Prince Edward Island
Health and Wellness
CANADA

Prince Edward Island Guidelines for the Management and Control of Mpox

May 2024

Department of Health and Wellness
Chief Public Health Office

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Mpox is an emerging infectious disease in Canada. As the investigation evolves, it is anticipated that guidance will adjust. This is an evergreen document that will be updated to be aligned with current recommendations and evidence.

Case Definition (1)

Confirmed case

A person who is laboratory confirmed for Mpox virus (MPXV) by detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and/or sequencing.

Probable case

A person of any age who meets the suspect case definition

AND

Has one or more of the following:

1. Has an epidemiological link to a probable or confirmed mpox (monkeypox) case in the 21 days before symptom onset

2. Has an epidemiological link to a location/event where transmission of mpox is suspected or known to have occurred in the 21 days before symptom onset

An epidemiological link can be:

- Face-to-face exposure, including health workers without appropriate personal protective equipment (PPE)
- Direct physical contact, including sexual contact; or contact with contaminated materials such as clothing or bedding

Suspect case

A person of any age who presents with one or more of the following:

1. An unexplained[1] acute skin rash or lesion(s)[2] AND has at least one of the following signs or symptoms
    - Headache
    - Acute onset of fever (>38.5°C),
    - Lymphadenopathy (swollen lymph nodes)
    - Myalgia (muscle and body aches)
    - Back pain
    - Prostration/asthenia (profound weakness)
    - Fatigue
    - Pharyngitis (sore throat)

[1] Common infectious causes of acute rash or lesion(s) can include Varicella zoster, herpes zoster, measles, herpes simplex, syphilis, chancroid, lymphogranuloma venereum, hand-foot-and-mouth disease

[2] Mpox illness includes a rash or lesion(s) that can affect the mucous membranes in the oropharynx and anogenital area. The rash or lesion(s) can also affect the face, trunk, limbs, and palms of hands and soles of the feet. The rash or lesion(s) can last for 2 to 4 weeks and may appear as singular or multiple macules, pustules, vesicles, crusted lesions or ulcers. Lesions in varying stages can be present simultaneously. Anorectal lesions can manifest as anorectal inflammation (proctitis), pain and/or bleeding. It is not necessary to obtain negative laboratory results for listed infectious causes of rash or lesion(s) in order to classify a case as suspected.

- Proctitis (rectal inflammation/pain)

2. An unexplained acute genital, perianal, anorectal and/or perioral, oral, or oropharyngeal rash or lesion(s)

Reporting Requirements (2) (3)

1. **Laboratories**
   The Provincial Laboratory shall, in accordance with the Prince Edward Island (PEI)*Public Health Act*(2), report all positive molecular tests and all serological evidence of infection by phone, and fax, or electronic transfer, as soon as the result is known, to the Chief Public Health Officer (CPHO) or designate as required by the PEI Reporting of Notifiable Diseases, Conditions, and Events Regulations(3).

2. **Health Practitioners**
   Health practitioners shall, in accordance with the PEI Notifiable Diseases and Conditions and Communicable Diseases Regulations of the (PEI) *Public Health Act* (2), report all probable, suspect and confirmed cases by phone, fax or electronic transfer, as soon as the result is known, to the CPHO (or designate).

3. **National Notification**
   The CPHO will notify the Public Health Agency of Canada (24-hour emergency line 1-800-545-7661) confirmed, probable and suspect cases.

Etiology (4) (5)

Mpox virus belongs to the *Orthopoxvirus* genus in the family *Poxviridae*. The *Orthopoxvirus* genus also includes variola virus (which causes smallpox), vaccinia virus (used in the smallpox vaccine), and cowpox virus.

Clinical Presentation (4) (5)

Mpox illness is often mild and self-limiting, with symptoms resolving within two to four weeks. Although rare, severe cases and death can occur. Mpox presents with either systemic symptoms, skin or mucosal lesions, or both. Systemic symptoms typically occur 0 to 5 days before the appearance of lesions. However, they may also occur during or after the onset of skin lesions

Signs and symptoms of mpox may include:

- Skin or mucosal lesions (often painful)
- fever
- chills
- lymphadenopathy (localized or generalized)
- sore throat
- rectal symptoms (for example, rectal pain)
- fatigue
- headache
- musculoskeletal manifestations such as myalgia, arthralgia and back pain

- gastrointestinal symptoms (for example, vomiting, diarrhea)

Skin lesions

Lesions generally (but not always) appear 1 to 3 days after the onset of fever and last for 2 to 4 weeks. Mpox lesions can be painful and may become itchy during the healing phase. Lesions can be located anywhere on the body, including the:

- mouth and pharynx
- genitals
- anal and perianal area
- hands (including the palms)
- feet (including the soles)

Lesions progress through the following stages before falling off:

- Macules (flat lesions)
- Papules (raised lesions)
- Vesicles
- Pustules
- Ulcers (eventually scab)

Mpox lesions in the same body area tend to evolve at the same time (synchronously). However, individuals may have an atypical or asynchronous rash.

Mpox complications

Severe cases can occur but are rarely fatal. Notably, mpox infection during pregnancy may increase risk of maternal and fetal morbidity and mortality. Young children and immunocompromised individuals are also more likely to experience severe disease.

