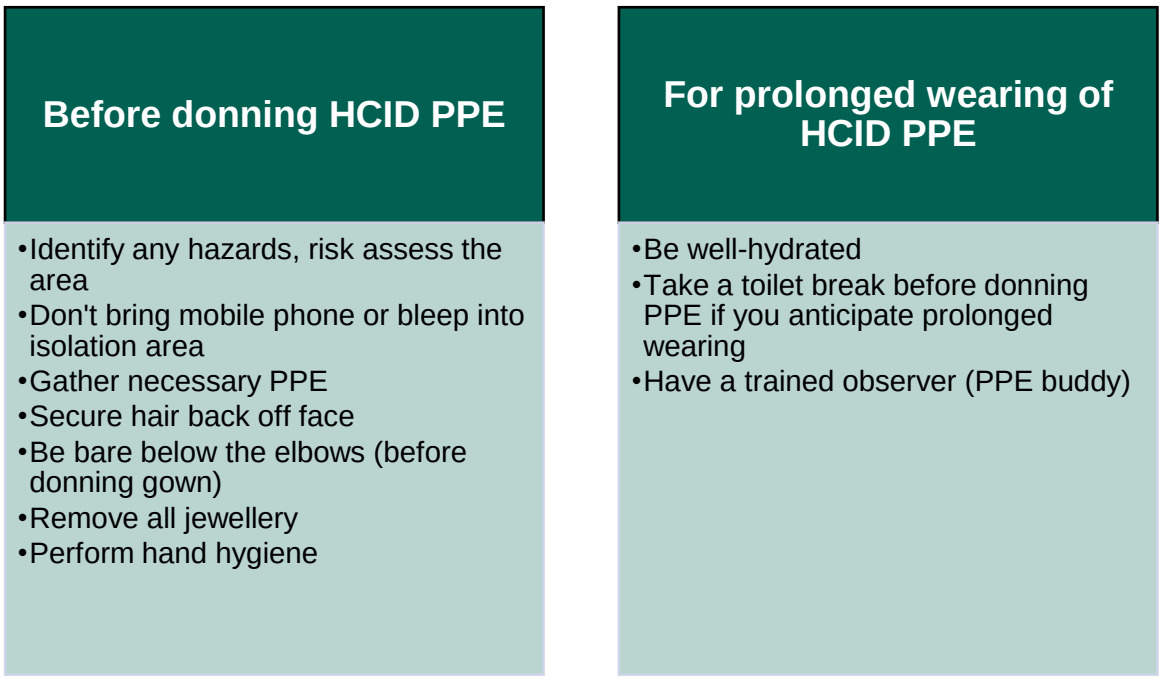

Figure 2 - Top 10 Tips Before Donning HCID PPE

Table 4 below guides the choice of PPE depending on the clinical scenario.

Table 4 - Levels of PPE and Clinical Scenarios

Level	Clinical Scenario	PPE Required
Level 1 (Low risk of transmission)	• **Suspect case**: e.g. dry case (non-fluid producer), cooperative patient • **Level of direct contact**: low	After risk assessment: • Disposable gown • FFP2 respirator mask • Eye protection (Goggles OR face shield) • Gloves
Level 2 (High risk of transmission)	• **Confirmed case** • **Suspect case**: e.g. wet case (fluid producer – bleeding, vomiting or diarrhoea, widespread systemic rash with pustules), unstable patient • **Level of direct contact** high	After risk assessment: Full body coverage required • Disposable fluid resistant long-sleeved gown • Respirator (FFP2/FFP3) mask • Surgical hood to cover head and neck (if available) • Disposable eye protection • Double gloves (double gloves) • Disposable fluid repellent below-knee boots

Ideally there should be a **designated area for donning clean and doffing contaminated PPE**. This should be separate from the patient care area. There must be sufficient space in the doffing area to allow freedom of movement for safe doffing of PPE.

The clean and contaminated areas should be clearly separated and signed. **Signage** should be used to clearly identify:

1. The patient care area
2. The PPE donning area
3. The PPE doffing area.

5.2 The role of the Trained Observer (PPE Buddy)

A trained observer's role is to support safe and effective donning and doffing of PPE to reduce contamination, particularly by H&CWs who are less familiar with wearing specific types of PPE.

The trained observer has the sole responsibility of ensuring that donning and doffing PPE processes are followed properly, for example to observe, assist and support H&CWs through these processes safely without self-contamination. This is achieved by maintaining a safe distance. The recommended PPE for the trained observer will vary depending on the trained observer's location and the anticipated tasks to be undertaken. Therefore, the trained observer should wear appropriate PPE based on the PCRA.

All acute healthcare settings must ensure that they have nominated trained observers who have received specialised training in the safe donning and doffing of Level 2 PPE. Posters and a checklist for the trained observer, to include instructions on the sequence of donning and doffing, should be available. The checklist should be completed and retained locally.

5.3 Donning and Doffing PPE

The sequence for putting on and removing PPE is illustrated in posters and videos on the **HSPC website**. See **Table 5** below for relevant links:

Table 5 - Links to Further Training on Donning and Doffing PPE

Training materials	Link
Posters for donning or doffing PPE	https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/posters/
Videos for donning or doffing PPE	https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/videoresources/
AMRIC training resources	Accessed via the AMRIC Hub at https://www.hseland.ie.

6.0 Summary of HCID IPC Considerations

Table 6 below summarises the IPC considerations for patients with confirmed or suspected HCID, and incorporates details on the following topics:

- √ Patient placement
- √ Standard and transmission-based precautions
- √ Management of visitors
- √ Sharps management
- √ Environmental cleaning
- √ Linen management
- √ Waste management

Regarding the following information, please note that not all elements may apply to every HCID.

Table 6 -Summary of HCID IPC Considerations (adapted from CEC NSW)

No.	IPC	Requirements
1.	**Isolation**	**Single room** with ensuite **preferably with negative pressure** ventilation (where available). Where such facilities are not available, interim arrangements may be required, such as use of commodes, disposable urinals and bedpans in the patient's room and designating restricted areas outside of the patient's room. Isolation room should ideally have **an anteroom for putting on and taking off PPE**. If an anteroom is not available, identify a clearly marked donning and doffing zone outside the room. Consider the patient's individual needs, including safety and cognitive capacity, when placing them into isolation. This should be balanced with the need to protect other patients, H&CWs, and public health. Display transmission-based precautions signage on or near patient door and to be clearly visible before any staff/ entry.
2.	**Patient**	Patients to wear a **surgical mask** (as appropriate) as a precaution on triage / registration, prior to placement in the isolation room and during transport. **Limit patient movement** as feasible within the healthcare setting. Manage the patient's **presenting health condition** also with suspected/confirmed HCID requirements
3.	**Visitors/nominated support person**	**Visitors are not recommended** (as appropriate) until the risk is clarified. Risk assess requirements for a **parent/nominated support person/carer** to be with the patient (for example in the case of a child, a vulnerable adult or on compassionate grounds) and support as appropriate. Consider if they are also suspected cases or contacts.
4.	**Hand hygiene**	H&CWs and visitors - WHO five moments for hand hygiene.
5.	**Transmission based precautions**	Apply **standard precautions** for all patients at all times. Use contact, droplet, and airborne precautions based on PCRA. (Refer to Table 1 for examples of HCID pathogens and modes of transmission)
6.	**PPE**	Use **PPE** as per standard precautions with additional PPE based on PCRA (see Table 4 above). PPE **trained observer** to support putting on and taking off PPE (if possible). (Refer to **Appendix 3**).

