

# Mpox - August 1, 2023

## Introduction

The occurrence of mpox in Canada is novel and the situation is evolving. The public health guidance outlined in this document is based on currently available scientific evidence, including information informed by data collected during the 2022 outbreak, and expert opinion and is subject to change as new information becomes available. Public health ethics principles such as the use of least restrictive means, effectiveness, reciprocity, and proportionality were also considered in the development of the provincial guidance.

This document was developed in conjunction with the Federal guidance, "[Mpox \(monkeypox\): Public health management of cases and contacts in Canada](#)" and with input from Department of Health and Wellness (DHW) Public Health Branch, Department of Environment and Climate Change and provincial partners in the Nova Scotia Health (NSH) such as Infection Prevention and Control (IPAC), Provincial Public Health Laboratory Network (PPHLN), and Public Health.

IPAC measures in health care settings are beyond the scope of this document. See [Appendix A](#).

For individual cases and contacts where situations are not covered in this guidance, Medical Officers of Health (MOH) have discretion to advise.

## Background

Mpox has been endemic in animal populations in several Central and West African countries since 1970, with sporadic occurrence in the human population. Until 2022, the few human cases of mpox infection outside of Africa were in travelers returning from endemic areas or from exposure to infected animals. The global case reports in 2022 were the first outbreak of mpox where person-to-person transmission occurred outside of Central or West Africa.

To date, many of the cases, including in Canada, have been in people who identify as gay, bisexual or other men who have sex with men (gbMSM), particularly among those with multiple sexual partners. It is important to stress that anyone who has close contact with an infected person may acquire infection and mpox is not exclusive to any group or setting. Transmission in the current outbreak has often been found to occur through direct and intimate close contact during sexual activity; however, cases not linked to sexual activity have been reported.

The risk of mpox exposure in Nova Scotia is low. Public places, such as grocery stores and malls, are not considered at-risk locations. The occurrence of non-epidemiologically linked community-based cases is unlikely based on the mode of transmission of the virus; however, this will be monitored.

## Current Status

The up-to-date national epidemiology for the mpox situation can be accessed here: [Mpox \(monkeypox\): Outbreak update](#)

## Case Definition

<https://www.canada.ca/en/public-health/services/diseases/monkeypox/health-professionals/national-case-definition.html>

## Surveillance

<https://novascotia.ca/dhw/populationhealth/surveillanceguidelines/surveillance-guidelines-mpox.pdf>

## Causative Agent

Mpox is caused by the mpox virus, which belongs to the *Orthopoxvirus* genus in the family *Poxviridae*, making it related to smallpox. There are 2 known subtypes (called clades):

1. Clade one (I) [*formerly known as Congo Basin or Central African clade*]
2. Clade two (II) [*formerly known as West African clade*], which is further divided into 2 subclades: Clade IIa and Clade IIb

## Source

The natural reservoir remains unknown, however, small mammals from endemic regions of Africa are thought to maintain the virus in the environment (e.g. dormice, Gambian pouched rats, rope squirrels, sun squirrels). Humans and non-human primates are considered incidental hosts.

## Transmission

Mpox can be transmitted animal-to-human (i.e., zoonotic transmission) or person-to-person. Animals do not currently play a role in the spread of mpox in Canada.

Person-to-person:

- Direct contact with infected skin lesions or their drainage, scabs, body fluids or mucosal surfaces (e.g. mouth, genitalia and anorectal area)
  - In the current outbreak, transmission has mainly occurred during sexual contact. Sexual contact may include physically intimate contact or oral mucosa contact such as kissing, anal sex, oral sex, or vaginal sex, as well as exposure to genital secretions.
  - Sexual practices such as having multiple and frequent anonymous sexual contacts may increase risk of infection.
  - Mpox virus has been detected in semen. More evidence is needed to understand the significance of this finding on the potential for sexual transmission.
- Respiratory transmission such as contact with infected droplets generated by talking, breathing, coughing, and sneezing.
  - The potential for airborne transmission has been suggested, although it is not the primary mode of transmission and more evidence is needed. For this reason, this guidance reflects an element of precautionary public health measures (e.g. consistently and reliably wearing a well-fitted medical mask).
- Vertical transmission from an infected pregnant person to the fetus (congenital mpox). Transmission may also occur during close contact at birth.
- Indirect transmission through contact with materials (e.g. bedding, clothes, dressings), objects (e.g. razors, sex toys, utensils), or surfaces contaminated with mpox virus.