Young children and immunocompromised individuals might be at increased risk of complications, which may include:

- proctitis
- pharyngitis
- bacterial superinfection
- corneal infection (may lead to vision loss)
- sepsis
- pneumonia
- myocarditis
- encephalitis
- death

Co-infections

Mpox may present with concurrent sexually transmissible and blood-borne infections (STBBIs). Healthcare providers should be vigilant and offer testing to mpox cases to rule out STBBIs such as syphilis, gonorrhea, chlamydia, herpes simplex and HIV.

Diagnosis

Diagnosis of mpox is made on the basis of clinical presentation, exposure history, and laboratory testing (see Appendix A: Specimen Collection).

To confirm the diagnosis of a monkeypox virus infection, one or more of the following diagnostic markers must be positive:

- presence of monkeypox virus DNA by PCR
- isolation of monkeypox virus from viral culture

Currently, serology is not being used as a diagnostic modality.

Key Investigation

- Obtain a history of illness, including date of onset, signs and symptoms.
- Facilitate collection of appropriate specimens (see Appendix A).

Epidemiology (4)

1. Reservoir

The natural reservoir is unknown. African rodents and non-human primates (like monkeys) may harbor the virus and infect people.

2. Transmission

Transmission of MPXV occurs when a person comes into contact with the virus from an animal, human, or materials contaminated with the virus. The virus enters the body through broken skin (even if not visible), respiratory tract, or the mucous membranes (eyes, nose, or mouth).

Transmission occurs through direct contact with skin lesions or scabs, body fluids (such as blood, saliva and semen) or mucosal surfaces (such as eyes, mouth, throat, genitalia and anorectal area)

For example:

- contact from providing care or sexual contact
- through respiratory transmission such as contact with infected droplets generated by talking, breathing, coughing, and sneezing.

An infected pregnant person can also transmit virus to the fetus.

Fomite transmission occurs through direct, unprotected contact with:

- surfaces,
- materials (for example, clothing or linens and towels),

- objects (for example, razors, utensils, needles, sex toys, toothbrushes) that have been in contact with a person or animal with mpox.

3. Incubation Period

The incubation period (time from infection to symptoms) for mpox is usually 7−10 days but can range from 3−21 days.

4. Period of Communicability

Up to 4 days before the onset of symptoms and until the scabs have healed.

5. Host Susceptibility

The entire population is susceptible to Mpox.

Occurrence (5)

1. General

Mpox was first discovered in 1958 when two outbreaks of a pox-like disease occurred in colonies of monkeys kept for research, hence the name 'Monkeypox.' Which is now referred to as Mpox. The first human case of Mpox was recorded in 1970 in the Democratic Republic of the Congo (DRC) during a period of intensified effort to eliminate smallpox. Since then, Mpox has been reported in people in several other central and western African countries: Cameroon, Central African Republic, Cote d'Ivoire, Democratic Republic of the Congo, Gabon, Liberia, Nigeria, Republic of the Congo, and Sierra Leone. The majority of infections are in Democratic Republic of the Congo. Confirmed and probable Mpox cases have now been reported in many countries outside Africa.

2. Canada (4)

On May 19, 2022 the Public Health Agency of Canada (PHAC) confirmed the first 2 cases of Mpox in Canada. As of March 20, 2024, there have been 1501 confirmed cases and 77 probable cases of Mpox infection reported in Canada. There were 32 cases reported in Canada between January 1 to March 18, 2024, for a cumulative incidence rate of 0.08 per 100,000 population.

3. Prince Edward Island

No lab-confirmed cases have been reported in PEI.

Control

IMVAMUNE® is a licensed third generation smallpox vaccine indicated for immunization against smallpox, mpox and related Orthopoxvirus infection and disease in adults 18 years of age and older determined to be at high risk for exposure.

- The primary vaccination schedule consists of two doses of 0.5 mL administered 28 days (4 weeks) apart by the subcutaneous route.
- Those who have started a primary series with Imvamune®, in whom more than 28 days have passed without receipt of the second dose, should receive the second dose regardless of time since the first dose.

- Individuals previously vaccinated against smallpox (e.g., previous generation live-replicating vaccine) and are recommended to receive Imvamune® should also receive a 2-dose series with a minimum interval of 28 days.
- Imvamune® vaccination can be given concurrently (i.e., same day) or at any time before or after other live or non-live vaccines.
- Each vial is for single use only and should not be used for more than one individual. The entire contents of the vial should be injected.

Pre-exposure vaccination

Immunization using the Imvamune® vaccine should be offered to individuals with highest risk of mpox infection. The following individuals/groups should be considered for vaccination with Imvamune:

1. Men who have sex with men (MSM*[i]) who meet at least one of the following criteria:
    - Have more than one partner
    - Are in a relationship where at least one of the partners has other sexual partners
    - Having had a confirmed sexually transmitted infection acquired in the last year
    - Engage in sexual contact in sex-on-premises venues
2. Sexual partners of individuals who meet the above criteria
3. Individuals who self-identify as sex workers regardless of self- identified sex/gender
4. Staff or volunteers in sex-on-premises venues where workers may have contact with fomites potentially contaminated with mpox.
5. Those who engage in sex tourism (regardless of gender, sex assigned at birth, or sexual orientation).
6. Individuals who anticipate experiencing any of the above scenarios

*MSM: Man or Two-Spirit identifying individual who has sex with another person who identifies as a man, including but not limited to individuals who self-identify as trans-gender, cis-gender, Two-Spirit, gender-queer, intersex, and non-binary.