7.	**Laboratory testing**	Refer to **Section 7** below. **Inform the laboratory in advance of high-risk exposure samples, and label as such.**
8.	**Sharps management**	**Limit the use of laboratory testing** to the minimum necessary for essential diagnostic evaluation and patient care and as per discussion ID consultant/Clinical Microbiology/IPC team. Refer to page 48 NCEC National Clinical Guideline No. 30 IPC – Vol 1 Sharps containers disposal will follow local waste management and disposal process for waste (see below section on "waste management" in this table).
9.	**Communication**	**Inform H&CWs** of risks and risk management strategies for HCIDs. **Prior to transfer/or care**, relevant H&CWs must be informed of patient's suspected HCID status and exposure risks. Refer to local escalation pathways to communicate risk Maintain **patient privacy and confidentiality**.
10.	**Patient care equipment (Cleaning and Disinfection)**	Non-critical equipment In addition to routine management of non-critical clinical equipment, disinfection is also required, refer NCEC National Clinical Guideline No. 30 IPC – Vol 1, Table 3 for a summary of good practice statements, Volume 1, Table 9 for cleaning requirements for routine environmental cleaning, and Volume 2, Figure 4 for processes for routine cleaning and product choice For semi-critical and critical equipment Ensure routine disinfection/sterilisation reprocessing occurs, but no additional disinfection or sterilisation cycle is required. Meal delivery Use disposable items for meals. Adhere to environmental and equipment cleaning and disinfection in accordance with NCEC National Clinical Guideline No. 30 IPC – Vol 1 see Section 3.1.3 Routine management of the physical environment, Volume 1, Section 3, Recommendation 13: page 94, Single use or patient dedicated equipment.
11.	**Environmental cleaning/ disinfection**	**Terminal clean/disinfection** • Disposable cleaning cloths, mop cloths, and wipes should be used, and discarded into the clinical waste after each clean. • All cleaning cloths and mop heads must not be reused and must be disposed of as clinical waste. • Mop handle to be thoroughly cleaned, and the cleaning trolley should not be taken into the room.

		• Clean from clean to dirty, patient room first then bathroom. • Change curtains/patient screens. Refer to NCEC National Clinical Guideline No. 30 IPC – Vol 1 from page 69-70 **Disinfection:** Refer to NCEC National Clinical Guideline No. 30 IPC – Vol 1 from page 60 "Use of disinfectants"
12.	**Linen**	**Disposable linen** is the preference for patient clothing and bed linen (where possible). **Dispose of linen in the patient's room**, in appropriate waste bag, not to be carried by H&CW. When handling soiled linen, use Level 1 PPE. Discard all linen, sheets, towels, blankets, patient gown as clinical waste (**Category A**) rather than laundering for reuse. The exception to this is mpox waste which can be treated as Category B. (**Appendix 5**) Avoid any unnecessary manipulation of linen, which should be disposed of safely. For other advice, manage linen in accordance with NCEC National Clinical Guideline No. 30 IPC – Vol 1 section 3.1.8 Handling of linen.
13.	**Waste management**	Waste management should follow best practice and be in accordance with the safe handling of all waste as national and local guidelines, specific legislation and regulations. Waste generated from patient(s) who have been categorised as increased possibility of HCID or have been confirmed with a HCID should be classified as **clinical waste**. This includes any single-use items (for example, PPE, cleaning cloths and wipes) which must be placed in a leakproof bag and discard as clinical waste. The categorisation of waste will vary depending on the HCID. Prior to collection by the contractor, waste must be stored securely, and access restricted to authorised and trained personnel. A waste contractor (appropriately trained and licensed) **must be consulted** to organise the safe transfer/disposal of the waste and must ensure documentation is maintained as part of quality controls and accountability.

		Note: All waste generated during cleaning and disinfection process should be treated as infectious waste. For further advice, refer to Waste management: refer to NCEC National Clinical Guideline No. 30 IPC – Vol 1, section 3.1.7. Advise on the categorisation of waste is available in Appendix 5.
14.	**Patient transfer**	**Adults** (individuals ≥ 16 years old) with confirmed HCIDs (or highly suspicious probable cases) may **be transferred to the NIU**, which is the national referral centre for high risk suspected and confirmed cases of HCID. International transfer of the patient and/or their contacts to Germany may be required (further management will be determined after discussion with the NIU.). The NIU will liaise and consult with key stakeholders to organise the transfer. Transfer of the patient will also depend on patient condition and suitability for transfer in consultation with the NIU. For **paediatric cases**, contact on-site Microbiologist AND Paediatric ID on call in CHI for urgent MDT assessment. If the patient is unstable or there is a delay in transfer, patient will require a **negative pressure room**, combined transmission-based precautions and to follow the advice in table 3 “Immediate actions to be followed”. **Home isolation** may be used for clinically well patients with possible, probable or confirmed cases as determined by the primary clinician. **Patients should be advised to remain in self-isolation pending test result**. Patients and their household contacts should be advised to adhere to Public Health advice on reducing their contacts and preventing infection.

7.0 Referral and Delivery of Specimens to Diagnostic Laboratories

Information regarding laboratory testing requirements may be found in the Guidelines area of the pathogen-specific section for each infectious disease on the HPSC website (here). For Viral Haemorrhagic Fevers, including EVD, MVD, Lassa fever, other arenaviruses and CCHF, a chapter dedicated to laboratory diagnosis can be accessed via the HPSC website, in the VHF Guidance Chapters. For mpox, laboratory guidance can be accessed via the HPSC website here.

7.1 General Considerations Prior to Sampling for Diagnostic Tests

- Consultation with the laboratory is essential prior to sampling. Only specimens essential for immediate patient management and diagnosis should be obtained for investigation. See contact details for the National Virus Reference Laboratory (NVRL) below.
- **Inform the laboratory in advance of high-risk exposure samples, and label as such.**
- Each laboratory should have a risk assessed contingency plan for dealing with potential HCID specimens which includes out-of-hours operational procedures and contact details for key personnel.
- Within the hospital, specimens should be transported and tested according to local risk assessed arrangements for high-risk samples.
- Pneumatic tube systems should not be used to deliver samples from patients considered to be at risk of HCIDs or with confirmed HCIDs to the laboratory.
- Personnel involved in referral of samples should receive appropriate training.
- Laboratory staff dealing with specimens from patients with suspected HCIDs must take, as a minimum, the same personal protective precautions as patient-care staff and must have experience dealing with samples which may have a high viral load.

8.0 Reporting Protocols for Suspected or Confirmed Cases of HCID

8.1 Local Reporting Protocols

If a HCID is suspected, the following steps should be taken in the Acute Healthcare Setting:

1. For adult patients (≥16 years): inform the local ID consultant/clinical microbiologist/IPC team.
2. For paediatric patients (<16 years): discuss situation with local ID consultant /clinical microbiology. Contact Paediatric ID in CHI, to discuss patient management.
3. Arrange for a clinical risk assessment - this should be undertaken by a senior member of the medical team wearing appropriate PPE.
4. Notify the Medical Officer of Health (MOH), contact details are available here. Out of hours (OOH) the Consultant in Public Health Medicine/MOH can be contacted by phoning **Ambulance Control** and requesting to be connected to Public Health on Call.
5. If VHF is NOT suspected, arrange for appropriate testing locally (inform lab in advance of high-risk exposure sample).

