

MONKEYPOX - SEPTEMBER 15 2022

Introduction

The occurrence of monkeypox in Canada is novel and the situation is evolving. This document provides guidance to public health practitioners in the event cases of monkeypox occur in Nova Scotia. The approach focuses on case and contact follow-up, education on reducing the risk of transmission, and protection of susceptible populations including guidance on post-exposure vaccination.

The public health guidance outlined in this document is based on currently available scientific evidence and expert opinion. It is subject to change as new information on transmissibility and epidemiology 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, “[Public health management of cases and contacts associated with monkeypox virus in Canada](#)” and with input from Department of Health and Wellness (DHW) Public Health Branch, Department of Environment and Climate Change and provincial stakeholders and partners in the Nova Scotia Health (NSH) such as Infection Prevention Control (IPAC), Provincial Public Health Laboratory Network (PPHLN), and Public Health.

IPAC measures in health care settings are beyond the scope of this document.

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

Background

Monkeypox 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 monkeypox infection outside of Africa were in travelers from endemic areas or from exposure to infected animals.

The recent global case reports are the first outbreak of monkeypox where human-to-human transmission has occurred outside of Central or West Africa, with cases reported in Europe, the United States, and Canada. To date, many of the cases, including in Canada, have been in people who identify as gay and bisexual and other men who have sex with men [gbMSM]. It is important to note that anyone who has close contact with an infected person may acquire infection. Given that monkeypox is transmitted by close contact with skin lesions of an infected individual, contaminated objects, or respiratory droplets, it is believed that transmission in the current outbreak has often been through close skin-to-skin contact during sexual activity.

The risk of monkeypox exposure to the general public 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 monkeypox situation can be accessed here: [Monkeypox: Outbreak update](#)

Case Definition

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

Surveillance

Surveillance Form

<http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/monkeypox-case-report-form.docx>

Reporting Requirements

Health Care Practitioners should report any suspect monkeypox cases to Public Health and should contact the Infectious Disease physician on-call, as well as the Medical Microbiologist on-call if specimens will be submitted (see Diagnostic Testing).

1. Contact Infectious Disease on-call through QEII locating (902-473-2222/2220)
2. Notify Public Health:
 - Monday-Friday (excluding holidays) 8:30am – 4:30pm notify local public health per regular reporting process. Local contact details available at: [Public Health Offices Nova Scotia Health](#)
 - Outside of Regular Business Hours and on holidays contact QEII Locating at 902-473-2222/2220 and ask for the Medical Officer of Health on-call.

Nova Scotia Health Public Health should report any confirmed or probable cases to the DHW Surveillance Team via Panorama.

Causative Agent

Monkeypox is caused by the monkeypox virus, which belongs to the *Orthopoxvirus* genus in the family *Poxviridae*, making it related to smallpox.

Source

The natural reservoir remains unknown. However, rodents and non-human primates can harbour the virus and may infect people.

Transmission

Monkeypox virus can be transmitted animal-to-human (i.e., zoonotic transmission) or human-to-human, although the latter has historically been limited. Transmission occurs by direct contact with infected lesions or their drainage, lesion scabs, body fluids or respiratory droplets, although data regarding human-to-human transmission are limited and emerging. It can also be transmitted indirectly by contact with materials (e.g., bedding, clothes, dressings, sex toys) contaminated with virus from an infected person's bodily fluids or lesions. Transmission can also occur via the placenta from mother to fetus (which may lead to congenital monkeypox) or through close contact during and after birth.

In the current global outbreak, case investigations have suggested that most transmission has occurred during intimate sexual contact. Monkeypox is not thought to be transmitted through sexual transmission routes; however, there is limited evidence that biological fluids (e.g., semen) may contain the virus. Sexual practices such as having multiple and frequent anonymous sexual contacts may increase risk of infection. Sexual contact may include intimate contact or oral mucosa contact such as kissing, anal sex, oral sex, or vaginal sex, as well as exposure to genital secretions.