Post-exposure vaccination

Post-exposure vaccination should be administered as soon as possible (ideally within 4 days) after an identified exposure to prevent or attenuate infection. Immunization can be administered up to 14 days post-exposure as it may still theoretically attenuate disease if it occurs towards the end of the range of incubation period. After 28 days, a second dose should be offered if MPVX infection did not develop, regardless of ongoing exposure status.

- Imvamune immunization should not be offered to individuals who are symptomatic and who meet the definition of suspect, probable or confirmed case.
- Individuals with a prior documented history of monkeypox infection do not need to be vaccinated with Imvamune.
- Off-label use in pediatric populations is recommended for children meeting the criteria for post-exposure vaccination and may be offered at their clinician's discretion.

Vaccinia immunoglobulin (VIG)

Vaccinia immunoglobulin intravenous is a solution of gamma globulin from the serum of individuals recently immunized with smallpox vaccine. It is indicated to treat severe smallpox vaccine-associated adverse events: eczema vaccinatum, progressive vaccinia, severe or recurrent generalized vaccinia, and extensive lesions resulting from accidental implantation (transfer of vaccinia virus from the primary vaccination site to other parts of the body). VIG is ineffective in the treatment of post-vaccinial encephalitis and has no role in the treatment of smallpox. **The use of Vaccinia Immunoglobulin (VIG) for the treatment of mpox is not recommended.**

Treatment

Mpox treatment is mainly supportive, illness is often mild and self-limiting, with symptoms usually resolving within a few weeks. Although rare, severe cases and death can occur. There are no well-established treatments for mpox, and there are very limited data available on the clinical effectiveness of specific treatments for mpox infection in humans. Consult an infectious disease physician to discuss therapeutic options for suspected or confirmed cases.

TPOXX is an oral antiviral agent that is indicated for the treatment of human smallpox disease in adults and pediatric patients weighing at least 13 kg. It does not currently have an approved Health Canada indication for mpox or other Orthopoxviruses. However, recommendations for its off-label use can be found at: CADTH Health Technology Review on Tecovirimat (Tpoxx): Update (PDF).
Tecovirimat inhibits the production of extracellular viral forms, which are responsible for the systemic spread of infection, inhibiting virus-induced cytopathic effects.

Treatment with oral tecovirimat (TPOXXTM) can be considered following appropriate consultation in the following patients with confirmed mpox infection:

- Individuals (adults and children irrespective of age or smallpox vaccine status) with severe disease defined as either:
    - Requiring hospitalization or hospital-level care for mpox (e.g., due to severe, extensive and widespread lesions) OR
    - Requiring hospitalization or hospital-level care for complications directly related to mpox (e.g., encephalitis, sepsis, pneumonia), OR
    - Significantly interfering with normal physiological body function (e.g., oral food intake, hydration, pain that is difficult to control or severe pain with bowel movements or urination)

Many patients will present with genital, anal and/or oral lesions, as well as conjunctivitis. The location of lesions itself is not an indication for treatment. Treatment decisions should be based on the severity of the presentation.

OR

Individuals who may be at high-risk of developing severe disease due to severe immunocompromise such as:

- human immunodeficiency virus with a CD4 count < 200 cells/mm3, or a diagnosis of acquired immune deficiency syndrome for adults or a diagnosis of HIV for children
- current treatment for a hematological malignancy such as leukemia or lymphoma
- bone marrow/HSCT transplantation in the past 2 years
- generalized malignancy (e.g., solid tumor or metastatic cancer)
- solid organ transplantation
- therapy with severely immunosuppressing agents (e.g., alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, high-dose corticosteroids, treatment for graft-versus-host disease or receiving immunosuppressive therapy for an autoimmune disease with immunodeficiency as a clinical component)
- Neonates and infants < 1-year-old
- Children aged 1-17 years with immunocompromising conditions (e.g., HIV, cancer, currently taking immunosuppressive therapy)
- Pregnant persons

Clinical judgement must be used when offering tecovirimat to non-severely ill patients who have been vaccinated with the smallpox vaccine (Vaccinia; Imvamune). Such patients are less likely to develop severe disease; however, the impact of smallpox vaccination in high-risk individuals infected with the recent strain of mpox has not been well characterized. In addition, vaccine timing (recent vs. decades ago) and immune status (during illness and at the time of vaccination) may impact vaccine response and must be strongly considered.

The **recommended tecovirimat dosing** is 600mg PO BID for adults weighing 40-124kg and 600mg PO TID for adults weighing 125kg or more.
The **recommended duration of initial treatment is 7 days**, with reassessment for the possibility of continued therapy for a total of 14 days. Treatment may be stopped after 7 days in those who are not severely ill, who are improving clinically and/or at the clinician's judgement. Treatment should be extended to 14 days in pregnant patients, those who remain hospitalized, those who are not experiencing improvement/experiencing progression, severely immunocompromised individuals exhibiting new lesions while on treatment, and/or at the clinician's judgement.

Pediatric dosing is weight-based: 13 to < 25kg: 200mg PO BID; 25 to < 40kg: 400mg PO BID; 40kg and over: refer to adult dosing. Tecovirimat capsules may be opened, mixed with food, or dissolved in liquid and given via feeding tubes.

Contact Tracing

The purpose of contact tracing is to ensure contacts are aware of:
- their potential exposure,
- expectations of monitoring for any signs and symptoms,

    - risk mitigation measures to practice,
    - and what to do if they develop MPXV symptoms (i.e., immediate isolation, advising PHAs)
- If eligible, provide information about post-exposure prophylaxis and referral to their health care provider, to prevent the onset of disease and stop further transmission
- Identify any symptomatic contacts as early as possible
- Facilitate prompt clinical assessment by a health care provider, laboratory diagnostic testing and treatment if signs or symptoms develop.