There is a greater risk of infection for people who closely interact with someone who is infectious, including sexual partners, household members, and health care workers. More studies are needed to understand the risk.

## Incubation

The incubation period averages 7 to 14 days, with a range between 3 to 21 days.

## Communicability

A person is most commonly contagious from the onset of initial lesions, until scabs have fallen off and new skin has formed (this is also referred to as *epithelialization* in this document); about 3 to 4 weeks. Some cases may be contagious during their early symptoms (prodrome) but there is not enough evidence to know with certainty whether there can be transmission prior to the onset of symptoms.

## Symptoms

Mpox infection typically presents first as systemic symptoms (prodrome) followed by a rash or lesions, although atypical presentations may occur:

### 1. **Prodrome:** Lasts between 0 to 5 days

- fever
- chills
- sore throat
- headache
- lymphadenopathy\* (localized or generalized)
- fatigue
- musculoskeletal manifestations such as myalgia, arthralgia and back pain
- cough
- nausea, vomiting and diarrhea

\*Lymphadenopathy is a distinctive feature of mpox, as compared to chickenpox and measles where lymphadenopathy is absent. Lymph nodes may swell in the neck (submandibular & cervical), armpits (axillary), or groin (inguinal) and occur on both sides of the body or just one.

### 1. **Rash or lesion eruption:** Usually begins within 1 to 3 days of the prodrome.

In the current outbreak, there have been reports of lesions preceding or occurring in the absence of any prodromal symptoms. Lesions can be located anywhere on the body including face, eyes, palms and soles, oral mucous membranes, genitalia, anorectal and perianal area, and conjunctivae. In many of the current cases, lesions have presented in oral, genital, anorectal, or perianal areas only and proctitis has been frequently reported.

Individual lesions typically evolve sequentially from macules to papules, vesicles, pustules, and finally crusts, which dry up and fall off. The rash usually lasts between 14 to 28 days, with lesions potentially appearing asynchronously through this period. The number of lesions varies from a few to several thousand. The lesions can coalesce, leading to widespread areas of skin erosion.

Mpox is usually a self-limited disease with the symptoms lasting from 2 to 4 weeks, but severe disease can occur. Complications of mpox can include myocarditis, severe pharyngitis, severe proctitis, secondary infections, bronchopneumonia, sepsis, encephalitis, and infection of the cornea with ensuing loss of vision.

The case fatality ratio of mpox has historically ranged from 0 to 11 % in the general population and has been higher among young children, pregnant people, and immunocompromised individuals. In recent times, the case fatality ratio has been around 3 to 6%. Mortality varies according to the viral strain. In the current outbreak, Clade II strain has been identified. This strain has historically seen a lower-case fatality ratio in comparison to Clade I. There have been no deaths related to mpox in Canada to date.

The extent to which asymptomatic infection may occur is unknown.

## Diagnostic Testing

When mpox is suspected on clinical grounds, it should be confirmed with laboratory testing. Senders should contact the microbiologist on call [through QEII locating 902-473-2222/2220] when collecting specimens.

Specimen requirements are listed below. Serology for mpox is not available for diagnostic testing at this time. PCR testing is available at the Central Zone (QEII) Microbiology Laboratory. In the current outbreak, testing will be done promptly, with results generally available within 24-48 hours. Positive specimens will also be referred to the National Microbiology lab for genomic characterization. Specific Transportation of Dangerous Goods shipping information covered below.

Co-infections are possible and other more common infections that should be considered include herpes simplex virus (HSV), varicella zoster virus (VZV), hand-foot-mouth disease (enterovirus), syphilis, chancroid, lymphogranuloma venereum (LGV) and HIV.

Specimens that should be collected on a suspected case of mpox include:

- swab of lesion for mpox virus in viral transport media
- swab lesion for HSV/VZV or enterovirus in viral transport media
- LGV (chlamydia) on a chlamydia swab – this can be from a lesion or a rectal swab in patients presenting with proctitis
- chancroid on a bacterial swab
- blood for syphilis and HIV serology

