

| | |
|--------------|--|
| DATE: | 2022 August 18 |
| TO: | All Physicians and Clinicians |
| FROM: | Public Health Laboratory (ProvLab), Alberta Precision Laboratories |
| RE: | Monkeypox Virus (MPXV) Testing (UPDATED from July 18, 2022) |

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Message

- Testing for MPXV is available through the Public Health Laboratory (ProvLab) in Alberta.
- **Preferred method of diagnosis of MPXV infection:**
 - **Collect swabs of the fluid/purulent material contained within the skin lesions after deroofting the lesion.**
 - **Collect separate swabs from at least three different skin lesions to optimise yield.**
 - **Use the same collection kit that is used for herpes simplex (HSV)/varicella zoster (VZV) skin lesion testing.**
- At present, clinicians should consult with the **Virologist-on-call (VOC)** for **all** suspected cases of MPXV before ordering testing. Approval from the Medical Officer of Health (MOH) on call is no longer required.
- The case definition for MPXV Infection and guidance regarding testing for Alberta has been updated. Please refer to <https://www.albertahealthservices.ca/topics/Page18087.aspx> for details.
- Further details regarding the specimen types and tests available can be found in the APL Test Directory and below.

Background

MPXV is an illness caused by a zoonotic orthopox virus. Since May 2022, there has been an evolving multi-country outbreak of MPXV outside of the African continent. This outbreak is due to MPXV Clade 3 (lineage B.1).

MPXV transmission between humans can occur via several methods:

- Skin-to-skin contact with infected material from skin lesions or other body fluids (this can include but is not limited to sexual contact);
- Prolonged face-to-face contact;
- Indirect contact with lesion material such as through contaminated clothing or linens.

Individuals with MPXV infection are considered contagious until all skin lesions scab and heal.

The incubation period upon exposure is believed to be 7-14 days (range 5-21 days dependent upon mode of transmission). The illness is characterized by an initial phase involving systemic symptoms of fever, chills, myalgias, lymphadenopathy, headache followed by a characteristic rash. This rash starts on the trunk and spreads peripherally and can involve any body area, including the face, peri-oral areas, intra-oral areas, and genital areas (inguinal folds, anywhere on the penis or scrotum, vaginal areas, and perianal areas).



Cases from the current 2022 multi-country outbreak tend to present in an atypical fashion. It is characterized by fewer and more atypical appearing lesions, with more lesions observed in genital areas.

The differential diagnosis of MPXV infection may include other pathogens such as HSV, VZV, enterovirus/parechovirus, and others. It is advised clinicians also consider other differential diagnoses, based on patient history, physical examination, and clinical presentation.

Virologic diagnosis of MPXV

MPXV is diagnosed in the laboratory by direct detection of viral DNA using a nucleic acid amplification test (NAAT) (also known as polymerase chain reaction, (PCR)).

What do I do if I suspect a patient has MPXV?

1. Ensure appropriate infection prevention and control measures are implemented.
2. Provide the patient with a surgical/procedure mask and place them in a separate room with the door closed immediately upon arrival. The mask should be worn by the patient for the duration of the appointment.

Person-to-person transmission primarily occurs via large respiratory droplets and/or direct contact with infective lesions or material. There is a theoretical risk of airborne transmission. However, there are other infections which spread by the airborne route that could have similar rash presentations as monkeypox.

- If measles or varicella (specifically primary infection/chickenpox, disseminated shingles, or localized shingles in an immunocompromised individual) or other airborne infections **are** included in the differential diagnosis use Airborne Precautions with or without Contact / Contact and Droplet precautions as indicated.
 - Healthcare workers must use a fit tested N95 respirator.
 - After the patient leaves: Air clearance time (i.e. "settle time") required. The room should remain empty with the door closed for 2 hours and then use routine cleaning/disinfection protocols.
- If measles or varicella or other airborne infections (i.e. other than Monkeypox) **are NOT** part of the differential diagnosis, then use Modified Respiratory Precautions.
 - Healthcare workers must use a fit tested N95 respirator.
 - After the patient leaves: Air clearance time not required. Use routine cleaning/disinfection protocols.