8.2 National Reporting Protocols

If the clinical risk assessment finds that a high risk of HCID the following steps should be taken:

1. For adult patients (≥16 years): Notify NIU of high-risk exposure suspect case. The NIU may be contacted at Mater Hospital Switch **01-8032000** (Ask for ID Consultant on call).
2. For paediatric patients (<16 years): Contact the Paediatric ID in CHI at Crumlin via switch **01-4096100.**
3. If a diagnosis of VHF is suspected, a clinical decision should be made in consultation with the NIU /ID specialist regarding the necessity of clinical specimens for routine blood tests, malaria screening, and blood cultures. **Inform the laboratory in advance of high-risk exposure samples, and label as such.** Contact the National Virus Reference Lab at **01-7164401** (or **01-7164050** after hours). Patient care must not be compromised, and essential routine blood tests should not be delayed while awaiting VHF sample results.
4. If patient has vomiting, diarrhoea, haemorrhagic manifestations, multi-organ failure discuss with NIU or Paediatric ID in CHI for consideration of early transfer.

5. If the HCID is confirmed seek specialist advice and discuss transfer: notify the NIU as above, to discuss transfer to the NIU (adult patients) or contact the Paediatric ID in CHI to inform them of the result (paediatric patients).

9.0 Communication

9.1 Communication with the patient

All clinical staff must communicate clearly and sensitively with patients and their relatives. This includes informing them about the precautionary procedures in place and providing regular updates. When conducting the Patient Care Risk Assessment (PCRA), healthcare workers should take account of any language barriers or reduced levels of consciousness. If direct observation of the patient in the single room is not possible ensure that the patient has access to a means of communication (e.g. a mobile phone) and a number that will be answered. The patient is likely to be frightened and should not feel that he/she has been abandoned in the single room.

9.2 Communication within the healthcare setting

Clear communication pathways should be established for notification, escalation and transfer (including handover, work health and safety huddles) of patients with suspected or confirmed HCIDs. All H&CWs should be informed of risks and risk management strategies for HCIDs. Prior to transfer/or care, relevant H&CWs must be informed of patient's suspected HCID status and exposure risks. Refer to local escalation pathways to communicate risk.

9.3 Patient Confidentiality

Maintain patient privacy and confidentiality as appropriate.

The EU General Data Protection Regulation (GDPR) is a European regulation to protect data and requires all data processing to be carried out lawfully, transparently, fairly, accurately and to high standards in other criteria such as purpose limitation and data minimisation. See Article 5 of the GDPR (pages 35-36).

Protecting health is considered a very important activity nationally and internationally, and therefore the GDPR allows essential activities to be carried out. Ireland's MOH law provides the lawful basis for investigation and control of notifiable infectious diseases including HCIDs.

10.0 Telephone Consultation with an Adult Patient with a Possible HCID

If a patient with a possible HCID telephones seeking advice or an appointment, a clinical team member should review their travel history and clinical status over the phone, Figure 3 outlines a suggested approach for an adult patient. Disease-specific algorithms are available at www.hpsc.ie including for VHF and mpox.

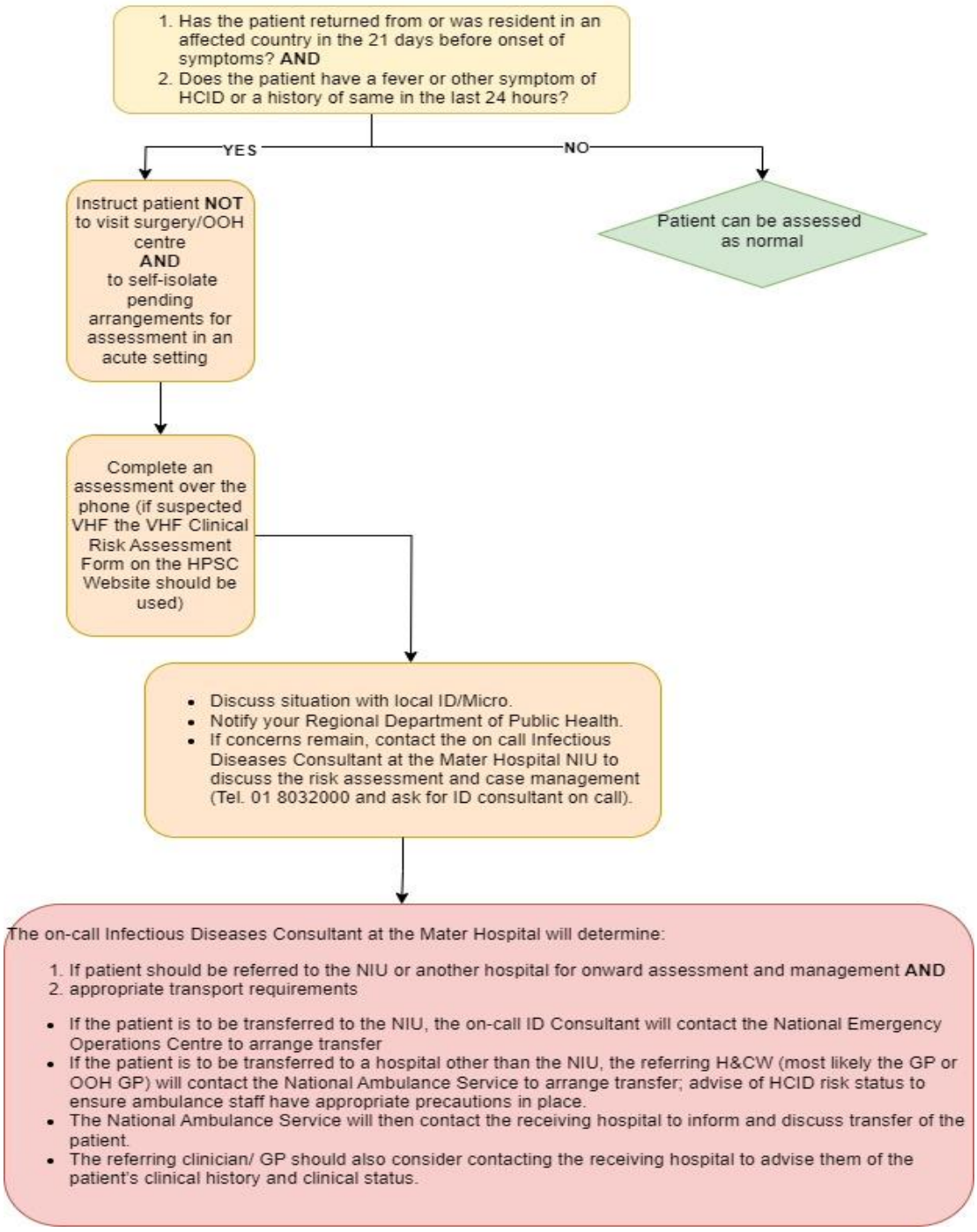

Figure 3 - Algorithm for HCID Telephone Consultation: adult overview. Use disease specific algorithms to guide approach.