**Table 1: Specimen Requirements**

Test Requested	Specimen Type	Collection Kit	* Store-transport [see below]
<p>Mpox Virus</p> <p><i>Note: Swabbing multiple suspect lesions can increase diagnostic yield</i></p>	<p>Swab of lesion: a swab in viral transport media should be collected.</p> <p>Use the swabs included in viral transport media kit to rub the base of ulcerated lesions vigorously (like doing an HSV swab). Place the swab in viral transport media.</p> <p><b>One swab can be used</b> for mpox virus testing and other viral pathogens (if indicated).</p>	<p>Viral transport media</p>	<p>2-8°C</p>
<p>Mpox Virus</p>	<p>Lesion or vesicular fluid, crust material or scab</p>	<p>Sterile container (i.e., sterile urine container)</p>	<p>2-8°C</p>
<p>Mpox Virus</p>	<p>Biopsy of lesion (fresh or frozen tissue)</p>	<p>Sterile container (i.e., sterile urine container)</p>	<p>2-8°C</p>
<p>Mpox Virus</p>	<p>Swab of lesion</p>	<p>Viral transport media</p>	<p>2-8°C</p>
<p>Mpox Virus</p> <p><i>Note: NP swab can be used in patients who present before the appearance of skin lesion(s), i.e. if testing during the prodrome</i></p>	<p>Nasopharyngeal and/or throat (oropharyngeal) swab</p>	<p>Viral transport media</p>	<p>2-8°C</p>
<p>Mpox Virus</p>	<p>Rectal swab*</p>	<p>Viral transport media</p>	<p>2-8°C</p>

Mpox Virus	Cerebrospinal fluid (CSF)	Sterile container/ tube (without viral transport media)	2-8°C
<b>Differential diagnosis / rule out other agents:</b>			
Many other infectious pathogens can mimic symptoms of mpox and co-infections are possible. Specimen collection for other more common infections should be considered include herpes simplex infection, varicella zoster infection, hand-foot-mouth disease [enterovirus] infection, syphilis, chancroid, and lymphogranuloma venereum [LGV] and HIV.			2-8°C

**\* Should be considered for individuals presenting with proctitis**

### Store-transport

Specimens should be stored at 2-8°C post collection and shipped to the laboratory on ice packs as soon as possible. If there is a delay in transport more than 72 hours, viral swabs for mpox should be frozen at -70°C or below and shipped on dry ice.

### Shipping and Waste

Mpox virus is a Risk Group 3 pathogen and samples from suspect cases is normally expected to be shipped to laboratories as **Transportation of Dangerous Goods (TDG) Category A**. However, Transport Canada have issued a temporary certificate [TU 0886] allowing patient samples for mpox virus screening/ testing to be shipped by GROUND or AIR as Category B to laboratories. The sample cannot contain any other Category A infectious substance to use this exemption.

Instructions for packaging and documentation are outlined in the TU 0886 certificate with a noted expiration date:

**[Approvals - Search by Certificate Number \[tc.gc.ca\]](#)** Then proceed with a search using the term 0886 to navigate to the updated certificate. The certificate includes information on both patient specimens and waste.

TDG requirements for **[Shipping Infectious Substances \[canada.ca\]](#)**.

## **TDG Packaging Personnel**

Shipping requires a TDG trained personnel to package and ship samples being investigated for mpox virus. TDG Regulations states that a person who handles, offers for transport, or transports dangerous goods must be adequately trained and hold a training certificate. A person who does not hold a valid training certificate may still perform those activities in the presence and under direct supervision of a person who is adequately trained and holds a valid training certificate. The supervision as it pertains to TU 0886 can be done by videoconferencing.

## **Treatment**

Treatment should be overseen by a clinician and details are out of scope for this document. Briefly, most mpox infections are self-limiting and require only supportive treatment. The goals of care are to alleviate symptoms, manage complications, and prevent long-term sequelae.

### **TPOXX (tecovirimat)**

TPOXX (tecovirimat) is a Health Canada authorized treatment under an extraordinary use indication for human smallpox disease. While the drug does not have an approved indication for the treatment of mpox in Canada, it is approved for this indication in the European Union. A licensed healthcare professional may use their clinical judgement to prescribe TPOXX off-label to treat mpox infections. The product monograph for TPOXX can be found here: [https://pdf.hres.ca/dpd\\_pm/00063782.PDF](https://pdf.hres.ca/dpd_pm/00063782.PDF)

Public Health MOHs can work with Infectious Disease specialists and/or other treatment specialists, to determine the need to access TPOXX on a case-by-case basis.

For more information on treatment for mpox, refer to PHAC's [Mpox \(monkeypox\): For health professionals](#) webpage.



