# MPox (formerly known as Monkeypox)

## 1 INTRODUCTION

Mpox (formerly known as Monkeypox) is a rare infectious disease caused by the Mpox virus (genus orthopox). Mpox virus is related to, but distinct from, the viruses that cause smallpox (variola virus) and cowpox. Cases of mpox are usually found in central and western Africa and it is rare to find cases outside of that geographic area. There are two genetically distinct clades (subgroups) of mpox virus, with different human clinical and epidemiological manifestations: *West African clade* mpox manifests with limited human-to-human transmission, and with a case fatality rate of 1%, whereas the *Congo Basin clade* is associated with human-to-human transmission and case fatalities historically reported of 10%.

## 2 INFECTION PREVENTION & CONTROL PRECAUTIONS

All 3 types of additional precautions indicated below are required at all times when managing individuals with mpox:

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| Routine Practices | X |
| Contact Precautions | X |
| Droplet Precautions | X |
| Airborne Precautions | X |

### ADDITIONAL INFECTION PREVENTION & CONTROL DISEASE SPECIFIC CONSIDERATIONS

If you *suspect* a case, initiate Additional Precautions (indicated above), contact IP&C/designate, and page Infectious Diseases on call.

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| **PPE REQUIREMENTS** | Items:<br>• Fit-tested and seal-checked N95 respirator<br>• Disposable long-sleeved gown<br>• Gloves<br>• Face/eye protection<br><br>Requirements:<br>• Hand hygiene must be performed before donning PPE, and during and after the doffing PPE process<br>• Don all PPE prior to entering patient room, following established protocols (PPE Donning (English); PPE Donning (French))<br>• Doff **all** PPE (including N95 respirators) after each patient contact, following established protocols (PPE Doffing (English); PPE Doffing (French)) |

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| **ACCOMMODATION** | Place patient/client with suspected or confirmed mpox infection in an airborne infection isolation room (AIIR), when feasible.<br><br>If an AIIR is not available, place patient/client in a single room with the door closed. Dedicated patient bathroom is preferred, or provide commode if unable to dedicate bathroom.<br><br>Note: Individuals with organisms known to spread via the airborne route (e.g., TB) as well as those with a respiratory viral illness needing AGMPs are prioritized for AIIR placement. |
| **ENVIRONMENT/ EQUIPMENT CLEANING** | Be vigilant with routine Infection Prevention and Control (IP&C) practices, including hand hygiene, cleaning and disinfecting equipment, and cleaning and disinfecting the care environment according to usual protocols.<br><br>Use facility-approved disinfectants for equipment and environmental cleaning and disinfection (i.e., Accel Intervention).<br><br>Avoid dry dusting, sweeping, or vacuuming; wet cleaning methods are preferred.<br><br>Follow manufacturer's recommendations for concentration, contact time and care in handling. Accel Intervention requires a 1-minute wet contact time.<br><br>Increase frequency of cleaning and disinfection of high-touch surfaces to at least twice daily and when visibly soiled.<br><br>Carefully handle used and soiled laundry (e.g., bedding, towels, patient gowns) by avoiding excessive shaking or flipping to prevent environmental or self-contamination (see below).<br><br>Dedicate non-critical patient care equipment to a single patient. Clean and disinfect all reusable equipment with facility-approved disinfectant prior to removal from isolation room. Equipment and supplies that cannot be cleaned/disinfected must be discarded.<br><br>On discontinuation of precautions/discharge of patient, privacy curtains must be changed. |