11.0 Other Clinical Scenarios

11.1 Deteriorating patient

If a patient with a suspected HCID is unstable or clinically deteriorating the following steps should be considered as part of the overall care plan:

1. Obtain urgent advice from the ID consultant on call or Clinical Microbiology. For paediatric patients contact Paediatric ID in CHI.
2. Perform an updated risk assessment, H&CWs providing care to patient who was previously “dry” who is now “wet” or for whom an aerosol-generating procedure is required will now require Level 2 PPE.
3. If patient has vomiting, diarrhoea, haemorrhagic manifestations, multi-organ failure discuss with NIU or Paediatric ID in CHI for consideration of early transfer.

In managing a deteriorating patient with suspected or confirmed HCID, it is crucial to prioritise the patient’s urgent clinical care needs while also ensuring the health and wellbeing of staff. For comprehensive guidance on managing deteriorating patients, please refer to the HSE website here, noting that it is not specific to HCID.

11.2 Deceased patient

As a precaution, transmission-based precautions that applied during life should generally continue to apply to the care of the deceased when preparing the body for removal from the healthcare setting. For the management of the deceased patient with confirmed or suspected HCID, refer to NCEC National Clinical Guideline No. 30 IPC – Vol 2 7.0 Care of the deceased, Table 38 Application of transmission-based precautions to the deceased in the context of key infections at the time of death (for example Viral haemorrhagic fevers).

12.0 Bibliography

Centers for Disease Control and Prevention (CDC) (2022). Infection Prevention and Control Recommendations for Hospitalized Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD) in U.S. Hospitals | Ebola Virus Disease | Clinicians | Ebola (Ebola Virus Disease) | CDC October 2022. (Accessed 02 December 2022)

Clinical Excellence Commission. (2020). *High Consequence Infectious Diseases: Infection Prevention and Control Principles* (Version 1.0). Available from: https://www.cec.health.nsw.gov.au/__data/assets/pdf_file/0003/940809/High-Consequence-Infectious-Diseases-Infection-Prevention-and-Control-Principles-v1.0.pdf (Accessed 23 August 2024.)

Department of Health (2023) *National Clinical Guideline No. 30 – Infection Prevention and Control (IPC)*. Available at: https://www.gov.ie/IPCclinicalguideline/ (Accessed: 19 August 2024).

European Centre for Disease Prevention and Control (ECDC). (2014) Critical aspects of the safe use of personal protective equipment. Stockholm: ECDC; 2014. Available at: http://www.ecdc.europa.eu/en/publications/Publications/safe-use-of-ppe.pdf Accessed on 02 December 2022

European Centre for Disease Prevention and Control (ECDC). (n.d.). *Data dashboards and databases*. Available at: https://www.ecdc.europa.eu/en/data-dashboards-and-databases (Accessed: 26 August 2024)

European Centre for Disease Prevention and Control (2019) *Health emergency preparedness for imported cases of high-consequence infectious diseases*. Available at: https://www.ecdc.europa.eu/sites/default/files/documents/Health-emergency-preparedness-imported-cases-of-high-consequence-infectious-diseases.pdf (Accessed: 19 August 2024).

European Centre for Disease Prevention and Control (2014) *Safe use of personal protective equipment (PPE)*. Available at: https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/safe-use-of-ppe.pdf (Accessed: 19 August 2024).

European Parliament and Council. (2016). *Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation)*. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=EN (Accessed: 28 August 2024).

Health and Safety Authority. A Guide to Respiratory Protective Equipment 2010. Respiratory Protective Equipment - Health and Safety Authority (hsa.ie) Accessed on 02 December 2022

Health and Safety Authority. Guidelines to the Safety, Health and Welfare at Work (Biological Agents) Regulations 2013. Available at: Safety Health and Welfare at Work (Biological Agents) Regulations 2013 - Health and Safety Authority (hsa.ie) Accessed on 02 December 2022.

Health and Safety Authority (2024) *Legislation*. Available at: https://www.hsa.ie/eng/Legislation/ (Accessed: 19 August 2024).

Healthcare Infection Society (2022) *Designing and building a high-level isolation unit: what have we learned?*. Available at: https://www.his.org.uk/training-events/spring-meetings/spring-meeting-2022/programme/designing-and-building-a-high-level-isolation-unit-what-have-we-learned/ (Accessed: 16 September 2024).

Health Service Executive (HSE). (n.d.). Deteriorating Patient Improvement Programme. [online] Available at: https://www2.healthservice.hse.ie/organisation/qps-improvement/deteriorating-patient-improvement-programme/ (Accessed 11 Sep. 2024)

Health Service Executive (HSE). (2024). *MOH Legislation and the GDPR*. Available at: https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/moh/moh-legislation-and-the-gdpr.html (Accessed: 28 August 2024).

Health Protection Surveillance Centre (2024) *Emergency Management of Injuries (EMI) Guidelines*. Available at: https://www.hpsc.ie/a-z/emi/ (Accessed: 19 August 2024).

Health Protection Surveillance Centre (2022) *Guidance Note H1402 - Packaging and Transport of waste from suspect and confirmed cases of Viral Haemorrhagic Fevers (VHFs)*. Available at: https://www.hpsc.ie/a-z/vectorborne/viralhaemorrhagicfever/guidance/vhfguidanceappendices/vhfwastepackagingandlabels/Guidance%20Note%20H1402%20-%20Waste%20packaging%20for%20Ebola%20Virus.pdf (Accessed: 19 August 2024).

Health Protection Surveillance Centre (2024) *A-Z Health Topics*. Available at: https://www.hpsc.ie/a-z/ (Accessed: 19 August 2024).

Health Protection Surveillance Centre (2024) *Infection Control and HAI Posters*. Available at: https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/posters/ (Accessed: 19 August 2024).

Health Protection Surveillance Centre (2023) *Infection Prevention and Control Precautions for healthcare workers for possible or confirmed monkeypox (Clade II)*. Available at: https://www.hpsc.ie/a-z/zoonotic/monkeypox/guidance/IPC%20for%20HCW%20for%20Possible%20or%20Confirmed%20Monkeypox%20Infection.pdf (Accessed: 11 September 2024)

Health Protection Surveillance Centre (2022) *National Isolation Unit at the Mater Misericordiae Hospital, Dublin*. Available at: https://www.hpsc.ie/a-z/vectorborne/viralhaemorrhagicfever/nationalisolationunitatthematermisericordiaehospitaldublin/ (Accessed: 16 September 2024).

Health Protection Surveillance Centre (2024) *Viral Haemorrhagic Fever Guidance*. Available at: https://www.hpsc.ie/a-z/vectorborne/viralhaemorrhagicfever/guidance/ (Accessed: 19 August 2024)

Health Service Executive (2024) *HCAI Resources*. Available at: https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/resources/general/ (Accessed: 19 August 2024).

National Ambulance Service (2021) *Infection Prevention & Control Policy*. Available at: https://www.nationalambulanceservice.ie/clinical%20care/clinical-directives-advisories/nas-infection-prevention-control-policy-2021-09-29.pdf (Accessed: 19 August 2024).

National Travel Health Network and Centre (NaTHNaC). (n.d.). *Country information*. Available at: https://travelhealthpro.org.uk/countries (Accessed: 26 August 2024).

NCEC (DH) Draft Guidance on Infection Prevention and Control (2022) Available at: **ncec-ipc-guideline-2022-for-consultation.pdf (hse.ie).** Accessed 02 December 2022

NHS England (2024) *Addendum on high consequence infectious disease (HCID) personal protective equipment (PPE)*. Available at: https://www.england.nhs.uk/national-infection-prevention-and-control-manual-nipcm-for-england/addendum-on-hcid-ppe/#hcid (Accessed: 19 August 2024).