# PUBLIC HEALTH MANAGEMENT AND CONTROL

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## Case Management

Mpox is a self-limited disease, as such the majority of cases will be able to manage symptoms at home and in community. The ability to recover in the home and implement infection control measures is likely to vary depending on the following factors:

- If the case is a child or an adult who requires care
- The presence of additional infected or uninfected persons in the home
- The nature and extent of lesions in each case
- The need for hospitalization

### Suspect Case:

- Notify case or their parent/guardian of need for **testing**
- Follow any additional public health measures **at discretion of MOH**, including avoiding the following direct contact with others until diagnosis ruled out: contact with lesions, contact with mucous membranes, and sexual contact
- **Isolation is not required**

### Probable Case:

- Notify case or their parent/guardian of need for **testing**
- Interview the case or parent/guardian to assess risk factors and collect further information pertaining to case details, such as symptoms, hospitalization, medical, travel and exposure history, previous vaccine, or infections
- Initiate contact tracing
- **Advise case to isolate at home and avoid household and other contacts until lab results are available. If negative, isolation is no longer required. If positive, continue isolation and follow as a confirmed case**

## Confirmed Case:

- Notify case or their parent/guardian of positive test results
- Interview the case or parent/guardian to assess risk factors and collect further information pertaining to case details, such as symptoms, hospitalization, medical, travel and exposure history, previous vaccine, or infections
- Complete contact tracing
- **Advise case to isolate at home and avoid household and other contacts until meets criteria for isolation discontinuation**

## Education and Case Follow up

During the **initial call** with a case or caregiver, education should be provided from the pertinent sections: Isolation, Isolation Discontinuation, Case Recovery and Public Health Measures to Reduce Transmission of Mpox.

After confirmation of positive test results, a follow-up call should be made to the confirmed case or caregiver **approximately 7 days later**. Additional follow-up may occur on a case-by-case basis.

Due to the emerging nature and atypical presentation of mpox disease, cases may need to be referred for clinical assessment by a healthcare practitioner to verify disease progression and/or whether criteria for isolation discontinuation (listed below) or recovery is met. This may be done in consultation with MOH.

## Isolation

Isolation is advised for probable and confirmed cases of mpox. Public Health works with cases to identify and mitigate any barriers to effective isolation in the home, as well as provide appropriate supports as needed. The unique characteristics of the case and their living situation should be considered (e.g., congregate living setting).

- 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, preferably medical, mask when around others. When this is not possible, other household members should wear a well-fitting, preferably medical, mask when in the presence of the case.

## Isolation Discontinuation:

Isolation can be discontinued when the following criteria are met:

1. No new lesions have formed within the last 48 hours
2. No fever for 24 hours (without the use of antipyretics)
3. A) Lesions are crusted/scabbed, fallen off, and epithelialized (i.e., have a light pink/shiny pearl appearance)

### OR

B) Lesions can be covered with bandages and/or clothing\* AND a case must:

- Wear a well-fitting, preferably medical mask around all people (household and non-household)
- Avoid the following direct contact with others until recovered (defined below): contact with lesions, contact with mucous membranes, and sexual contact
- Avoid high-risk populations (children under 12, pregnant, and immunocompromised individuals) until recovered
- Continue to follow Public Health Measures to Reduce Transmission of Mpox until meets the definition of recovered

\*Facial, oral, or any lesions that cannot be covered would exclude the case from isolation discontinuation until lesions epithelialized

## Case Recovery

The case is considered **recovered** when lesions are epithelialized, they are afebrile for 24hrs (without the use of antipyretics), improved symptoms (e.g., headache, muscle pain, fatigue, respiratory symptoms), and they feel well enough to resume normal activities.

Due to unknowns about potential transmission, for **8 weeks** after lesion epithelialization recovered individuals should use barrier protection (e.g., condoms, dental dams) during all sexual activity. Barrier protection for up to 12 weeks may be recommended as a precautionary approach for those whose partner(s) are currently pregnant, planning to become pregnant, or are immunocompromised.

Recovered individuals should refer to [Canadian Blood Services](#) before donation of blood or any other bodily fluid or tissue for more information.

## Public Health Measures to Reduce Transmission of Mpox

Avoiding direct contact with lesions helps to limit the transmission of the virus to others. This is especially important for groups at higher risk for severe disease (e.g., children under 12 years of age, immunocompromised individuals, and pregnant persons).