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| | Clean and disinfect waiting room areas (e.g., ED, ambulatory clinics) routinely, and at increased frequency for highly used areas (e.g., ED) at least twice daily, and as needed. Clean and disinfect all surfaces that could have been touched including chairs in the area and public bathrooms. |
| **LAUNDRY/LINEN MANAGEMENT** | Wear PPE as outlined above during collection and bagging of all linens at the point of use.<br><br>Handle soiled laundry/linen (e.g., bedding, towels, personal clothing) in a manner to avoid contact with lesion material that may be present on the laundry. Gently and promptly contain soiled linen; do not shake or handle in manner that may disperse infectious particles into the air and onto surrounding surfaces.<br><br>Bag linen in a leak-proof bag, sealed, or tied and placed inside an impermeable bag for transport to laundry area. Only fill bag 2/3 full. Bags to be sealed in the room before removal.<br><br>In ambulatory care settings, use standard medical laundry facilities. If not available, wash items in a standard washing machine with hot water (70°C) with detergent and completely dry in a commercial dryer. |
| **PATIENT TRANSPORT** | Notify Patient Transport Services in advance, re: suspect/confirmed mpox status of patient/client.<br><br>Notifying receiving facility in advance, re: suspect/confirmed mpox status of patient/client.<br><br>Patient and staff to perform hand hygiene.<br><br>Patient to wear a medical mask during transport, and when outside of isolation room (for medically essential purposes only).<br><br>Staff to wear PPE as outlined above.<br><br>Cover skin lesions with a gown, clothes, sheet, or bandages. If lesions are weeping, bandages must be used. |
| **CONTACT FOLLOW-UP** | IP&C will perform facility-based contact tracing of those receiving care (i.e., not healthcare workers) and determine if high, intermediate, or low risk contacts (see Appendix I). Where there are high risk contacts, in addition to |

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| | monitoring for signs and symptoms for 21 days after last exposure, ID must be consulted to consider post-exposure prophylaxis with a vaccine effective against mpox.<br><br>Contacts of cases are monitored for 21 days for development of signs/symptoms consistent with mpox. Isolation is not required unless symptoms develop. Contacts who develop signs/symptoms compatible with mpox shall be immediately isolated, IP&C/designate contacted, and Infectious Diseases consulted.<br><br>IP&C/designate will report patient contacts of cases/exposure to a case to Manitoba Health, Seniors and Care via the Clinical Notification of Reportable Diseases and Conditions form. |
| **NUTRITION SERVICES** | Management of food service items should be performed in accordance with routine practices. |
| **WASTE MANAGEMENT** | All waste to be managed as biomedical waste.<br><br>Bags to be sealed before removal from the room.<br><br>Waste is placed in appropriate bags, boxes, and/or leak-proof containers, and appropriately labelled/identified. Refer to the WRHA Waste Management Operational Directive for specific details. |
| **PATIENT EDUCATION** | Educate cases and contacts on prevention measures:<br>• Limit contact with others, including household contacts, do not share room or space, avoid sleeping in the same bed<br>• Practice general hygiene measures including proper hand hygiene and respiratory etiquette<br>• Do not donate blood, cells, tissue, breast milk, semen, or organs<br>• Avoid all sexual contact since may be infectious prior to symptoms developing. While condom use and reduction of the number of partners is not completely protective in the case of mpox, it could reduce the risk of exposure<br>• Avoid non-essential interactions in enclosed indoor settings with those at higher risk of severe mpox illness including congregate settings, immunosuppressed people, pregnant women, and children under 12 years old. If this is unavoidable, consider wearing a well-fitting medical mask in these settings or around vulnerable populations |

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| | • Do not contact/handle pets and animals<br>• If symptoms develop, isolate at home and follow guidance for cases to prevent spread to others. Contacts should notify public health or Health Links – Info Santé (204-788-8200 or toll-free at 1-888-315-9257) if they develop symptoms, and be assessed by their health care provider. They should inform the health care provider of the situation to avoid exposing other people. |
| **VISITORS** | Designated caregivers are permitted in order to meet the patient's care needs.<br><br>Visitors are not permitted except in exceptional circumstances (e.g., end of life). |

## 3 CLINICAL PRESENTATION (SIGNS & SYMPTOMS)

Mpox infection has two clinical phases:

- A prodromal illness that lasts between 1 to 5 days followed by fever, malaise, headache, backache, chills, weakness, and swollen lymph nodes. Swelling of the lymph nodes may be generalized or localized to several areas.