Management of a Case (4)

For individuals in whom hospitalization is not clinically indicated, self-isolation at home (or in the community) is the mainstay of public health case management (Appendix B). Case isolation (or self-isolation at home / in the community) is indicated until the end of the period of communicability for a mpox case (i.e., until lesion scabs have fallen off, and the wounds are epithelialized and have a light pink/shiny pearl appearance). Ending of the self-isolation period should be assessed on an individual case basis and in consultation with Public Health.

Public Health Nursing will actively monitor the confirmed cases (e.g., regular phone calls/communication).

Home Self-Isolation

For individuals self-isolating at home, counselling should be provided on how to reduce the risk of transmission to other household members or caregivers.

- Stay in a separate room/area away from other household members if possible and using a separate bathroom if available/feasible.
- Isolate in a separate room/area should be prioritized for persons with extensive lesions that cannot easily be covered, draining/weeping lesions, or respiratory symptoms.
- Avoid touching other people directly, even if they are fully vaccinated against mpox.
- Avoid all contact with those at higher risk of severe mpox illness including immunosuppressed people, pregnant women, and children under age 12 years.
- Avoid leaving the home unless necessary (e.g., to seek essential medical care).
- Avoid contact with animals, including household pets. Cases can transmit mpox to animals.
- Avoid non-essential household visitors.
- Do not share any belongings (bedding, clothing, towels etc) that may be contaminated.
- If confirmed to have mpox or awaiting test results wear a mask in the presence of others (medical mask preferred), especially if respiratory symptoms such as a cough or sore throat are present.
- When interaction with others is unavoidable cover all lesions with clothing or bandages.

Criteria that will be used to determine discontinuation of isolation measures include:

- No new lesions have formed within the last 48 hours

- Lesions scabs have fallen off, and the wounds are epithelialized and have a light pink/shiny pearl appearance AND
    - No fever for 24 hours

Advice for care providers and household members

- Designate one person, if possible, to care for the person who is self-isolating (this person should ideally not be immunocompromised or pregnant).
- Caregivers and household members should wear a medical mask when entering the case's isolation space (e.g., to deliver food, change linens, etc.).
- Care providers should wear a medical mask and disposable gloves for direct contact with lesions. These should be disposed of after single-use.
- Care providers should perform hand hygiene regularly, including after touching skin lesions or lesion material, before putting on and after removing gloves, or after handling clothing, linens, or environmental surfaces that may have come into contact with fluid from lesions.
- Mpox is classified under Transport Canada regulations as a Category A Infectious Substance and as such requires special handling and packaging.
- Safe disposal of contaminated waste will be under the direction of the CPHO.

Management of Contacts

Prince Edward Island Public Health Nursing (PHN) or First Nations Health (Abegweit, Lennox Island) will obtain the names of exposed contacts during the initial interview with the case and create a list of those who would be susceptible to infection.

As per current understanding, the incubation period for mpox is 3 to 21 days.

Initially it was thought that the period of infectiousness started at symptom onset. Recent evidence suggests that some cases may be contagious **up to 4 days before the onset of symptoms**

Contact management recommendations are based on exposure risk level (Appendix C).

All contacts should be counselled regarding the signs and symptoms and the need to report to their health care provider should they occur. Symptoms include:

- Fever ≥100.4°F (38°C)
- Chills
- New lymphadenopathy (periauricular, axillary, cervical, or inguinal)
- New skin rash

**Fever and rash occur in nearly all people infected with mpox virus.*

For all exposures recommendations include:

- Be offered Imvamune® vaccination
- Can be permitted to continue routine daily activities with public health measures in place
- Self-monitor for signs and symptoms and isolate immediately if develop
- Practise proper hand hygiene and respiratory etiquette
- Reduce risk of transmission by having fewer sexual partners and using appropriate protection (condoms, dental dams, gloves, clothing)

Intermediate and high-risk exposure contacts (Appendix C) are recommended to:

- Follow all previous recommendations
- Avoid high-risk settings and populations at risk for more severe disease (pregnant, young children)
- Avoid any close contact with animals

High-risk exposure contacts are recommended to:

- Follow all previous recommendations
- Wear a well-fitting medical mask whenever in the presence of others (includes household members)
- Refrain from sexual contact with others
- Be especially vigilant when self-monitoring for symptoms if working with populations at risk of more severe disease

High risk contacts are described as having prolonged or intimate contact, including:

- Skin/mucosa to skin contact with a case (regardless of the case's lesion location)
- Skin/mucosa contact with a case's biological fluids, secretions, skin lesions or scabs
- Skin/mucosa contact with surfaces or objects contaminated by a case's secretions, biological fluids, skin lesions or scabs
- Face-to-face interaction with a case, without the use of a medical mask by the case or contact

Examples include:

- Sexual partner
- Household members
- Roommate in a group home or student residence
- Skin/mucosa contact with a case's unwashed bedding, linens, towels, clothing, lesion dressings, utensils, razors, needles, sex toys, etc.

Infection Prevention & Control in Health Care Settings (6)

A person with mpox is considered to be infectious from the onset of symptoms until all their lesions have crusted over, the scabs have fallen off and a new layer of skin has formed underneath. This also includes the healing of all mucosal surfaces (mouth, throat, eyes, vagina and anorectal area).