NHS England. (2018). *Airborne high consequence infectious diseases service specification: Children*. Available at: https://www.england.nhs.uk/wp-content/uploads/2018/10/Airborne-high-consequence-infectious-diseases-service-specification-children.pdf (Accessed 11 Sep. 2024).

Public Health England and Department of Health and Social Care (2015) *Viral haemorrhagic fever: ACDP algorithm and guidance on management of patients*. Available at: https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients (Accessed: 19 August 2024).

UK Health Security Agency (2023) *High consequence infectious diseases (HCID)*. Available at: https://www.gov.uk/guidance/high-consequence-infectious-diseases-hcid#definition-of-hcid (Accessed: 19 August 2024).

UK Health Security Agency (UKHSA). (2024). *High consequence infectious disease: country specific risk*. Available at: https://www.gov.uk/guidance/high-consequence-infectious-disease-country-specific-risk (Accessed: 28 August 2024).

World Health Organization (WHO). (n.d.). *Disease Outbreak News*. Available at: https://www.who.int/emergencies/disease-outbreak-news (Accessed: 26 August 2024)

World Health Organization (2021) *Five moments for hand hygiene*. Available at: https://www.who.int/publications/m/item/five-moments-for-hand-hygiene (Accessed: 19 August 2024).

World Health Organization. Infection prevention and control guideline for Ebola and Marburg disease. August 2023. Available at: https://www.who.int/publications/i/item/WHO-WPE-CRS-HCR-2023.1 Accessed on 18 January 2024

World Health Organization. Personal Protective Equipment in the Context of Filovirus Disease Outbreak Response. Rapid advice guideline. October 2014. Available at: http://apps.who.int/iris/bitstream/10665/137410/1/WHO_EVD_Guidance_PPE_14.1_eng.pdf? ua=1&ua=1 Accessed on 02 December 2022

13.0 Appendices

Appendix 1 – Breach Protocol

Exposure management

Occupational exposures during the care of patients can occur due to:

• breaches in PPE during use or when removing (doffing)

• accidental contamination of mucous membranes, non-intact skin with blood, tissue or other body substances

• exposure to airborne or droplet respiratory pathogens

• sharps injuries: needle stick/ sharps injuries

Immediate management

A risk assessment of the exposure should be performed - including the type of exposure, type and amount of fluid involved

Skin exposure:

In the event of skin exposure, the H&CW should leave patient zone immediately and do the following:

• if visible blood or body substance present on gloves, remove contamination with Detergent/disinfectant wipes (or dual purpose) taking care not to expose any further skin

• remove gloves in a controlled manner and then wash the exposed area with soap and running water

• inspect area to determine extent of contamination; check if there is any non-intact skin exposed

• remove remaining PPE (follow Appendix 3 HCIDs - Checklist for PPE removal) and perform hand hygiene

• notify line manager and escalate accordingly (IPC/ID/MOH/Occupational Health) immediately for further assessment and management

• report the incident as per local procedures.

Mucous membrane exposure (eyes/nose/mouth)

H&CW to leave patient zone straight away and undertake the following:

• remove the contaminated PPE in a controlled manner to prevent further exposure (put on(don) clean gloves to remove contaminated PPE)

• check for any contamination if present, then remove it

• as soon as possible, spit out any blood or body substance that may have entered the mouth and rinse the mouth with water several times
• irrigate the eye or nose with water or normal saline (do not use any type of disinfectant on mucosal surfaces as part of first aid as this may cause irritation and potential entry portal if mucosa becomes damaged)
• remove remaining PPE (follow Appendix 3 HCIDs - Checklist for PPE removal) and perform hand hygiene
• notify line manager and escalate accordingly (IPC/ID/MOH/Occupational Health) immediately for further assessment and management
• report the incident as per local procedures.

Percutaneous exposure (needlestick/sharps injury)

Where injury has occurred, the following applies:
• remove outer gloves, check inner gloves; if visible blood or body substance, remove contamination with detergent/disinfectant wipes (dual purpose), then remove inner gloves
• perform hand hygiene with soap and running water (do not squeeze affected area)
• apply clean pair of gloves and remove remaining PPE (follow Appendix 3 HCIDs - Checklist for PPE removal) and perform hand hygiene
• notify line manager and escalate accordingly (IPC/ID/MOH/Occupational Health) immediately for further assessment and management
• report the incident as per local procedures.

For further advice refer to National Clinical Guideline No. 30, Volume 1, 3.7.3 Managing exposures to occupational hazards.

Appendix 2 – HCID Checklist Before Entering Room

Name of healthcare worker (H&CW):

Name of trainer observer (buddy):

Date: _____ Time: _____ Location: _____

PREPARATION FOR PUTTING ON PPE (DONNING)		
Trained observer checklist (tick items for completion)	**Steps**	**Action – Check by trained observer (buddy) (read out)**
☐	Step 1	Where possible, allocate a designated zone for putting on (donning) PPE Trained observer (Buddy check)– ensure ALL equipment is available and in the correct size: • surgical scrubs/disposable scrubs (for wet symptoms only) • disposable fluid resistant boots to the knee (for wet symptoms only) • surgical hood (optional based on risk assessment) • inner gloves (different colour if available) • Impervious (fluid resistant) long-sleeved gown (lower than knees) correctly tied and able to provide adequate back cover. • Respirator Mask: FFP2/FFP3 & H&CW fit tested. See Appendix 6 for PPE specifications. • eye protection (Goggles/ Visor), • outer gloves with long cuff – if available, two different colours (sterile gloves may be used not necessarily due to the need for sterility but because they are associated with fit and dexterity) • stool/chair (cleanable) • alcohol-based hand rub (self-dispensing or trained observer to assist) • Detergent/ disinfectant wipes. • Access to a mirror is recommended

☐	Step 2	Ensure that donning occurs in a quiet area (where possible) The environment needs to remain calm – limit activity and discussion to donning only.
☐	Step 3	Confirm that the H&CW is competent and has completed training on has undertaken transmission-based precautions training
☐	Step 4	Confirm that the H&CW is wearing surgical scrubs and impervious, closed-toe boots/shoes (for wet patient only).
☐	Step 5	Confirm skin integrity of H&CW. If H&CW has skin integrity breaks, then advise them not to care for patient. In the event of staffing contingency risk assess any skin breaks, small breaks/areas may be able to be covered by waterproof dressings where complete protection with PPE is also achieved.
☐	Step 6	Ask the H&CW if they need a drink of water or to go to the bathroom.
☐	Step 7	Check the following for the H&CW: • all jewellery has been removed, for example, facial and ear piercings, necklaces, rings, watches, bracelets, religious items and so forth • hair is off the face and collar, and tied in a ponytail or bun if required • H&CWs with facial hair to follow local facility policy (see recommendations for FFP2/3 fit check) Poster resources are available on the "Safe use of FFP2 respirator mask" https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/ppe/FFP2%20Masks%20Poster.final.pdf • no jumpers/jackets/ etc. are on • no wallets, phones, bleeps or pens are in pockets • no lanyards/ID tag are hanging from scrubs. Gather the PPE items required • Check PPE is the correct size
☐	Step 8	Record H&CW's temperature in logbook.