- A skin rash that begins shortly after the prodrome (1-5 days after fever): rash evolves from maculopapular to papular, vesicular, and pustular lesions. Pustules will crust over and scale off within approximately 2-3 weeks. Lesions typically begin to develop simultaneously and evolve together on any given part of the body and are often seen on the face, the palms of the hands, and the soles of the feet. Rash often begin on the face or genital area and spreads to other parts of the body. Number of lesions can vary from a few to thousands. Lesions may be seen in different stages at the same time. Although this virus is not known to be a sexually transmitted infection, sexual exposure (close contact) is a risk factor, and the lesions may start and be localized to the sites of contact (e.g. genital or oral lesions).

## 4 ROUTE OF TRANMISSION

A person can contract mpox when they come into close contact with an infected animal, infected person, or materials contaminated with the virus. The virus can enter the body through broken skin, the respiratory tract, or through mucous membranes. Transmission can occur via direct contact with mpox skin lesions, non-intact skin or scabs, indirect contact with clothing or linens used by an infected person, or close contact to the respiratory tract secretions of an individual with mpox. Any lesions or respiratory secretions should be considered infectious material.

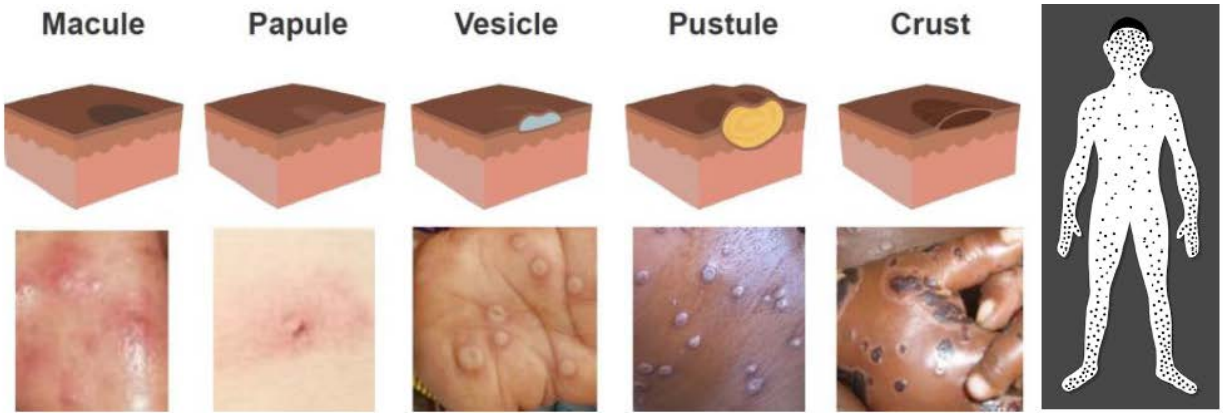
Avoid contact with animals, including household pets. The risk of people passing the virus to animals is unknown at this time. A number of animal species are

susceptible to mpox, especially rodent species, but the full range of susceptible animals remains unknown.

Based on the few cases of mpox in pregnancy that have been reported, vertical transmission appears possible. The rate and gestational age at which it occurs is unclear and the fetal consequences are yet to be delineated. Please see Section 8 for more information on congenital mpox.

## 5 CLINICAL PROGRESSION AND INCUBATION PERIOD

- Incubation time is typically 6-13 days from exposure, with a range of 5-21 days
- In previous clinical descriptions, the febrile stage lasts 1 to 4 days prior to the first eruption of skin lesions. In some recent cases it appears the initial lesions may precede the development of the febrile stage
- Lesions progress from macule, to papule, to vesicle, to pustule, which will then crust
- The rash/skin lesion stage can last 2-4 weeks
- The patient is contagious until the scab crusts have fallen off (about 3-4 weeks) and new skin has formed
- Most infections last 2-to-4 weeks and self-resolve




Treatment for mpox is mainly supportive. For severe cases, consult infectious diseases for consideration of antivirals.

## 6 PERIOD OF COMMUNICABILITY

An individual may be infectious up to 5 days prior to the rash. A person is considered no longer contagious once all lesions have crusted over and fallen off and new skin can be seen.

