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DIVISION OF PUBLIC AND BEHAVIORAL HEALTH
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Technical Bulletin

Date: August 2, 2022
Topic: Monkeypox Virus Guidance for Health Care Providers – Clinical Recognition, Testing and Reporting
Contact: Melissa Peek-Bullock, State Epidemiologist, Office of State Epidemiology
To: Health Care Providers, Hospitals, Laboratories, and Local Health Authorities

Background

Since early May 2022, cases of monkeypox have been reported from countries where the disease is not endemic and continue to be reported in several endemic countries. Most confirmed cases with travel history reported travel to countries in Europe and North America, rather than West and Central Africa where the monkeypox virus is endemic. This is the first time that this magnitude of monkeypox cases and clusters have been reported concurrently in non-endemic and endemic countries in widely disparate geographical areas.¹ Nationally, as of August 2, 2022, there have been 5,811 confirmed monkeypox/*Orthopoxvirus* cases reported in 47 states, the District of Columbia and Puerto Rico. The state of Nevada has a total of 25 monkeypox cases, with 24 in Clark County and 1 in Washoe County. Refer to the Centers for Disease Control and Prevention (CDC) [monkeypox global](#) and [U.S. maps and case counts](#).

Transmission

Monkeypox virus is part of the same family of viruses as the variola virus that causes smallpox. Monkeypox symptoms are similar to smallpox symptoms, but milder, and monkeypox is rarely fatal. Monkeypox is not related to chickenpox.²

Transmission occurs through direct contact with infectious rash, scabs or body fluids and through respiratory secretions during prolonged face-to-face contact, or during intimate physical contact such as kissing, cuddling or sex. Transmission can also occur by touching clothing or linens that have been contaminated with infectious rash material or body fluids; anyone who encounters these contaminated items without proper personal protective equipment (PPE) can be exposed. Additionally, the virus can pass through the placenta from a pregnant woman to a fetus.³

Symptoms and Clinical Recognition

While many of the cases reported during the current outbreak have been among gay, bisexual or men who have sex with men, it is important to remember that anyone can get monkeypox, including children.

The incubation period after infection with monkeypox virus is approximately 1-2 weeks with a range of 5-21 days. Prodromal symptoms may occur and can include fever, malaise, headache and other generalized symptoms. Lymphadenopathy may also occur and can be generalized or localized.⁴ Shortly after the prodrome, a rash appears. Lesions typically begin to develop simultaneously and evolve together on any given part of the body. The evolution of the lesions progresses through four stages (macular, popular, vesicular, to pustular) before scabbing over and resolving. Illness duration typically lasts 2-4 weeks.

¹ <https://www.who.int/emergencies/situations/monkeypox-oubreak-2022>

² <https://www.cdc.gov/poxvirus/monkeypox/about.html>

³ <https://www.cdc.gov/poxvirus/monkeypox/transmission.html>

⁴ <https://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html>

Enanthem Through the Scab Stage

Stage	Stage Duration	Characteristics
Enanthem		<ul style="list-style-type: none">The first lesions to develop are on the tongue and in the mouth.
Macules	1-2 days	<ul style="list-style-type: none">Following the enanthem, a macular rash appears on the skin, starting on the face and spreading to the arms and legs and then to the hands and feet, including the palms and soles.The rash typically spreads to all parts of the body within 24 hours, becoming most concentrated on the face, arms, and legs (centrifugal distribution).
Papules	1-2 days	<ul style="list-style-type: none">By the third day of rash, lesions have progressed from macular (flat) to popular (raised).
Vesicles	1-2 days	<ul style="list-style-type: none">By the fourth to fifth day, lesions have become vesicular (raised and filled with clear fluid).
Pustules	5-7 days	<ul style="list-style-type: none">By the sixth to seventh day, lesions have become pustular (filled with opaque fluid), sharply raised, usually round and firm to the touch (deep seated).Lesions will develop a depression in the center (umbilication).The pustules will remain for approximately 5 to 7 days before beginning to crust.
Scabs	7-14 days	<ul style="list-style-type: none">By the end of the second week, pustules have crusted and scabbed over.Scabs will remain for about a week before beginning to fall off.

Pictures and more information are available at the following links:

- [Clinical Recognition | Monkeypox | Poxvirus | CDC](#)
- [What Clinicians Need to Know About Monkeypox in the United States and Other Countries](#)

Monkeypox can be difficult to distinguish from other infections that are more commonly encountered in clinical practice, such as secondary syphilis, herpes and varicella zoster. Features of many cases described in the current outbreak vary from historical accounts of monkeypox infection in several ways, including that a prodromal syndrome may not occur or may occur after the rash appears. Additionally, the lesions can appear on the mouth, genitals and perianal regions and may not disseminate to other parts of the body.⁵ Patients with lesions on the mouth may present with dysphagia or oropharyngeal abscesses. Patients with lesions on the genitals or perianal regions may present with balanitis, urethritis, dysuria, hematuria, proctitis with or without rectal bleeding or tenesmus. The lesions can ulcerate and pose a risk for secondary bacterial infection.

Although monkeypox is **not** considered a sexually transmitted infection (STI), it can spread during intimate physical contact between individuals. Patients with monkeypox may present to sexual health or HIV clinics for care.