For further information, please refer to:

- *Clinic settings:* [IPC Algorithm for Suspect/Probable Monkeypox \(MPX\) in Community Clinic Settings](#)
- *Acute care (hospital/urgent care) setting:* AHS Infection and Prevention and Control (IPC) Acute Care Resource Manual – Diseases Conditions Table (<https://www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-resource-manual-main-document.pdf>; page 150).



3. It is advised that **prior** to specimen collection for MPXV testing, clinicians should consult with the Virologist on Call (VOC).
 - The VOC at ProvLab can be paged by calling +1 403 944 1200 (Calgary) or +1 780 407 8822 (Edmonton).
4. Specimens acceptable for testing (**note: this has been updated**):

| Specimen Type | How to Submit (all tests are for MPXV PCR/NAAT): |
|--|--|
| <p><u>Preferred sample type</u> Swab of fluid/purulent material from skin lesions after deroofting.</p> | <p>First derroof lesions being swabbed.</p> <p>Collect a viral flocced swab of the fluid/purulent material contained in each lesion and <i>place in Universal Transport Media (UTM) (red top tube with pink-coloured liquid)</i>.</p> <p>Be sure to consider other related differential diagnoses.</p> <p><u>NOTE: Dry swabs are no longer accepted.</u></p> <p><u>It is advised the separate swabs are submitted from at least 3 different skin lesions for MPXV PCR/NAAT to rule out infection. Please be sure to label swab anatomical sites on the containers and requisitions. Use a separate requisition for each swab.</u></p> |
| <p>Blood for MPXV PCR/NAAT</p> | <p>Collect blood in an EDTA (lavender top) tube for molecular detection. In adults, it is ideal to have at least 3-5mL of blood. This is more helpful in early infection.</p> <p>*A negative PCR/NAAT of the blood does <u>NOT</u> rule out monkeypox virus infection.</p> <p><i>There are no serology tests available for monkeypox.</i></p> |
| <p>Other</p> | <p>Other specimens such as nasopharyngeal swabs and urine can be also tested.</p> <p>*A negative MPXV PCR/NAAT result on any of these does <u>NOT</u> rule out the diagnosis of MPXV infection.</p> |

If in doubt as to how to collect specimens, please consult with the VOC at ProvLab (page via 403 944 1200 in Calgary or at 780 407 8822 in Edmonton).



5. Avoid sending patients to outpatient collection facilities for bloodwork unless directed to do so following a discussion with the VOC.
6. If specimens are collected in a hospital system, please avoid use of the pneumatic transport tubes. Specimens collected from outpatient (clinics) may require different arrangements from the laboratory. Any specimen collected from a patient with suspected or confirmed MPXV should be transported as per the following:
 - a. Call APL courier dispatch +1 403 770 3311 OR +1 844 770 3311. DynaLife Dx dispatch can be contacted via +1 780 451 3702 (extension 8117). Please call the applicable number to advise that a query MPXV specimen is requiring pickup. If transport is required from a physician's office, one of these numbers should be called. APL/DynaLife will bring packaging.
 - b. Any specimens collected for MPXV PCR/NAAT testing must be transported using Transport of Dangerous Goods (TDG) regulations B (for ground) or TDG A regulations for air. These are regulations developed by Transport Canada.
 - c. A temporary certificate is in place to transport query or confirmed Monkeypox specimens as Category B via GROUND. However, the box must have the following phrase: *TU 0886* and must be transported separately from other category B specimens.

Further information regarding MPXV can be found from

- [Alberta Health MPXV Information Page](#)
- [Alberta Health Services MPXV Information Page](#)
- [Public Health Agency of Canada MPXV Information Page](#)

Inquiries and feedback may be directed to

- Dr. Jamil Kanji, Medical Microbiologist, APL Public Health Laboratory, jamil.kanji@ahs.ca

This bulletin was reviewed and approved by

- Dr. Hong Yuan Zhou, Acting Medical/Scientific Director, APL Public Health Laboratory