Especially avoid contact with those at higher risk of severe mpox illness including immunosuppressed people, pregnant women, and children under age 12 years.

## 7 DIAGNOSIS

*Note: latest updates will appear in blue*

Clinical diagnosis of mpox can be difficult, and it is often confused with other infections such as syphilis, herpes simplex virus (HSV) infection, chancroid, varicella zoster and other common infections. Clinicians should be vigilant and consider mpox in their differential diagnosis if the individual reports travel and possible exposure to other cases including through sexual contact.

### 7.1 SCREENING/SPECIMEN COLLECTION

Routine laboratory testing should be performed to rule out other more common diagnoses.

Consult Infectious Diseases for further advice on laboratory testing, diagnosis, and treatment.

Following consultation with Infectious Diseases, if mpox is considered, send the following specimens to Cadham Provincial Laboratory for mpox PCR, and notify CPL in advance of submitting specimens.
On the CPL requisition, clearly indicate the differential diagnosis and relevant exposures, and the request for "mpox PCR". Before submitting specimens, notify the CPL physician on call by calling HSC paging at 204-787-2071. Note special packaging is required for transport of specimens.

- Flocked swab of the lesion fluid. Place the swab in a sterile 100 ml urine container or sterile 5-10 ml CSF conical bottom sample tube. Transport media is not required.
  - Please note: testing for other cutaneous or mucosal viruses requires another flocked swab in viral/universal transport medium (VTM). A swab submitted in VTM can be processed for mpox PCR as well as other viruses
- Scab or crust material. Place in a sterile 100 ml urine container or sterile 5-10 ml CSF conical-bottom sample tube. Transport media is not required.
- Nasopharyngeal (flocked) swab in VTM (note this is optional as is not the mpox specimen of choice, however is quite useful for detecting other more common causes of similar presentations such as Coxsackievirus)
- Depending on the clinical presentation, other specimens may be recommended by Infectious Diseases
- Note: serology for mpox is not available
- Specimen transport: Transport Canada requires shipping and transport of mpox specimens to follow Category B shipping and certification, as per the temporary certificate

## 8 CONGENITAL MPOX

It is unclear if vertical transmission of mpox virus can occur. The World Health Organization (WHO) reports transmission from the mother or birthing parent to the fetus can occur via the placenta (which can lead to congenital mpox) or by close

contact during and after birth. Women or persons with active mpox infection should not breastfeed. There is no evidence that cesarean delivery will prevent neonatal mpox in the context of maternal/parental mpox infection. For antenatal mpox resolved by the time of delivery, mode of delivery should be determined based on obstetrical factors exclusively. In the context of active isolated genital lesions, cesarean delivery is recommended.

If the baby is born through active lesions (either via vaginal or cesarean delivery) or during presumed/confirmed viremia, monitor infant for signs of compromise of mpox infection.

If:

- Mother or birthing parent is positive and still considered to be actively infected:
  - Isolate the infant AWAY from the mother or birthing parent, unless infant is also determined to be positive
  - If the infant is also positive, they may be isolated with the mother or birthing parent
- Mother or birthing parent is suspected due to suspicious lesions/illness and a history of potential exposure:
  - Isolate infant AWAY from mother or birthing parent until after incubation period if mother or birthing parent remains negative
- Mother or birthing parent is suspected due to compatible lesions and no history of exposure:
  - Isolate infant AWAY from mother or birthing parent until diagnosis is determined as NOT mpox
- Mother or birthing parent is asymptomatic and a history of exposure:
  - Isolate infant AWAY from mother or birthing parent until after incubation period, if remains asymptomatic

Stillbirths and products of conception in from pregnancies affected by mpox should have PCR testing; specimen(s) collected at the source before sending to Pathology. If there are lesions, they should be swabbed. If no lesions, collect an appropriate tissue specimen. For non-placental products of conception, swabs of mucosal surfaces, lesions, or other affected surfaces should be submitted.

