
SUBJECT: Human Monkeypox
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To: **Physicians, Primary Care Providers, Emergency Departments**
From: Dr. Matthew Tenenbaum, Associate Medical Officer of Health

- Cases of human monkeypox have recently been reported in parts of the world where it is not endemic including within Canada.
- Monkeypox presents with a prodrome followed 1-3 days later by a rash. Please consider the possibility of monkeypox for any patient with compatible symptoms, especially if they have a history of travel or close contact with a case. These patients should be assessed using airborne/droplet/contact precautions.
- Any suspected cases should be tested as appropriate, based on their symptoms, and reported to Public Health Ontario.
- Cases must self-isolate until their skin lesions have healed and new intact skin has formed. WDGPH will follow up with close contacts, who will be told to self-monitor.

Recently, human cases of monkeypox have been reported in parts of the world, such as Europe and North America, where it is not endemic. Multiple confirmed cases have been reported in Quebec, and at least one suspect case has been identified in Ontario.^{1,2}

About Human Monkeypox

Human monkeypox is caused by the monkeypox virus, an orthopoxvirus related to vaccinia and variola (smallpox). It presents with symptoms similar to, but less severe than, smallpox. In most cases illness is self-limited and treatment is supportive.³

Human monkeypox typically presents with a prodrome that includes fever, headache, fatigue, and myalgias. Rash develops 1-3 days later, often first appearing on the face and then in a centrifugal distribution on the body. Lesions may be few or numerous and generally evolve from macules/papules to vesicles and pustules. Many monkeypox cases develop maxillary, cervical, or inguinal lymphadenopathy which can help distinguish monkeypox from other infections.⁴

Key Clinical Characteristics of Smallpox, Monkeypox, and Varicella (from Collum & Damon, 2014)⁴

Characteristic	Smallpox (Variola)	Monkeypox	Chickenpox (Varicella)
Incubation period	7-17 days	7-17 days	10-21 days
Prodromal period	1-4 days	1-4 days	0-2 days
Rash period	14-28 days	14-28 days	10-21 days
Prodromal fever	Yes	Yes	Uncommon, mild fever if present
Fever	Yes, often >40°C	Yes, often between 38.5°C and 40.5°C	Yes, up to 38.8°C
Malaise	Yes	Yes	Yes
Headache	Yes	Yes	Yes
Lymphadenopathy	No	Yes	No
Lesions on palms or soles	Yes	Yes	Rare
Lesion distribution	Centrifugal	Centrifugal	Centripetal
Lesion appearance	Hard and deep, well-circumscribed, umbilicated	Hard and deep, well-circumscribed, umbilicated	Superficial, irregular borders, “dew drop on a rose petal”
Lesion progression	Lesions are often in one stage of development on the body; slow progression with each stage lasting 1–2 d	Lesions are often in one stage of development on the body; slow progression with each stage lasting 1–2 d	Lesions are often in multiple stages of development on the body; fast progression

Clinical Presentation of Monkeypox (images c/o CDC Public Health Image Library)

		
Maculopapular monkeypox lesions affecting the hands. ⁵	Maculopapular monkeypox lesions of the hand and leg. ⁶	Cervical lymphadenopathy associated with monkeypox. ⁷

Some cases reported in the United States and Europe have been clustered among men who have sex with men (MSM). Some of these jurisdictions have noted atypical presentations, including unusual rashes or lesions in the mouth or genital area.³

Human-to-human transmission of monkeypox occurs through close contact interactions, via exposure to respiratory secretions, direct contact with skin lesions, and/or contact with virus-contaminated materials (e.g. bedding). Individuals with monkeypox are considered communicable from symptom onset until all lesions have resolved.

Available vaccines against smallpox offer some cross-protection against monkeypox.⁸ However, routine smallpox immunization ended in Canada in 1972 and any protective benefit in vaccine recipients has likely waned. Any recommendations regarding the use of smallpox vaccines will be shared once available. Prior chickenpox (varicella) illness or vaccination does not offer protection against monkeypox.