PUTTING ON (DONNING) PPE		
☐	Step 1	For wet patient, put on surgical scrubs and closed-in shoes. Ensure hair is off the face and collar and tied in a ponytail or bun. If wearing own glasses-ensure secure with a head strap.
☐	Step 2 Hand hygiene	H&CW to perform hand hygiene with soap and water or alcohol-based hand rub. Ensure hands are dry.
☐	Step 3	H&CW to put on FFP2/FFP3 respirator.
☐		**Trained observer check:** (fit checking assist) – H&CW to perform fit check, use the "Safe use of FFP2 respirator mask" poster to instruct application and fit check-adjust if any air escapes and recheck
Skip to step 7 if boots and hood, are not needed.		
☐	Step 4 Boots (optional)	For wet patient, H&CW to sit down and put on disposable fluid repellent below-knee boots and tie any straps to prevent trip hazard (tying at the front facilitates easy removal).
☐		**Trained observer check:** boots are secure around ankles and knees and ties are tied.
☐	Step 5 Hood (optional)	H&CW to put on surgical hood with flap/collar. Do not tie it.
☐		**Trained observer check:** ensure surgical hood covers head, neck, and shoulders.
☐	Step 6 Gloves	H&CW to put on inner pair of gloves.
☐	Step 7 Gown	H&CW to put on impervious, long-sleeve gown and tie at the back, ensure long enough to cover the back. If wearing, ensure inner gloves are tucked underneath the cuffs of the gown.
☐		**Trained observer check:** Check gown for any tears or holes and ensure inner gloves are tucked underneath the cuffs of the gown.

☐	Step 8 Eye protection	H&CW to put on eye protection.
☐	Step 9 Gloves	H&CW to put on outer gloves with the longer cuff. Ensure gloves go over the cuffs of the gown and no fabric showing.
☐		**Trained observer check:** Check that gloves are over the cuffs of the gown.
☐	Step 10	Check PPE is secure and comfortable – extend arms, bend at waist, turn and walk up and down & check PPE skin cover is optimal – use the mirror to self-check and trained observer to confirm REMIND THE H&CW PRIOR TO ENTERING THE PATIENT ROOM Instruct the H&CW to use the room telephone if they need any assistance. ▪ Don't adjust or remove PPE in the patient room ▪ H&CW: Don't touch your face whilst wearing PPE ▪ Use ABHR on gloved hands during patient care whilst in the patient room H&CW is ready to enter the room.

Trained observer signature:

_____

Appendix 3 – HCID PPE Checklist for Removal

Name of healthcare worker (H&CW):

Name of trained observer:

Date: _____ Time: _____ Location: _____

PPE REMOVAL (DOFFING)		
Trained observer checklist **(tick items for completion)**	**Step**	**Action – Check by trained observer (read out)** Depends on the location of the trained observer (buddy) and interaction: Where there is a greater risk of contamination the buddy should also be equally protected wearing appropriate PPE (level 1 PPE)
☐	Step 1 Prepare to doff	Where possible a designated zone for removing (doffing) PPE is to be identified. Trained observer to ensure all equipment is ready for removal. Trained observer ensures the area is quiet and free from other staff and distractions. Equipment required for removal: 1. rigid plastic stool or chair that can be cleaned and disinfected near the door 2. clinical waste bin 3. alcohol-based hand rub 4. detergent/disinfectant wipes 5. additional gloves – different in colour compared with inner pair of gloves of H&CW, if available. Ensuring that these items are within one step of the H&CW and ensures that there is no unnecessary movement.
☐	Step 2	Trained observer instructs H&CW that this will be a calm, smooth process and to tell the buddy if they need assistance at any time.
☐	Step 3	**Trained observer check:** ask the H&CW if they inspected their PPE for visible contamination, cuts or tears before leaving the room and remove it with a detergent/disinfectant wipe prior to leaving the room.
☐		Trained observer to inspect the PPE to assess for visible contamination, cuts or tears before starting to remove.

□		If visible contamination present, H&CW to clean first and disinfect with a disinfectant wipe and discard wipe into clinical waste bin. Trained observer to also observe from a distance to inspect for any visible contamination.
□	Step 4	Instruct H&CW to remove the outer gloves: • slip finger underneath outer gloves and carefully remove without touching outside of gloves • discard into designated clinical waste bin in doffing zone.
□	Step 5	Inspect inner glove for any contamination, tear or cuts. Remove any visible contamination and change gloves if needed, followed by hand hygiene. If torn or cut, don another pair of gloves.
□	Step 6	H&CW to remove impervious, long-sleeve gown. • assume that the gown front and sleeves are contaminated • avoid contact with scrubs and hood underneath the long sleeve gown • unfasten ties • pull away gown from neck and shoulder area, touching outside of gown and remove • turn gown inside out while removing, and fold or roll into a bundle touching only the inside of the gown. Discard into clinical waste bin.
□	Step 7	**Trained observer check:** Ensure H&CW inspects gloves prior to removal.
□	Step 8	Check gloves for contamination (if no visible contamination present go to step 9). If visible contamination present, H&CW to clean gloves and disinfect with a disinfectant wipe and discard wipe into clinical waste bin. Remove gloves and perform hand hygiene. Put on another pair of gloves. Go to step 10 if wearing boots.
□	Step 9	Remove gloves by: • grasping 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 gloves off over first glove. Discard gloves into clinical waste bin.

□	Step 10 (Boots if worn)	If worn, perform hand hygiene and don new pair of gloves. H&CW to sit on clean or covered stool/chair to begin removal of below- knee boots. • roll the top of the boots down for two turns (both legs) • carefully untie straps and remove the boot by grasping the heel area and pulling away from body • discard boot into clinical waste bin • place feet directly onto the floor away from the doffing zone.
□	Step 11	Remove gloves and discard into clinical waste bin. Perform hand hygiene.
□	Step 12	Put on another pair of fresh gloves.
□	Step 13	H&CW to remove hood (if worn), respirator and eye protection in one motion. Grasp back of hood, tilt head downwards and pull forward in a downward motion, removing hood, respirator and eye protection together. Place items in clinical waste bin.
□	Step 14	Remove gloves and perform hand hygiene with Alcohol-based hand rub (from an automatic dispenser) or soap and water, including forearms up to elbows.
□	Step 15	Final inspection by both trained observer and H&CW for any contamination. If contamination is identified, the scrubs should be carefully removed and disposed of as clinical waste and the H&CW should shower immediately. Any possible exposure/contamination should be reported to line manager and escalated accordingly.
□	Step 16	If there has been prolonged contact or high-risk patient care, then shower using a neutral soap and change into fresh scrubs. At the end of the shift, all H&CWs must shower with a neutral soap. If not contaminated, discard scrubs into routine linen for processing.