Infection is thought to occur when the virus enters the body through skin, the respiratory tract, or mucous membranes.

Person-to-person Transmission

Occurs through direct contact with skin lesions or scabs, body fluids (such as blood, saliva and semen) or mucosal surfaces (such as eyes, mouth, throat, genitalia and anorectal area) for example, contact from providing care or sexual contact. Transmission also occurs through respiratory transmission such as contact with infected droplets generated by talking, breathing, coughing, sneezing and from an infected pregnant person to the fetus.

It is not known whether airborne transmission of Mpox occurs, although it is not the primary mode of transmission. More evidence is needed to determine whether airborne transmission occurs.

Fomite Transmission

Occurs through direct, unprotected contact with surfaces, materials (for example, clothing or linens and towels) and objects (for example, razors, utensils, needles, sex toys, toothbrushes) that have been in contact with a person or animal with mpox.

Airborne, droplet and contact precautions are recommended in a healthcare setting for all suspect, probable, and confirmed cases of mpox. Precautions should be initiated when a patient presents with fever and vesicular/pustular rash (suspected case). Any lesions or respiratory secretions should be considered infectious material. Healthcare providers should continue to follow all routine practices including:

- Point of Care Risk Assessment (PCRA)
- Hand Hygiene
- Patient Placement
- Respiratory hygiene
- Personal Protective Equipment (PPE)
- Injection and Medication Safety
- Cleaning and Disinfection Procedures
- Waste Management

Additional precautions

As the modes of transmission are not well understood, airborne, droplet and contact precautions are recommended.

Patient:

- Patient should perform hand hygiene and wear a medical mask
- Suspect, probable and confirmed cases should be immediately placed into an Airborne Infection Isolation Room (AIIR) or single room with the door closed, for assessment upon entry to the healthcare setting.
- If the patient must leave the room, a medical mask should be worn, if medically able to tolerate or clinical condition allows.
- Skin lesions should be kept covered with a gown, clothes, sheet or bandage, except during examination.
- Room should be cleaned and disinfected after use.

Health care worker - Personal Protective Equipment (PPE):

- Fit-tested and seal-checked N95 respirator
- Gown (cuffed, long sleeve)
- Gloves

- Eye protection (e.g., face shield or goggles)
- All PPE (including respirators) must be discarded after each contact with the patient and hand hygiene performed. All PPE should be donned before entering the patient's room. All PPE should be disposed of prior to leaving the isolation room except for the respirator, which should be removed, outside of the room once the door is closed, and hands should again be cleaned.

Room selection/patient placement

- Patient should be placed in an AIIR, when available.
- If an AIIR is not available, the patient should be placed in a single room with the door closed. For inpatients, a dedicated patient bathroom is required and commode can be used if dedicated bathroom not available
- Visitors should be restricted to those necessary for care or compassionate grounds.

Contacts in the Health Care Setting

Asymptomatic intermediate and high-risk contacts should avoid non-essential interactions in enclosed indoor settings with those at higher risk of severe mpox illness including immunosuppressed people, pregnant women, and children under 12 years old.

More detailed information for IPAC in the health care setting can be found here : Interim guidance on infection prevention and control for suspect, probable or confirmed Mpox within Healthcare settings

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Appendix A: Specimen Collection

MPOX PCR	
Cerner Orderable	Miscellaneous Micro
Specimen ***Preferred specimen**	• Lesion fluid and/or crust, scab, skin material* • CSF/Blood **from encephalitic patients only (NOT ROUTINE)** • Formalin fixed and/or paraffin embedded tissue
Specimen Container	• Lesion fluid and/or crust, scab, skin material: UTM/VTM container • Blood(from encephalitic patient): Large red top/SST tube • CSF: 5.0 mL CSF container • Fresh frozen tissues: 50.0 mL Sterile container • Formalin fixed tissue: container clearly identified as containing formalin • Paraffin embedded tissue: sent as entire block or four to six 10uM sections in plastic tube or vial •
Specimen Storage/Stability	• Lesion fluid and/or crust, scab, skin material: store refrigerated (Do Not freeze) • Blood/CSF: store refrigerated or frozen • Tissue: store at -70°C • Formalin fixed tissue: store room temperature •
Turn Around Time	2 calendar days

Prince Edward Island CANADA Health and Wellness

Health PEI

Appendix B - Fact Sheet: Mpox

Mpox is a disease caused by the mpox virus (MPXV). It enters the body through broken skin (even if not visible), the respiratory tract or the eyes, nose, or mouth.

How it spreads:

Animal-to-human

- through direct contact with an infected animal's skin lesions,
- body fluids (such as blood and saliva) or
- mucosal surfaces, including:
    - contact from providing care and handling
    - through bites or scratches
    - preparing or eating undercooked meat (for example, bushmeat)

Person-to-person

- through direct contact with skin lesions or scabs, body fluids (such as blood, saliva and semen) or mucosal surfaces (such as eyes, mouth, throat, genitalia and anorectal area)
    - for example, contact from providing care or sexual contact
- through respiratory transmission such as contact with infected droplets generated by talking, breathing, coughing, and sneezing.
- from an infected pregnant person to the fetus

Fomites

- through direct, unprotected contact with:
    - surfaces,
    - materials (for example, clothing or linens and towels),
    - objects (for example, razors, utensils, needles, sex toys, toothbrushes) that have been in contact with a person or animal with mpox.