The following are measures to reduce transmission of mpox:

- Avoid high-risk populations; children under 12, pregnant persons, and immunocompromised individuals
- Keep lesions covered with bandages and/or clothing
  - Persons with extensive lesions that cannot be easily covered (i.e. facial or oral lesions) or respiratory symptoms (e.g., cough, sore throat) should isolate in an area separate from other household members
- Abstain from all sexual contact with others
- Do not donate blood or any other body fluid (including sperm) or tissue
- Limit unessential visitors
- Limit contact with other household members. This is especially important for groups at higher risk for severe disease outcomes (e.g., children under 12 years of age, immunocompromised individuals, pregnant persons)
- Practice frequent hand hygiene and respiratory etiquette. Hand hygiene includes hand washing with soap and water or when hands are not visibly dirty, use of an alcohol-based hand sanitizer.
- Wear a well-fitting, preferably medical, mask when in the same room as others in the home, especially if respiratory symptoms are occurring (e.g., cough, sore throat)
  - If this is not feasible (e.g., a child with mpox), other household members should wear a well-fitting, preferably medical, mask when in the presence of the person with mpox
- Avoid contact with wild or domestic animals where possible
- Avoid travel to other cities, regions/provinces/territories or to other countries
- Consult a health care provider for advice if breastfeeding

- Mpox symptoms are typically self-limited and can be managed at home. If medical care is required, inform providers of mpox diagnosis prior to arrival
- Reschedule non-urgent and elective appointments and/or arrange for virtual care where available
- If traveling after isolation discontinuation, but prior to recovery, review and follow destination jurisdictional public health measures and/or restrictions prior to departure.

## Recommendations for Environmental Hygiene|

See [Appendix B](#)

## High-Risk Populations

Immunocompromised individuals, pregnant persons, and children under 12 are at increased risk for poor health outcomes if exposed to mpox. Given the increased risk to these populations, suspect, probable, and confirmed cases must use extra precautions to avoid infecting these high-risk populations and closely follow the public health measures to protect these populations.

## Limiting Care Provider Risk

When possible, only one individual in the home or alternative isolation site should provide direct care to the case, when needed [referred to as the “caregiver”].

The caregiver should **not** be someone considered vulnerable to severe mpox disease (e.g., child under 12 years of age, pregnant persons, or immunocompromised individuals)

Caregivers should self-monitor for symptoms for 21 days since their last exposure to the case while infectious (see *Contact Management* section below for further details). If symptoms develop, they should immediately notify Public Health and follow their instructions.

Caregivers should follow public health measures to reduce transmission of mpox.

Health care providers entering the home to provide medical care should follow [Appendix A: Infection Prevention and Control guidance](#).

## Exclusions

Cases who meet criteria for isolation discontinuation must continue to isolate away from high-risk populations and associated settings (e.g., elementary schools, childcare settings, health care settings with immunocompromised individuals) until they meet the definition of recovered. *Consult MOH if case was present in a high-risk setting while infectious.*

Health care facilities will manage patients with mpox based on their own guidelines [see [Appendix A: Infection Prevention and Control Guidance](#)].

## Contact Management

Contact tracing is a key strategy for reducing ongoing transmission of mpox by identifying all contacts exposed during the infectious period. The incubation period of mpox virus can be up to 21 days prior to onset of initial symptoms. The case is considered infectious from time of onset of any symptoms until the scab crusts of lesions have fallen off and new skin has formed [approximately 3 to 4 weeks].

Public Health will work with cases to collect detailed information regarding potential exposures during their infectious period. As well, will assess level of risk, notify contacts deemed high-risk of their potential exposure, and provide appropriate advice and education as listed below.

Contacts assessed as having a **high-risk exposure** may be eligible for post-exposure immunization with Imvamune vaccine [see below].

Contact tracing efforts may not always be directed at individuals and instead encompass groupings of individuals present in settings where high-risk transmission could have occurred. In the current outbreak, transmission has occurred in urban centres, large events, and shared social networks of those who self-identify as gbMSM. Reaching contacts considered to have high-risk exposure related to settings where contacts are anonymous may require more collaborative and/or outreach approaches (e.g., outreach to communities, business owners, stakeholder engagement, awareness campaign, etc.).

If an individual self-presents to their health care provider with an exposure to a mpox case the health care provider should contact Public Health. Public Health in collaboration with the Medical Officer of Health, will determine the need for contact management, including eligibility for post-exposure immunization, based on an assessment of the details available.