Trained observer signature:

_____

Appendix 4: HCID – VHF preparedness checklist

1.	Identification of potential cases			
		Y/N	**Sign**	**Date**
1.1	Strategies are in place to detect travel-related infections (for example, ED at Triage)	☐ Y ☐ N		
1.2	Process in place to exclude travel related infections which are not deemed HCID (refer to HPSC website for pathogen-specific information. Also refer to Box 2 for country-specific risks for HCIDs.)	☐ Y ☐ N		
1.3	Contact numbers for ID consultant, clinical microbiology and Public Health (including OOH arrangements). Ensure these are readily available.	☐ Y ☐ N		
1.4	Have process to collate a line listing for the identification and management of potential contacts.	☐ Y ☐ N		
1.5	Identify an isolation area in assessment areas (for the ED) with transmission-based precautions door signage, (**Single room** with ensuite **preferably with negative pressure** ventilation (where available). Isolation room should ideally have **an anteroom for putting on and taking off PPE**. If an anteroom is not available, identify a clearly marked donning and doffing zone outside the room.)	☐ Y ☐ N		
1.6	Local escalation plans available with contact numbers if a suspected HCID patient presents to the healthcare facility	☐ Y ☐ N		
1.7	Escalation plan includes an OOH process, environmental cleaning, occupational exposure management processes and local work health safety considerations.	☐ Y ☐ N		
2.	**Personal protective equipment (PPE)**			
2.1	HCID PPE kits for HCID are available in the emergency department and checked regularly as per local policy.	☐ Y ☐ N		
2.2	Training for H&CWs: Prioritise for Emergency department training on PCRA, PPE in the first instance. Competency assessment (as per local discretion) for the use of PPE for HCID, which is documented	☐ Y ☐ N		
2.3	Identify suitable areas for putting on PPE (Donning) and removing PPE (doffing)	☐ Y ☐ N		
2.4	Trained observers for putting on and removing PPE (Donning and doffing) checklists-ensure these are readily available.	☐ Y ☐ N		
2.5	Consider conducting training and simulation exercises for managing HCID patients as part of major emergency planning Document these have occurred.	☐ Y ☐ N		
2.6	Dedicated patient-use equipment is identified (preferably disposable); if not, identify items that can be cleaned and disinfected.	☐ Y ☐ N		

Appendix 5: Waste categorisation

HCID clinical waste (that is, medical waste derived from a patient with HCID) is usually classified as Category A waste under the international standard UN 2814 for infectious substance, affecting humans and for the purposes of transporting by road or rail (as per UN legislation).

PPE and items used during assessment of a suspected case may quarantined in Category A-compliant conditions pending the results of HCID diagnostic testing. If results are negative, quarantined waste may be disposed of as Category B healthcare risk waste and healthcare non risk waste (as appropriate).

If the HCID identifies that waste should be disposed of as category A waste the following is recommended:

- Required packaging components (see below)
- WIVA 60L rigid clinical waste bins with solid lids
- HSE Stock item Clinical waste bags UN approved bulk clinical waste bags
- 6L bulksorb absorbent sheets (or gelling agent)
- Traceability cable ties
- Sharps bins of an appropriate size
- UN 3549 Category A Infectious waste labels

Required packaging of Category A Waste

Category A waste (including VHF clinical waste) must be packaged in a triple containment system, for example:

- leakproof primary bag
- rigid outer receptacle
- leakproof secondary bag.

Keep the leakproof primary bag and rigid outer receptacle inside the patient's room or zone, and then place the receptacle inside a second clinical waste bag kept outside the patient room.

Procedure for Assembly of Category A Waste Packaging

1.0 Required packaging components

WIVA 60L rigid clinical waste bins with solid lids

HSE Stock item Clinical waste bags (Bunzel) or UN approved bulk clinical waste bags

6L bulksorb absorbent sheets (or gelling agent)

Traceability cable ties

Sharps bins of an appropriate size

UN 3549 Category A Infectious waste labels

2.0 Assembly Procedure

The following tables outline the procedures for assembly of packaging:

Table 1 Soft / liquid waste packaging assembly

Table 2 Sharps waste packaging assembly

Table 2A Sharps waste packaging alternative assembly (Suitable for smaller sharps bins)

Pg 1 V0.2 – Procedure for Assembly of Category A Waste Packaging (Monkeypox Virus)

Soft, Liquid Waste Packaging Assembly

Table 1: Soft / liquid waste packaging assembly

Step 1 Take a 60L WIVA rigid bin and apply a UN 3549 CATEGORY A INFECTIOUS WASTE label over the existing UN3291 label Note: If pre-printed labels are not available the attached template may be used to print the label using a colour printer (see Appendix 1 for template)	
Step 2 Line the 60L WIVA rigid bin with one clinical waste bag. Repeat the process with a second clinical waste bag and fold both bags back around the bin	
Step 3 Insert two 6L absorption sheets in the inner packaging of the 60L WIVA rigid bin Note: The requirement is to ensure that there is sufficient absorbent for any liquid present – gelling agent may be used as an alternative to satisfy this requirement	
Step 4 The bin is now ready for the disposal of soft clinical waste that may contain small amounts of liquid	

Step 5 When the bin is 2/3 full with waste close the inner bag according to the manufacturer's instructions (cable tie or swan neck closure method)	
Step 6 Close the outer bag according to the manufacturer's instructions (cable tie or swan neck closure method)	
Step 7 Close the 60L WIVA rigid bin with a yellow lid Ensure that the clips on the lid match up prior to closure	
Step 8 When closed, decontaminate external surface of the 60L WIVA rigid bin with 10,000ppm hypochlorite solution in the dirty area Apply a traceability cable tie Remove the bins to a secure storage room Inform the waste contractor that you have UN 3549 Category A infectious waste for collection so that special collection arrangements can be put in place	

Sharps Waste Packaging Assembly

Step 1 Take a 60L WIVA rigid bin and apply a UN 3549 CATEGORY A INFECTIOUS WASTE label over the existing UN3291 label Note: If pre-printed labels are not available the attached template may be used to print the label using a colour printer	
Step 2 Line the 60L WIVA rigid bin with one clinical waste bag. Repeat the process with a second clinical waste bag and fold both bags back around the bin	
Step 3 Insert two 6L absorption sheets in the inner packaging of the 60L WIVA rigid bin Note: The requirement is to ensure that there is sufficient absorbent for any liquid present – gelling agent may be used as an alternative to satisfy this requirement	

Step 4 For sharps waste place the waste in the sharps bin. Ensure the sharps bin selected will fit comfortably into a 60L WIVA rigid bin Maintain sharps bins in the temporary closure position when not in use When ¾ full or up to the manufacturer line ensure sharps container is closed correctly as per the manufacturer's instructions Sign and date upon closure	
Step 5 Place the sharps bin into the 60L WIVA rigid bin	
Step 6 Close the inner bag according to the manufacturer's instructions (cable tie or swan neck closure method)	
Step 7 Close the outer bag according to the manufacturer's instructions (cable tie or swan neck closure method)	

Step 8 Close the 60L WIVA rigid bin with a yellow lid Ensure that the clips on the lid match up prior to closure	
Step 9 When closed, decontaminate external surface of the 60L WIVA rigid bin with 10,000ppm hypochlorite solution in the dirty area Apply a traceability cable tie Remove the bins to a secure storage room Inform the waste contractor that you have UN 3549 Category A infectious waste for collection so that special collection arrangements can be put in place	

Sharps Waste Packaging Alternative Assembly (suitable for smaller sharps bins)

Step 1 For sharps waste place the waste in the sharps bin Ensure the sharps bin selected will fit comfortably into a 60L WIVA rigid bin Maintain sharps bins in the temporary closure position when not in use When ¾ full or up to the manufacturer line ensure sharps container is closed correctly as per the manufacturer's instructions Sign and date upon closure	
Step 2 Place the sharps bin in a clinical waste bag with a 6L absorbent pad and close the bag according to the manufacturer's instructions (cable tie or swan neck closure method)	
Step 3 Place the bagged sharps bin on top of the sealed double bagged soft waste in the WIVA bin from Table 1 Step 6 (When the soft waste bags are closed there is usually adequate space to accommodate a small sharps bin on top of it)	 