Symptoms

Mpox presents with either systemic symptoms, skin or mucosal lesions, or both. Systemic symptoms typically occur 0 to 5 days before the appearance of lesions. However, they may also occur during or after the onset of skin lesions:

Signs and symptoms of mpox may include:

- Skin or mucosal lesions (often painful)

- fever
- chills
- lymphadenopathy (localized or generalized)
- sore throat
- rectal symptoms (for example, rectal pain)
- fatigue
- headache
- musculoskeletal manifestations such as myalgia, arthralgia and back pain
- gastrointestinal symptoms (for example, vomiting, diarrhea)

Skin lesions

Lesions generally (but not always) appear 1 to 3 days after the onset of fever and last for 2 to 4 weeks. Mpox lesions can be painful and may become itchy during the healing phase. Lesions can be located anywhere on the body, including the:

- mouth and pharynx
- genitals
- anal and perianal area
- hands (including the palms)
- feet (including the soles)

Mpox sores usually last between 2 to 3 weeks. The sores change in appearance over time from raised spots to small blisters filled with fluid. They eventually form a scab and fall off.
Some people experience symptoms differently.

If you have been exposed

- Public health is following up with all known contacts of the cases.
- Monitor for symptoms if you have had contact with a person with known or suspected MPXV.
- It can take around 1 to 3 weeks after exposure for a person to develop symptoms.

If you become ill

- Contact your healthcare provider to get tested. Tell your healthcare provider if you have had contact with a person with known or suspected MPXV.
- Stay home and self-isolate until you see a healthcare provider.
    - Stay away from people you live with if you can and do not share towels, clothing or linens.
    - Ask other members of your household, family or friends to look after any pets so you do not spread mpox to animals.
- If mpox is confirmed, public health will contact you to give more instructions.
- Mpox is usually a mild illness and most people recover on their own after a few weeks.

- There are no well-established treatments for mpox. Antiviral medication may be considered on a case-by-case basis.

Recommendations for interactions with others living in the home

- Remain in isolation until deemed no longer contagious (i.e., once scabs have fallen off, and the wound is healed and has a light pink/shiny pearl appearance)
- Avoid contact with vulnerable populations (e.g., children under 12 years of age, immunocompromised individuals, pregnant women), where possible
- Avoid direct touching of other people, including through sexual contact
- Cover all lesions with clothing or bandages as much as possible
- Do not share clothes, bedding, towels, utensils, toothbrush, razors, sex toys, needles, or any other items that may be contaminated with infectious particles from lesions or body fluids
- Isolate in a separate space (e.g., private room for sleeping and washroom) whenever possible, especially if the case has respiratory symptoms, lesions that are hard to cover (e.g., on the face), or weeping lesions.
- If a private room for sleeping is not possible, the case should maintain as much distance as possible from others (e.g., by sleeping in separate beds). If a separate washroom is not possible, the case should clean and disinfect all surfaces and objects they have had contact with and immediately remove and launder used towels.
- Wear a well-fitting medical mask when around others, at all times. When this is not possible, other household members should wear a medical mask when in the presence of the case.
- Maintain proper hand hygiene and respiratory etiquette.
- Cases should consult their health care provider for advice if breastfeeding.
- Avoid contact with animals, including pets, when possible.
- The current spread of mpox in Canada is a result of human-to-human transmission of the virus
- To prevent possible spread to animals, including pets and livestock, cases should have another member of their household care for their animals. If this isn't possible, cases should cover all lesions with clothing or bandages, wear a well-fitting medical mask and gloves when near the animals, and clean and disinfect high-touch surfaces frequently.

Recommendations for interactions with others outside the home

- Only leave isolation to access urgent medical care or for other such emergencies
    - When accessing medical care, cases should, as much as possible, alert health care providers of their infection in advance of the meeting
- Limit contact with others from outside the home during their isolation period
    - This includes not having visitors inside the home, with the exception of a health care provider who follows relevant infection prevention and control measures to provide necessary patient care services
- As much as possible, have necessities delivered to the home, such as medication, groceries, etc.
- Postpone elective medical visits and other elective procedures (e.g., elective dental visits, elective blood tests)

Advice for handling soiled laundry/linens and cleaning

- Avoid direct contact when handling contaminated laundry/linens (i.e., wear disposable gloves).
- Do not shake or otherwise agitate soiled laundry in a way that could disperse infectious particles.
- Wash laundry in a standard washing machine with warm water and detergent.
- Do not share dishes or utensils when eating; however, dishes/utensils can be used by others in the home if these are properly washed between uses either in a dishwasher or in a sink, using warm water and soap.
- Clean and disinfect contaminated surfaces (e.g., bathroom, if shared, after use by the person isolating).
- No special cleaning products are required, usual household cleaning and disinfecting products are sufficient to inactivate the virus.

Advice for waste disposal

- Mpox is classified under Transport Canada regulations as a Category A Infectious Substance and as such requires special handling and packaging.
- Contaminated household waste (such as dressings and bandages) should not be disposed of with household garbage in landfills or dumps. Disposal of contaminated waste will be under the direction of the CPHO.

Prevention and vaccination

Imvamune® is a licensed third generation smallpox vaccine indicated for immunization against smallpox, mpox and related Orthopoxvirus infection and disease in adults 18 years of age and older determined to be at high risk for exposure.

Prince Edward Island CANADA Health and Wellness

Health PEI

Appendix C- Contact Management Recommendations by Exposure Risk Level.