## 9 DURATION OF PRECAUTIONS

Maintain precautions until all lesions have crusted over and fallen off and new skin can be seen.

## 10 OESH

HCWs who, without wearing appropriate PPE, have had prolonged face to face contact with a case of mpox, prolonged skin/mucosal contact with a case's skin

regardless of the case's lesion location, have had any direct contact with body fluids or lesion material from the case, or indirect contact with items contaminated with potentially infectious material (e.g., clothing or linens) should immediately report their exposure to OESH. They do not need to be restricted from work.

Depending on the type and extent of exposure they may be referred to public health for active monitoring and consideration for post exposure prophylaxis with a vaccine effective against mpox or be told to self monitor for symptoms for 21 days after the exposure.

Staff shall immediately notify OESH if they are notified as a contact or potential contact of mpox.

Staff are encouraged to follow all public health direction/recommendations outside of the workplace.

## 11 DEFINITIONS

**Confirmed Case**: A person who is laboratory confirmed for mpox virus 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 presents with an unexplained rash or lesion(s), AND has one or more of the following:

1. An epidemiological link to a probable or confirmed mpox case in the 21 days before symptom onset, such as:
    - 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
2. Reported travel history to, or residence in, a location where mpox is reported in the 21 days before symptom onset.

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

1. An unexplained acute rash 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
    - Asthenia (profound weakness)

    Note: It is not necessary to obtain negative laboratory results for listed common causes of rash illness in order to classify a case as suspected
2. An unexplained acute genital, perianal or oral lesion(s)

## 12 REFERENCES

Interim guidance on infection prevention and control for suspect, probable or confirmed monkeypox within Healthcare settings: Interim guidance on infection prevention and control for suspect, probable or confirmed monkeypox within Healthcare settings - Canada.ca

Manitoba Health: Monkeypox Update

BC CDC: http://www.bccdc.ca/health-professionals/clinical-resources/monkeypox#:~:text=Monkeypox%20infection%20has%20two%20clinical,until%20crusting%20that%20scales%20off.

Centers for Disease Control and Prevention: Infection Control: Healthcare Settings | Monkeypox | Poxvirus | CDC

Images from Sunnybrook Monkeypox Summary (May 20, 2022)

Transport Canada temporary certificate: https://tc.canada.ca/en/dangerous-goods/temporary-certificates/temporary-certificate-tu-0886-monkeypox-samples

Khalil, A., Samara, A., O'Brien, P. et. al. (2022). Monkeypox and pregnancy: what do obstetricians need to know? *Ultrasound in Obstetrics & Gynecology*. Available at: https://obgyn.onlinelibrary.wiley.com/doi/10.1002/uog.24968

## Appendix I: Exposure Risk Levels

*Note: latest updates will appear in blue*

| Risk of Exposure | Description | Examples |
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| ***High*** | Prolonged or intimate contact, including:<br>• Skin/mucosa to skin contact with a case (regardless of the case's lesion location)<br>• Skin/mucosa contact with a case's biological fluids, secretions, skin lesions or scabs<br>• Skin/mucosa contact with surfaces or objects contaminated by a case's secretions, biological fluids, skin lesions or scabs<br>• Face-to-face interaction with a case, without the use of a medical mask by the case or contact | • Household members (e.g., family member, roommate)<br>• Intimate or sexual contact<br>• Providing direct physical care without appropriate personal protective equipment (PPE)<br>• High risk environmental contact (e.g., cleaning potentially contaminated rooms without wearing appropriate PPE)<br>• 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:<br>• 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)<br>• Shared living space where there are limited interactions with a case or their belongings. | • Sitting next to case on plane<br>• Person sharing close proximity workspace for long periods of time |
| ***Low*** | Not meeting the high- or intermediate-risk exposure criteria above AND:<br>• Very limited exposures to a case (e.g., no direct contact, and not close, face-to-face interaction).<br>• Wearing adequate PPE for the type of exposure risk (i.e., medical mask and gloves) | • Brief social interactions<br>• Colleagues not sharing a confined or close-proximity office space |