The potential for airborne transmission has been suggested given the respiratory system involvement during infection, possible transmission during the prodromal period, and similarities to smallpox. For this reason, this guidance reflects an element of precautionary public health measures (i.e., consistently, and reliably wearing a well-fitted medical mask). There is a greater risk of infection for people who closely interact with someone who is infectious, including household members, sexual partners, 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 5 to 21 days.

Communicability

A person is most commonly contagious from the onset of initial lesions (typically on the tongue and in the mouth), 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 no evidence that there is transmission prior to the onset of symptoms.

Symptoms

Symptoms for classical monkeypox infection can generally be divided into two periods, although atypical presentations may occur:

- 1. Prodrome**, lasts between 0 to 5 days. During this time, fever, chills, intense headache, lymphadenopathy, fatigue, back pain, myalgia, proctitis, and sometimes sore throat and cough may occur. Lymphadenopathy is a distinctive feature of monkeypox, 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.
- 2. Rash**, or skin eruption, usually begins within 1 to 3 days of the appearance of fever. In the current outbreak, there have been reports of the rash preceding or occurring in the absence of any prodromal symptoms. The rash is often more concentrated on the face and extremities, rather than the trunk. Most common areas for rash are the face, palms and soles, oral mucous membranes, genitalia, and conjunctivae. In some of the current cases, lesions have been in the genital, perineal, or perianal area only. 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.

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

The case fatality ratio of monkeypox has historically ranged from 0 to 11 % in the general population and has been higher among young children, pregnant women, 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, the Western clade strain has been identified. This strain has historically seen a lower-case fatality ratio in comparison to the Central African clade. There have been no deaths related to monkeypox in Canada to date.

The extent to which asymptomatic infection may occur is unknown.

Diagnostic Testing

When monkeypox 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 monkeypox 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. Samples may be also 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 infection (HSV), varicella zoster infection (VZV), hand-foot-mouth disease [enterovirus] infection, syphilis, chancroid, and lymphogranuloma venereum (LCV) and HIV.

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

- swab of lesion for monkeypox in viral transport media
- swab lesion for HSV/VZV or enterovirus in viral transport media
- chlamydia on a chlamydia swab
- chancroid on a bacterial swab
- blood for syphilis and HIV serology

Table 1: Specimen Requirements

Test Requested	Specimen Type	Minimum Volume	Collection Kit	* Store-transport
Monkeypox related testing:				
Monkeypox Virus <i>Note: Swabbing multiple suspect lesions can increase diagnostic yield</i>	Swab of lesion: a swab in viral transport media should be collected. 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. One swab can be used for monkeypox testing and other viral pathogens (if indicated).	Not Applicable	Viral transport media	2-8°C
Monkeypox Virus	Lesion or vesicular fluid, crust material or scab	Not Applicable	Sterile container (i.e., sterile urine container)	2-8°C
Monkeypox Virus	Biopsy of lesion (fresh or frozen tissue)	Not Applicable	Sterile container (i.e., sterile urine container)	2-8°C
Monkeypox Virus	Swab of lesion	Not Applicable	Viral transport media	2-8°C
Monkeypox Virus <i>Note: NP swab can be used in patients who present before the appearance of skin lesion(s)</i>	Nasopharyngeal and/or throat swab	Maybe useful if testing during the prodrome; collection as per respiratory viral collections (i.e. Influenza or COVID-19)	Viral transport media	2-8°C

Monkeypox Virus	Cerebrospinal fluid (CSF)	≥0.5 ml may be submitted on encephalitic patients	Sterile container /tube (without viral transport media)	2-8°C
Differential diagnosis / rule out other agents:				
Many other infectious pathogens can mimic symptoms of monkeypox 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 [LCV] and HIV.				2-8°C

*** 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, some specimens should be frozen at -70°C or below and shipped on dry ice.

Shipping and Waste

Monkeypox 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 monkeypox 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 monkeypox. 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 monkeypox 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 monkeypox 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 monkeypox infections. The product monograph for TPOXX can be found here: 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 the modes of transmission, clinical manifestations, diagnosis and treatment for monkeypox, refer to PHAC's [Monkeypox: For health professionals](#) webpage.

PUBLIC HEALTH MANAGEMENT AND CONTROL

Case Management

Monkeypox 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 or pets 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 Monkeypox.