Exposure Risk	Description	Examples
High	Prolonged or intimate contact, including: • Skin/mucosa to skin contact with a case (regardless of the case's lesion location) • Skin/mucosa contact with a case's biological fluids, secretions, skin lesions or scabs • Skin/mucosa contact with surfaces or objects contaminated by a case's secretions, biological fluids, skin lesions or scabs • Face-to-face interaction with a case, without the use of a medical mask by the case or contact	• Sexual partner • Household members • Roommate in a group home or student residence • HCP without appropriate PPE as per IPAC guidance Footnote a • Skin/mucosa contact with a case's unwashed bedding, towels, clothing, lesion dressings, utensils, razors, needles, sex toys, etc.
Intermediate	• Not meeting high-risk exposure criteria above AND: ○ Limited or intermittent, close proximity exposure to a case without wearing adequate PPE for the type of exposure risk (i.e., medical mask and gloves) ○ Shared living space where there are limited interactions with a case or their belongings	• Sitting next to case on plane • Person sharing close proximity workspace for long periods of time
Low or Uncertain	• Not meeting the high- or intermediate-risk exposure criteria above AND: ○ Very limited exposures to a case ○ Wearing adequate PPE for the type of exposure risk (i.e., medical mask and gloves)	• Brief social interactions • Colleagues not sharing a confined or close-proximity office space
Acronyms: • HCP: Health care provider • PPE: Personal protective equipment • IPAC: Infection prevention and control		

Information Sheet
IMVAMUNE (smallpox/Mpox) vaccine for adults 18 years of age and older

Please read this information sheet carefully and ensure all your questions have been answered by a health care provider before receiving the vaccine.

What is Mpox?

- Monkeypox is a rare viral zoonotic disease (transmission from animals to humans) similar to human smallpox. Monkeypox virus is also a member of the orthopoxvirus genus. However, monkeypox infection is less transmissible human-to-human than smallpox and also less deadly (case fatality estimates for monkeypox are up to 10%). Orthopoxvirus infections produce antibody responses that are cross-protective against other viruses within the genus. It is this property of orthopoxviruses that allows Imvamune® to be used as a vaccine against both smallpox and monkeypox.
- Clinical presentation includes pox-like lesions, often in oral and/or anogenital regions, fever, body aches, back pain, and swollen lymph nodes. Since 2022, mpox has been reported across multiple countries previously non-endemic to MPXV including Canada. For more information on mpox in Canada, please visit Mpox (monkeypox) - Canada.ca.

How does the Imvamune® vaccine protect against Mpox?

- Imvamune® is used for vaccination (active immunization) against smallpox and monkeypox virus. Imvamune® activates your immune system to help protect you from smallpox and monkeypox infection and disease. Imvamune® does not contain variola virus and cannot spread or cause smallpox or monkeypox.

Who can and cannot receive the smallpox/Mpox vaccine at this time?

- The IMVAMUNE vaccine may be offered to adults 18 years of age and older who do not have contraindications.

Table 1: Questions and possible recommendations with regards to receiving the IMVAMUNE vaccine

Questions	Possible recommendations
Are you feeling ill today?	Vaccination with IMVAMUNE must be postponed in persons with fever or general malaise. Talk with your health care provider about your symptoms. Your health care provider will advise you when you are able to receive the vaccine.
If you received a previous dose of an orthopoxvirus vaccine (Smallpox vaccine; live (freeze-dried), Smallpox vaccine; live (frozen-liquid) and/or IMVAMUNE), did you have any side effects after vaccination (including allergic reactions, hypersensitivity reactions or heart inflammation [myocarditis/pericarditis]**)?**	Individuals who show hypersensitivity reactions after receiving the first dose of the vaccine should not be given the second dose. IMVAMUNE is not recommended for individuals with a history of myocarditis/pericarditis linked to a previous dose of an orthopoxvirus vaccine as a precautionary approach at this time, until more information is available. Consult with your health care provider.
Are you allergic to eggs or egg products? [1]	Allergic reactions are not a contraindication to immunization with egg protein-containing vaccines. Consult with your health care provider who may advise on extra precautions.