Management of Cases, including Suspect Cases

As the human monkeypox situation evolves, guidance is likely to be updated; please reference the most recent guidance from Ontario's Ministry of Health.

Please consider the possibility of monkeypox for any patient with compatible symptoms, especially if they have a history of travel or close contact with a case. These patients should be assessed using **airborne/droplet/contact precautions** as recommended by Public Health Ontario:

- Use an airborne isolation room (negative pressure) where available. Otherwise, place the patient in a single room with the door closed.
- Wear appropriate PPE including a fit-tested N95 respirator, eye protection, gown, and gloves.
- Practice diligent hand hygiene.
- [Follow other precautions as recommended by Public Health Ontario.](#)⁹

Appropriate test specimens include swabs of the lesion, nasopharyngeal swabs, and serum, as outlined in Public Health Ontario's [Test Information Sheet](#). If possible, please consult with the PHO microbiologist prior to collecting specimens at **1-877-604-4567** (after hours: 416-605-3113). The microbiologist will provide guidance regarding specimen selection, collection and transportation.¹⁰

Public Health Ontario Laboratory Requirements for Monkeypox Specimens¹⁰

Specimen Type	Collection Kit
Lesion fluid, crust material or scab	Sterile tube/container, OR Virus Culture Kit #390081 (large swab in pink UTM)
Swab of lesion	
Nasopharyngeal and/or throat swab	
Serum (≥0.5 ml)	Red top or serum separator tubes
Cerebrospinal fluid (CSF) (≥0.5 ml)	Sterile tube /container
Urine (50ml)	Sterile container

Treatment for monkeypox is mainly supportive. Patients should **self-isolate** until all their skin lesions have crusted, all scabs have fallen off and **new intact skin has formed**. This process may take 2-4 weeks. During this time, they should wear a medical mask and cover skin lesions as much as possible (e.g. with clothing).

Any suspect or probable cases (i.e. awaiting laboratory confirmation) should be provided the same instruction to self-isolate. They may discontinue self-isolation if monkeypox is ruled out by laboratory testing.

Health care providers and hospitals **must report** any confirmed, probable, or suspect cases to Public Health Ontario. Complete the [Ontario Monkeypox Investigation Tool](#) and send it to PHO via secure fax at **647-260-7603**.¹¹ Providers are also encouraged to send the same report directly to WDGPB at **1-855-934-5463**.

Ontario Case Definitions for Human Monkeypox (as of May 20, 2022)¹¹

Confirmed Case	<ul style="list-style-type: none"> • Lab confirmation of infection: • Detection of monkeypox virus DNA by polymerase chain reaction (PCR) from an appropriate clinical specimen, OR • Isolation of monkeypox culture from an appropriate clinical specimen
Probable Case	<ul style="list-style-type: none"> • A new onset rash in keeping with monkeypox illness, AND • At least one (1) other acute sign or symptom of monkeypox illness, AND • Meets at least one (1) of the following epidemiological criteria within 21 days of their symptoms onset: <ul style="list-style-type: none"> ○ High-risk exposure to a probably or confirmed human case of monkeypox, OR ○ A history of travel to a region that has reported confirmed cases of monkeypox, OR ○ A relevant zoonotic exposure
Suspect Case	<ul style="list-style-type: none"> • A new onset rash in keeping with monkeypox illness, AND • At least one (1) other acute sign or symptom of monkeypox illness, AND • An alternative diagnosis cannot fully explain the illness

Management of Close Contacts

WDGPB will follow up with any close contacts of human monkeypox cases based on current guidance from Ontario’s Ministry of Health.

Presently, any close contacts will be directed to self-monitor for signs/symptoms (including prodromal symptoms) for 21 days following their most recent exposure to the case. Any contact who develops symptoms must immediately self-isolate and seek care. Contacts who remain asymptomatic are not required to self-isolate.

References:

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