### High-Risk Exposure Criteria:

- Direct contact with a case's skin or mucosa including biological fluids, respiratory secretions, skin lesions, scabs, or drainage
- Direct skin or mucosa contact with a case's unwashed bedding, linens, towels, clothing, lesion dressings, utensils, razors, needles, sex toys, etc.
- Sexual contact with a case
- Interaction with a case within 2 meters, for 3 hours or greater accumulated over 24 hours without the use of a medical mask

*\*Clinical judgment should be used to determine if post-exposure prophylaxis is appropriate for a contact that does not meet the high-risk exposure criteria\**

Examples of high-risk exposures include:

- Sexual partner
- Household members
- Roommate in a group home or student residence
- Health Care Providers (HCP) without appropriate PPE as per Infection Prevention and Control guidance. HCP should refer to their Occupational Health policies

The following information should be provided to all contacts of probable or confirmed mpox cases.

- **Eligibility regarding post-exposure immunization to high-risk contacts**
- Date of potential high-risk exposure
- Public health measures to reduce transmission
- Self-monitoring for any signs and symptoms for the 21-day period following last exposure, including: fever  $\geq 38^{\circ}\text{C}$ , new skin rash, chills, and new lymphadenopathy (lymph nodes may swell in the neck [submandibular & cervical], armpits [axillary], or groin [inguinal] and occur on both sides of the body or just one)
- If no symptoms then they can continue routine daily activities (e.g., attend work, school), but are encouraged to wear a medical mask when in contact with others).

- What to do if they develop symptoms [see probable case]
- Encourage contacts to try avoiding medications that are known to lower fever [e.g., acetaminophen, ibuprofen, acetylsalicylic acid] as these medications could mask an early symptom of mpox.

## Immunization

Imvamune vaccine is authorized in Canada for active immunization against mpox for adults aged 18 and older and may play a role in managing the current outbreaks of mpox in Canada. For more information on Imvamune, including storage, process for accessing, administration, precautions, and use in special populations, please see the [Imvamune Vaccine Information for Healthcare Providers in the Context of Mpox Outbreaks in Canada](#) document and the [Canadian Immunization Guide](#). Please note that the prophylaxis guidance in this document is subject to change as new evidence becomes available.

### Interim Guidance for Pre-Exposure Immunization

Individuals eligible for Imvamune pre-exposure immunization must meet one of the following criteria:

1. Identify as a cisgender or transgender queer man, a two-spirit person, or a non-binary person, who has sexual contact with a cisgender or transgender queer man, a two-spirit person, or a non-binary person **AND** have at least one of the following:
  - 2 or more sexual partners as defined above since May 2022, or are planning to
  - A diagnosis of bacterial STI since May 2022
  - Attended, worked at, or volunteered at an event/social venue for sexual contact, such as a bath house or sex club since May 2022, or are planning to
  - Had anonymous sex since May 2022, or are planning to
  - Engaged as a worker or a client in sex work since May 2022, or are planning to

**OR**

2. Are a sexual contact of someone who meets the above criteria

In Nova Scotia, for those meeting the eligibility criteria listed above, Imvamune immunization should be offered as a **two-dose primary series**, with a **minimum interval of 28 days**. Individuals considered moderately to severely immunocompromised should be prioritized to receive two doses of



the Imvamune vaccine at the authorized 28-day interval. Those with a prior documented history of mpox infection need not be vaccinated.

Only individuals who meet the eligibility criteria should be offered pre-exposure immunization due to limited vaccine supply. Initiation of this immunization series is intended only for residents of Nova Scotia or those visiting Nova Scotia for prolonged periods of time [i.e., for school or work]. However, anyone who received one dose of Imvamune vaccine as part of a vaccination campaign outside of Nova Scotia can receive a second dose within the province to complete their series.

Imvamune vaccine should **not** be offered to individuals who are symptomatic and who meet the definition of suspect, probable, or confirmed case of mpox or who have a prior history of infection with mpox in the context of the current outbreak.

Most individuals who have documented evidence of receiving a live replicating first- or second- generation smallpox vaccine in the past should receive a single dose of Imvamune vaccine. However, individuals considered moderately to severely immunocompromised should receive two doses regardless of previous smallpox vaccine.

Individuals should receive a maximum of two doses of Imvamune (whether administered as PrEP or PEP) in a two-year period.

### **Interim Guidance for Post-Exposure Immunization**

It is recommended that all high-risk contacts of a confirmed or probable case are rapidly identified and post-exposure immunization should be provided to those eligible.