Are you allergic or do you have a confirmed allergy to tromethamine[2] (trometamol, Tris), benzonase[3], gentamicin[4] or ciprofloxacin[4] which are contained in the IMVAMUNE vaccine?	If you are allergic to tromethamine (trometamol, Tris), benzonase, gentamicin or ciprofloxacin, consult with your health care provider about whether to receive the IMVAMUNE vaccine.
Do you have a suspected but unproven allergy to a vaccine component e.g., tromethamine[2] (trometamol, Tris), benzonase[3], gentamicin[4] or ciprofloxacin[4]?	If “yes”, you may receive the IMVAMUNE vaccine. You will be asked to wait in the clinic for 30 minutes after receiving the vaccine to make sure you are feeling well.
Have you had an allergic reaction to another vaccine type or other medication given by injection or intravenously in the past?	If "yes", you may receive the IMVAMUNE vaccine. You will be asked to wait in the clinic for 30 minutes after receiving the vaccine to make sure you are feeling well.
Are you or could you be pregnant or breastfeeding?	Pregnant populations may particularly benefit from vaccination as these populations may be at risk for severe outcomes from disease. Although there are limited data regarding Imvamune® use among specific pregnancy or breastfeeding populations, these individuals should be offered Imvamune® if vaccination is recommended based on high-risk criteria.
Do you have any problems with your immune system or are you taking any medications that can affect your immune system (e.g., high dose steroids, chemotherapy, some arthritis medications)? Ask the health care provider if you are not sure about your medical conditions	The use of IMVAMUNE in immunosuppressed patients is supported by clinical trials which include individuals who are human immunodeficiency virus (HIV) infected. Immune response may be diminished in HIV positive individuals as well as in other patients with immunodeficiency or patients receiving immunosuppressive therapy. Immunosuppressed populations (including those infected with HIV) may benefit from vaccination as these populations may be at risk for more severe outcomes depending on the nature of the immunosuppression. Live vaccines are usually contraindicated for immunocompromised populations; however, IMVAMUNE may be recommended in this group as it is considered a non-replicating vaccine.
Do you have skin conditions such as atopic dermatitis?	The use of IMVAMUNE in immunosuppressed patients is supported by clinical trials which include individuals with atopic dermatitis (AD). Evidence is available which has not indicated any safety concerns for individuals with atopic dermatitis. It is anticipated that some local and systemic reactions may come at higher frequency. Some may also experience a flare up or a worsening of their condition.
Have you recently received specific medications for Mpox treatment (e.g., immunoglobulins)?	Interaction with concomitant administration of immunoglobulins has not been established. If "yes", consult your health care provider.
Have you received another vaccine in the last four weeks or do you anticipate receiving another vaccine in the next 4 weeks?	Imvamune® vaccination can be given concurrently (i.e., same day) or at any time before or after other live or non-live vaccines. Consult your health care provider.
Have you ever felt faint or fainted after a past vaccination or medical procedure?	If “yes”, the health care provider may vaccinate you lying down to prevent you from fainting.

Footnote:

1. In Canada, there are several vaccines manufactured by processes involving hens' eggs or their derivatives, such as chick cell cultures
2. Tromethamine (trometamol, Tris) may very rarely cause allergic reactions and is found in some medications injected to do tests (contrast media) as well as other medications taken by mouth or injection, and some creams and lotions. Note that this is not a complete list.
3. Benzonase is used for purification of viral vaccines, viral vectors for vaccine, cell and gene therapy, and oncolytic viruses, removing DNA/RNA from proteins and other biologicals; reduction of viscosity caused by nucleic acids; sample preparation in electrophoresis and chromatography and prevention of cell clumping

4. Gentamicin and ciprofloxacin are used as antibiotics in the treatment of some bacterial infections.

How is the vaccine administered?
The vaccine is administered by subcutaneous injection in your arm.

Side Effects

- Side effects can develop within a few days after receiving the vaccine and their frequency may depend whether you previously received an orthopoxvirus vaccine (Smallpox vaccine; live (freeze-dried), Smallpox vaccine; live (frozen-liquid) and/or IMVAMUNE). Although most side effects are not serious to your health, they may make you feel unwell for a few days; they will go away on their own. **Some common and expected side effects** include one or more of the following:
    - injection site reactions (e.g. pain, redness, swelling, induration, itching)
    - fatigue
    - headache
    - muscle aches/pain
    - chills
    - nausea

- **Rarely allergic reactions** can occur after receiving a vaccine. Symptoms of an allergic reaction include:
    - hives (bumps on the skin that are often very itchy)
    - swelling of your face, tongue or throat
    - difficulty breathing

  The clinic staff are prepared to manage an allergic reaction should it occur. Seek immediate medical care if you develop any of these symptoms.

Do not use Imvamune® if:

- You are below 18 years of age

Individuals with the following conditions should discuss vaccination with their physician, who will be able to advise on safe vaccination or on alternative preventative measures to avoid infection with smallpox or monkeypox:

• Pregnant or breast feeding woman, these individuals should be offered Imvamune® if vaccination is recommended based on high-risk criteria

• Persons with fever (temperature above 38.5°C)

• Persons with allergies to the active substance or any of the excipients (see ingredients)

What should you do before coming to the clinic?

- Wear a short-sleeve shirt or top with sleeves that are easy to roll up.
- To prevent feeling faint while being vaccinated, have something to eat before coming to the clinic.
- Be sure to adhere to public health measures as advised.

- Bring any identification required by the clinic, such as your health card and your immunization record.

What should you do after receiving the vaccine?

- You will be asked to **wait at least 15 minutes after receiving** the vaccine to be sure you are feeling well. Longer waiting times of 30 minutes may be recommended if there is concern about a possible vaccine allergy. Inform a health care provider right away if you feel unwell while waiting. You should not leave the clinic for at least 15 to 30 minutes after receiving your vaccine, based on the recommendation of the health care provider, and should not leave if you are feeling unwell.
- **Once you leave the clinic, call 9-1-1 right away if you develop any serious symptoms or symptoms of an allergic reaction** such as hives (bumps on the skin that are often very itchy), swelling of your face, tongue or throat, or difficulty breathing. Inform your health care provider of any concerning side effects after receiving the vaccine.
- If possible, **wait at least two weeks after vaccination or completing your IMVAMUNE vaccination series before starting drugs that suppress your immune system**, as recommended by your health care provider or local public health services in your community.
- **Keep your immunization record** with information about the IMVAMUNE vaccine in a safe place.

When should I return for my next dose?

- Individuals at high risk of mpox should receive two doses of Imvamune® administered at least 28 days (4 weeks) apart.

Bring your immunization record with you when you come for your next dose.

If you have any questions, please speak with the person providing the vaccine.