Step 4 Close the 60L WIVA rigid bin with a yellow lid Ensure that the clips on the lid match up prior to closure	
Step 5 When closed, decontaminate external surface of the 60L WIVA rigid bin with 10,000ppm hypochlorite solution in the dirty area Apply a traceability cable tie Remove the bins to a secure storage room Inform the waste contractor that you have UN 3549 Category A infectious waste for collection so that special collection arrangements can be put in place	

Template Label

Classification of Clinical Waste from Confirmed or Suspected Cases of Clade I Mpox

This narrative aims to clarify the handling of samples and clinical waste from individuals suspected or confirmed to have Clade I MPXV. The proposal to the HCID Clinical Advisory Group, that such materials can be managed as healthcare (clinical) Category B waste, was accepted. This is consistent with international guidance from the CDC[1]and UKHSA[2]. Staff engaged in waste management should be provided with and wear appropriate PPE (this is PPE normally worn for waste collection and transport). As always, a point of care risk assessment regarding PPE should be undertaken, in the normal course of duties. Waste should be treated as infectious clinical waste Category B and handled in accordance with healthcare facility policies and local regulations. In accordance with HSE/DoHC Healthcare Risk Waste Management Segregation Packaging and Storage Guidelines for Healthcare Risk Waste, the waste should be assigned to UN3291, clinical waste, un-specified, not otherwise specified (n.o.s) and transported in yellow wheeled bins for treatment in Ireland by steam sterilisation.[3,4] The waste can be packaged as normal and transported and treated as per normal processes at the Stericycle facility. Relevant staff should be trained in waste management and disposal procedures.

However, if the waste contains laboratory cultures of Clade I mpox it may require more stringent handling and disposal methods (noting that as mentioned earlier culture for MPXV is not currently performed in Ireland).

[1] Centres for Disease Control and Prevention. Infection Control: Mpox [Internet]. Atlanta: CDC; 2022 [cited 2024 Aug 29]. Available from: https://www.cdc.gov/poxvirus/mpox/clinicians/infection-control-healthcare.html

[2] UK Health Security Agency. Mpox classification and appropriate IPC pathways [Internet]. London: UKHSA; 2023 [cited 2024 Aug 29]. Available from: https://assets.publishing.service.gov.uk/media/642aceb57de82b00123134a4/mpox-classification-and-appropriate-IPC-pathways.pdf

[3] Health Service Executive. Healthcare Risk Waste Management: Segregation, Packaging and Storage Guidelines for Healthcare Risk Waste. 4th ed. Dublin: HSE; 2010.

[4] HPSC Infection Prevention and Control Precautions for Healthcare Workers for Possible or Confirmed Mpox Infection. Available from: https://www.hpsc.ie/a-z/zoonotic/monkeypox/guidance/IPC%20for%20HCW%20for%20Possible%20or%20Confirmed%20Monkeypox%20Infection.pdf

Appendix 6 – PPE specifications

PPE Type	Description	Product specifications
Mask	Disposable Single use Fluid resistant (Type IIR) 120 mm Hg Latex free Good breathability Easy to differentiate between internal and external surface Splash resistance pressure (kPa) ≥16,0 Ear Loops or tie strings or double headstrap elasticated	CE Marked Quality compliant with standards: Medical Device 2017/745 class I - non-sterile EN 14683:2019 Type IIR
FFP3 respirator	High filtration efficiency-filter	EU standard Personal Protective Equipment Directive EU 2016/425, category lll Quality compliant with: EN 149:2001 + A1:2009 (to filter efficiency, splash resistance EN14683:2019 (Splash Resistance)
Hood	Disposable Single use Latex free Soft and breathable Covers neck and shoulders reaching upper part of gown/coverall Facial opening constructed without elastic (ideally) Different sizes preferable Preferably fluid resistant Preferably sealed/protected seams CE Marked	EU standard Personal Protective Equipment Directive EU 2016/425 category lll Quality compliant, for example: • tested for resistance to blood and body fluid penetration: meets or exceeds ISO 16603 class 3 exposure pressure OR • tested for resistance to blood borne pathogen penetration: meets or exceeds ISO 16604 class 2 exposure pressure OR • Option 3: Compliant with EN

		14126 highest performance test (EN Class) ISO 16603 - Resistance to penetration by blood/fluids under pressure • ISO16604 - Resistance to penetration by blood borne pathogens • ISO22610 - Resistance to wet bacterial penetration (mechanical contact) • ISO/DIS 22611 - Resistance to biologically contaminated aerosols • ISO 22612 - Resistance to dry microbial penetration
Visor	Disposable Single use Latex free Made of clear plastic Provides good visibility to wearer and patient Minimise glare Fog resistant Adjustable straps/harness to facilitate good fit. Fit snuggly against the forehead with integral foam protection strip Does not require assembly by the user For level 2 PPE, complete coverage of sides and length of the face preferable and if this can be achieved, then goggles are not required	CE Marked Quality compliant with standards: Personal Protective Equipment (PPE) Category II Face shield visor with chin guard to conform to EN 166:2002 Personal Eye Protection
Gown	Long-sleeved gown (suitable for both level 1 & level 2 PPE) Disposable Single use Latex free Fluid resistant	CE Marked Quality compliant with this standard: Tested for resistance to blood-borne pathogen penetration

	Provides full impervious cover (360 degrees) Cuffs (preferably waterproof) Different sizes available Different lengths available – chosen length should reach to wearer's mid calf and cover top of knee high rubber boots Light colours preferable to detect possible contamination Fasteners/ties at neck and waist Preferably secured with Velcro at neck for easy doffing Antistatic Low linting Welded seams Made of non- woven material Must wrap completely around the body; the wearer's back must not be left exposed/ uncovered	AAMI PB70 Level 4 performance or Equivalent
Apron	Disposable Single use Latex free Fluid resistant Made of polyester with PVC coating, or other waterproof material Straight with bib Halter Neckline Pull over head, but not smock style Waist ties which should be long enough to fit an XL person Minimum basic weight: 250g/m2 or 60 microns +/- 10% Covering size: approximately 70-90cm width x 120-150cm height, or standard adult size Neck strap allows for tear off with waist ties	Personal Protective Equipment Directive EU 2016/425 Category 1 EN13432:2000 Packaging standards
Inner gloves Outer gloves (extended cuff)	Nitrile Non-sterile Single use Latex free Nitrile Non-sterile Single use Latex free Disposable Extended cuff Beaded cuff	**Inner:** EU standard Medical Device Directive 2017/745 Class 1, EN 455 - EN 455-1:2000; EN 455-2:2015; EN 455-3:2015; EN 455-4:2009 **Outer:** CE Marked EU standard Medical Device Directive 2017/745

	Ambidextrous Powder free Intermediate length (approximately 16 inches) Different sizes – Small, medium, large, extra-large Lighter colour to differentiate from inner gloves in level 2 PPE Textured fingertips	Class 1, EN455 455 - EN 455-1:2000; EN 455-2:2015; EN 455-3:2015; EN 455-4:2009 EU standard Personal Protective Equipment ((EU) 2016/425) Directive Category 111 EN 374 - EN ISO 374-1:2016+A1:2018; EN 374-2:2014; EN374-4:2013; EN ISO 374-5:2016
Boots	Single use for level 2 PPE half boot/ full boot	