Based on Public Health investigation:

- A single dose of the Imvamune vaccine should be offered to individuals with high-risk exposure to a probable or confirmed case of mpox (as defined under *Contact Management*), or within a setting where transmission is happening.
  - Post-exposure immunization should be offered **within 4 days** of exposure; however, it can be offered **up to 14 days** after exposure to potentially prevent or attenuate infection.
  - Vaccine should **not** be offered to individuals who are symptomatic and who meet the definition of suspect, probable, or confirmed case of mpox or who have a prior history of infection with mpox in the context of the current outbreak.

- After 28 days, if an individual is assessed as having a predictable ongoing risk of exposure, a second dose of Imvamune vaccine may be offered.
- For most individuals who have documented evidence of receiving a live replicating first- or second- generation smallpox vaccine in the past and who sustain a high-risk exposure to a probable or confirmed case of mpox, a single dose of Imvamune vaccine should be offered [i.e., as a booster dose]. However, individuals considered moderately to severely immunocompromised should receive two doses, regardless of previous smallpox vaccination.
- Individuals who have only received a single dose of Imvamune vaccine pre-exposure and subsequently sustain a high-risk exposure to mpox are eligible to receive a *single* dose of vaccine, for a total of 2 doses of Imvamune. Individuals should receive a maximum of two doses of Imvamune in a two-year period.

# Appendices

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## Appendix A: Infection Prevention and Control Guidance

[Nova Scotia Health Infection Prevention and Control Mpox Resources](#)

[PHAC Interim guidance on infection prevention and control for suspect, probable or confirmed monkeypox within Healthcare settings - Canada.ca](#)

## Appendix B: Recommendations for environmental hygiene

Adopted from [PHAC's Mpox \(monkeypox\): Recommendations on hand and environmental hygiene](#)

### Hand hygiene

Wash hands regularly with soap and water [for at least 20 seconds]. Caregivers should perform hand hygiene before and after contact with the case, before putting on and after removing gloves, and after touching surfaces/items that the case has had contact with. An alcohol-based hand sanitizer with at least 60% alcohol may be used if soap and water are not available, and hands are not visibly soiled.

### Disposable gloves

If gloves become soiled or torn while providing care: remove them, perform hand hygiene and put on a new pair.

### Handling laundry

Laundry should be performed prior to cleaning and disinfecting surfaces and objects, to decrease opportunities for cross-contamination.

The case should be responsible for handling their own laundry [e.g., clothes, towels, bed linens, etc.]. Carefully take dirty laundry to the washing machine in a basket that can be cleaned and disinfected or in a disposable garbage bag.

Put the garbage bag used to transport dirty laundry into a second laundry bag, close securely and properly discard into waste. Clean and disinfect your laundry basket as instructed below. Do not put clean laundry into the laundry basket or garbage bag used to take dirty laundry to the washing machine.

Contaminated laundry must be washed in a standard washing machine using the hottest water setting [70°C] with detergent and must be completely dried using a high temperature setting in a drying machine. The laundry from a case must be washed separately from the laundry of individuals who do not have mpox.

If the case does not have access to laundry washing and drying machines, Public Health may assist in identifying supports to ensure contaminated items can be laundered appropriately.

**If the case is unable to launder their own items and a caregiver needs to handle these items, the caregiver should:**

- Avoid shaking or handling the contaminated laundry in a way that may disperse infectious particles in the air or on surrounding surfaces or objects
- Wear a well-fitting medical mask and gloves. The mask and gloves should be properly disposed of after use and hand hygiene should be performed as described above.
- Ensure the contaminated laundry does not come in contact with their skin or clothing
- Cover any skin that could potentially come in contact with the contaminated laundry (e.g., consider wearing long pants, long sleeves, an apron)
- If the caregiver's clothing comes in contact with the contaminated laundry, the clothing should be removed and cleaned in the same manner as the contaminated laundry, and separately from the laundry of individuals who do not have mpox
- If laundry must be done outside of the case's home, the caregiver should transport contaminated laundry in a leakproof bag or secured garbage bag [double bagged]
- Do not put clean laundry into the garbage bag used to transport dirty laundry. The garbage bag used to transport the dirty laundry should be disposed of following the waste management instructions below.
- Surfaces that may have come in contact with contaminated laundry should be cleaned and disinfected after use as described below.

## Cleaning and disinfecting surfaces and objects

It is recommended that surfaces and objects the case may come in contact with are cleaned and disinfected after each use, with particular attention paid to high-touch surfaces and objects [e.g., tabletops, countertops, toilets, door handles, light switches, computer keyboards].