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 monkeypox 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 monkeypox. 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:

No new lesions have formed within the last 48 hours

1. No fever for 24 hours (without the use of antipyretics)
2. 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 Monkeypox 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 condoms during all sexual activity and should not donate blood or any other bodily fluid (including sperm) or tissue.

Public Health Measures to Reduce Transmission of Monkeypox

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 monkeypox:

- 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, runny nose) 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, shortness of breath, sore throat)
 - If this is not feasible (e.g., a child with monkeypox), other household members should wear a well-fitting, preferably medical, mask when in the presence of the person with monkeypox
- 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
- Monkeypox symptoms are typically self-limited and can be managed at home. If medical care is required, inform providers of monkeypox 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.

See Appendix 2 for Recommendations for Environmental Hygiene

High-Risk Populations

Immunocompromised individuals, pregnant persons, and children under 12 are at increased risk for poor health outcomes if exposed to monkeypox. 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 monkeypox 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.

Care givers should follow public health measures to reduce transmission of monkeypox.

Health care providers entering the home to provide medical care should follow Appendix 1: *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 monkeypox based on their own guidelines [see *Appendix 1: Infection Prevention and Control Guidance*].

Contact Management

Contact tracing is a key strategy for reducing ongoing transmission of monkeypox by identifying all contacts exposed during the infectious period. The incubation period of monkeypox 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 his/her the 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 Prophylaxis (PEP) 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 monkeypox 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 PEP, 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 monkeypox cases.

- **Eligibility regarding PEP 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 monkeypox.

Prophylaxis

Imvamune is a vaccine which is authorized in Canada for active immunization against monkeypox for adults aged 18 and older. For more information on Imvamune and how it is used in Nova Scotia, please see the [Imvamune Vaccine Information for Healthcare Providers in the Context of Monkeypox Outbreaks in Canada](#) document.

Pre-Exposure Prophylaxis (PrEP) Vaccination

Imvamune PrEP is available through select clinics in Nova Scotia for those at greater risk of exposure to monkeypox. The eligibility criteria for Imvamune PrEP are as follows:

Individuals eligible for Imvamune PrEP 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+ sexual partners as defined above in the last 3 months, or are planning to
 - A diagnosis of bacterial STI in the last 3 months
 - Attended, worked at, or volunteered at an event/social venue for sexual contact in the last 3 months, or are planning to

- Had anonymous sex in the last 3 months, or are planning to
- Engaged as a worker or a client in sex work, or are planning to

OR

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

Post-Exposure Prophylaxis (PEP)

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

Nova Scotia has adopted *the National Advisory Committee on Immunization (NACI) Interim Guidance on the use of Imvamune in the context of monkeypox outbreaks in Canada*. [**NACI Rapid Response – Interim guidance on the use of Imvamune in the context of monkeypox outbreaks in Canada**](#)

Key points:

- PEP using a single dose of the Imvamune vaccine may be offered to individuals with high-risk exposures to a probable or confirmed case of monkeypox, or within a setting where transmission is happening.
- The first dose should be offered **within 4 days** of exposure; however, it can be offered **up to 14 days** post exposure to potentially decrease severity of illness.
- PEP should **not** be offered to individuals who are symptomatic and who meet the definition of suspect, probable, or confirmed case.
- For individuals who have documented evidence of receiving a live replicating first- or second- generation smallpox vaccine in the past and sustained a high-risk exposure to a probable or confirmed case of monkeypox, a single dose of Imvamune PEP should be offered (i.e., as a booster dose). It is possible that previous vaccination against smallpox may also provide protection against monkeypox, however protection may have waned over time. Smallpox vaccination in Nova Scotia ended in 1976.
- Individuals with high-risk exposures to people infected with monkeypox may derive maximum benefit from PEP if offered soon after such exposure. However, some high-risk exposures may extend beyond 28 days of post-exposure timeframe to offer PEP. In situations where confirmed high-risk exposures are multiple (i.e., beyond a single case) and expected to be ongoing over a period of weeks, PEP recipients may be offered a **second dose** of vaccine 28 days after the first dose.
- PEP will be prioritized for those who are identified as high-risk. The setting where high-risk exposures occurred, but contacts may be anonymous (e.g., bars, clubs, events) will also be considered for PEP prioritization.