Disposable gloves should be worn while cleaning and disinfecting items.

Single-use disposable cleaning equipment [e.g. disposable towels] is recommended.

- If disposable cleaning materials are not available, reusable cleaning and disinfection cloths may be used but must be laundered after each use following Handling Laundry section above. If neither option is available, the cleaning materials should be discarded.

If a surface or object is visibly soiled, it should first be cleaned with regular household cleaning products followed by disinfection using a standard household disinfectant effective against viruses. Ensure manufacturer's instructions are being followed when using these products.

If using household bleach to disinfect, mix 250 mL [1 cup] of water per 5 mL [1 teaspoon] bleach [5 % sodium hypochlorite], to achieve the recommended 0.1 % sodium hypochlorite solution.

The case should avoid sharing any personal items [e.g., toothbrushes, razors, sex toys, needles, etc].

The case should avoid sharing a bed and washroom with other household members, where possible. If a separate washroom is not available, the case [or caregiver] should clean and disinfect all surfaces between each use and immediately remove and launder used towels [as above].

After the case has recovered, the rooms they accessed in the home should be cleaned and disinfected. This will lower the potential risk of transmission to other household members or visitors.

## Waste management

To reduce the risk to others within the household and those collecting garbage, the case should keep contaminated waste [e.g. bandages, gloves, masks, tissues, food packaging] separate from other household waste in a lined trash can. Contaminated waste should be double bagged using a good quality and leak-proof garbage bag, and securely tied. Where possible, only the case should handle contaminated waste and garbage bags. When handling garbage bags for disposal, the case or caregiver should use clean gloves and always practice hand hygiene immediately after following the guidance above.

Ensure other people, and animals, including rodents, are unable to access contaminated items by placing bags in animal-proof garbage bin until municipal pick-up. If possible, store bins indoors until municipal pick up.

### **Cleaning furniture and carpets**

Floors should be wet mopped rather than swept to prevent dispersing virus into the environment

Avoid vacuuming which can disperse virus into the environment unless the vacuum has a high-efficiency particulate air (HEPA) filter

Try to avoid contaminating upholstered furniture and other materials that cannot be laundered by placing coversheets, waterproof mattress covers, blankets, or tarps over them.

Upholstered furniture and carpets should be steam cleaned where possible after all skin lesions have healed. Visible soiling can be removed using commercially available cleaning products.

Clean upholstered furniture and carpets that require removal of visible soil using commercially available cleaning products or professional steam cleaning.

Individuals should consult their public health department if they have grossly soiled furniture.

### **Cleaning dishware and utensils**

The case should not share dishes and utensils and should, where possible handle and wash them.

It is not necessary for the case to have dedicated and separate utensils if they are properly washed between uses.

Soiled dishes and eating utensils should be washed in a dishwasher or by hand with hot water and soap.

## References and Resources

[Mpox \(monkeypox\) - Government of Nova Scotia, Canada](#)

[Mpox \(monkeypox\): Public health management of cases and contacts in Canada - Canada.ca](#)

[Mpox \(monkeypox\): For health professionals - Canada.ca](#)

[Mpox \(monkeypox\): Outbreak update - Canada.ca](#)

[NACI Rapid Response - Interim guidance on the use of Imvamune in the context of monkeypox outbreaks in Canada](#)

[Mpox \(bccdc.ca\)](#)

[Ontario Ministry of Health Q&A for Monkeypox: Interim Vaccine Guidance for Post-Exposure Prophylaxis \(PEP\) and How to Access Tecovirimat](#)

[Infection Prevention and Control \(IPAC\) Recommendations for Monkeypox in \(publichealthontario.ca\)](#)

[World Health Organization: Mpox \(monkeypox\) fact sheet](#)

[World Health Organization: Disease outbreak news](#)

[About Mpox | Monkeypox | Poxvirus | CDC](#)

[Principles for mpox control in the UK: 4 nations consensus statement - GOV.UK \(www.gov.uk\)](#)

[Recommendations for the use of pre and post exposure vaccination during a monkeypox incident \(publishing.service.gov.uk\)](#)

[Nigerian Centre for Disease Control: Monkeypox](#)

[Nigerian Centre for Disease Control: Update of Monkeypox Outbreak in Nigeria](#)

[Centers for Disease Control and Prevention: Mpox in the United States](#)