Imvamune Indications

Imvamune is a Health Canada approved live-attenuated, non-replicating vaccine indicated for active immunization against monkeypox and smallpox in adults 18 years of age and older. For use in monkeypox management, this vaccine has been approved for use as pre- and post-exposure- prophylaxis. Imvamune is not indicated for the treatment of monkeypox.

Post-exposure vaccination may prevent or attenuate infection, especially when given early after exposure.

Special Populations

Imvamune vaccine may be offered to the following populations, if recommended in consultation with their health care provider to receive vaccine based on exposure risk:

- Individuals who are immunocompromised due to disease or treatment
- Individuals who are pregnant
- Individuals who are lactating
- Children and youth less than 18 years [Use of Imvamune in children under the age of 18 is not currently authorized by Health Canada and is therefore considered off-label, but this population may benefit from vaccination as they may be at higher risk of severe outcomes from monkeypox infection]

Other Considerations

Imvamune given as PEP should not be delayed due to recent receipt of an mRNA COVID-19 vaccine.

The product monograph for Imvamune can be found here: https://pdf.hres.ca/dpd_pm/00063755.PDF

Also refer to the [***NACI Rapid Response - Interim guidance on the use of Imvamune in the context of monkeypox outbreaks in Canada***](#) prior to administering the product.

Pre-Exposure Vaccination

At this time, there is no intention to provide wide-scale pre-exposure vaccination within Nova Scotia.

Appendices

Appendix 1: Infection Prevention and Control Guidance

[Nova Scotia Health FAQs sheet](#)

[Nova Scotia Health IPAC at a Glance for Monkeypox- Inpatient Care](#)

[Nova Scotia Health IPAC at a Glance for Monkeypox - Ambulatory/Primary Care](#)

Appendix 2: Recommendations for environmental hygiene

[adopted from Monkeypox: Public health management of cases and contacts in Canada]

Handling laundry

The case should do their own 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 monkeypox.

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, they should:

- 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 single-use gloves that are disposed of after each use
- The mask and gloves should be properly disposed of after use
- Hand hygiene should be performed with soap and warm water or an alcohol-based hand rub after removal of PPE or if hands are visibly soiled, after caring for a case, after coming in contact with contaminated laundry or surfaces, and before eating or touching eyes/nose/mouth
- The caregiver should cover any skin that could potentially come in contact with the contaminated laundry (e.g., consider wearing long pants, long sleeves, an apron)
- The caregiver should ensure the contaminated laundry does not come in contact with their skin or clothing
- Any garments from the caregiver that may have come in contact with the contaminated laundry should be removed and cleaned in the same manner as the contaminated laundry, and separately from the laundry of individuals who do not have monkeypox
- 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)
- The garbage bag used to transport the dirty laundry should be put in a second garbage bag, closed securely and properly discard into waste
- Do **not** put clean laundry into the garbage bag used to transport dirty laundry.
- 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 and waste management

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

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. 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.

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.

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].

Waste management

Double bag all household waste. Dispose of recyclables and compost materials with general waste rather than separating. If needed, contact your municipality to determine privacy bag allotment for household waste

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

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

Dishes and other eating utensils should not be shared with the case.

It is not necessary for the case to have dedicated and separate utensils if they are properly washed before use by someone else. Soiled dishes and eating utensils should be washed in a dishwasher or by hand with hot water and soap.

References and Resources

[Monkeypox - Government of Nova Scotia, Canada](#)

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

[Monkeypox: For health professionals - Canada.ca](#)

[Monkeypox: Outbreak update - Canada.ca](#)

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

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

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

[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: Second meeting of the International Health Regulations \(2005\) \(IHR\) Emergency Committee regarding the multi-country outbreak of monkeypox](#)

[World Health Organization: Monkeypox fact sheet](#)

[World Health Organization: Monkeypox outbreak toolbox](#)

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

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

[Principles for monkeypox 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: Monkeypox in the United States](#)