Epidemiologic criteria can help inform the evaluation of a rash that might be monkeypox. A new characteristic rash, or a rash consistent with existing illnesses, can be confused with monkeypox (e.g., secondary syphilis, herpes and varicella

⁵ https://emergency.cdc.gov/coca/ppt/2022/052422_slides.pdf

zoster). However, a patient with at least one of the following epidemiologic criteria within 21 days of illness onset should be considered a Suspect Case.⁶

- Reports having contact with a person or people with a similar appearing rash or who received a diagnosis of confirmed or probable monkeypox; **or**
- Had close or intimate in-person contact with individuals in a social network experiencing monkeypox activity, this includes men who have sex with men (MSM) who meet partners through an online website, digital application (“app”) or social event (e.g., a bar or party); **or**
- Traveled outside the United States to a country with confirmed cases of monkeypox or where monkeypox virus is endemic; **or**
- Had contact with a dead or live wild animal or exotic pet that is an African endemic species or used a product derived from such animals (e.g., game meat, creams, lotions, powders, etc.).

A complete sexual and travel history during the past 21 days should be obtained for all patients presenting with symptoms concerning for monkeypox. This will assist in determining whether the patient meets any of the epidemiologic criteria described above. A thorough physical exam should include careful inspection of mucosal tissues, including an oral, genital and anal exam. Patients may not be aware of lesions in these or other areas (e.g., the ears). Anal lesions may be internal.

If there are no identified epidemiologic risk criteria for monkeypox infection in a suspected patient, other possible causes of rash in adults should be considered, including secondary syphilis, herpes and varicella zoster. In children without identified epidemiologic risk criteria for monkeypox, varicella zoster and molluscum contagiosum (MC) should be considered in the differential diagnosis. MC is an infection caused by a poxvirus (molluscum contagiosum virus) that is diagnosed more often in children than in adults. [MC infection](#) is usually a benign, mild skin disease characterized by lesions that may appear anywhere on the body. CDC’s non-variola virus test (which has been cleared by the Food and Drug Administration) that is used within the Laboratory Response Network laboratories and most commercial laboratories does not cross-react with molluscum contagiosum virus. In children and adolescents, as in adults, other potential etiologies of illness should be tested for in parallel with or before monkeypox virus testing, based on clinical presentation and epidemiologic criteria.⁷

As soon as monkeypox is suspected, clinicians should isolate the patient in a single-person room and immediately notify the facility’s Infection Prevention staff and consult the local public health authority (see the Reporting of Possible Cases section on page 5).

Testing

Patients with a new characteristic rash or who meet one or more of the [epidemiologic criteria](#) (listed above) and in which there is a high suspicion should be tested for monkeypox.⁸ Historically, sporadic accounts of patients co-infected with monkeypox virus and other infectious agents (e.g., varicella zoster, syphilis) have been reported, so patients with a characteristic rash should be considered for testing even if other tests are positive.

Testing at public health laboratories is recommended, however partnerships with commercial laboratories have increased testing capacity and access. Commercial labs offering *Orthopoxvirus* tests as of July 22, 2022, include:

- [Aegis Science](#) (order code 06575)
- [Labcorp](#) (order code 140230)
- [Mayo Clinic Laboratories](#)
- [Quest Diagnostics](#) (test code 12084)

⁶ <https://www.cdc.gov/poxvirus/monkeypox/clinicians/case-definition.html>

⁷ <https://emergency.cdc.gov/han/2022/han00471.asp>

⁸ <https://www.cdc.gov/poxvirus/monkeypox/clinicians/faq.html#Vaccines-and-Treatment>

- [Sonic Healthcare](#)

Testing at public health laboratories remains free. Commercial laboratory companies will bill private insurance, Medicaid or Medicare for all testing performed. Those who are underinsured or uninsured will receive a bill for that testing. National agencies continue to work to identify funding that would cover the cost of monkeypox testing regardless of the individual's coverage. Clinicians may find the relevant CPT code for monkeypox virus testing on each commercial laboratory's website.

Coordination with public health authorities is not required when ordering a monkeypox test from a commercial laboratory, however **all patients for whom testing is ordered must be reported to public health (see the Reporting of Possible Cases section on page 5)**. Coordination with public health authorities is required for testing through public health laboratories, including the [Nevada State Public Health Laboratory](#) and the Southern Nevada Public Health Laboratory.

Any laboratory that performs diagnostic testing for *Orthopoxvirus*, non-variola *Orthopoxvirus* or monkeypox virus should report test results (positive, negative, equivocal) to state, tribal, local or territorial health departments. **The results should be reported to the health department in the patient's jurisdiction of residence within 24 hours of testing.** This data will inform prevention measures, contribute to the understanding of this outbreak and assist in predicting increases in testing demand and planning for potential supply chain issues for reagents and other test materials.⁹

Specimen collection needs to occur at the health care facility (health care provider office, urgent care or any location where laboratory specimen collection is accessible and is performed with the use of proper PPE) and is not offered at commercial laboratory collection centers. Clinicians should collect suspected patient specimens at the time of visit rather than refer potential cases to other health care facilities or public health clinics for specimen collection. Staff performing specimen collection are strongly encouraged to thoroughly review [guidance from CDC](#) prior to collection. Local public health authorities can provide additional guidance if needed. Some of the major points regarding specimen collection include:

- PPE used by health care personnel should include gown, gloves, eye protection (e.g., goggles or face shield) and a NIOSH-approved particulate respirator with N95 filters or higher.
- Swabs should be made of a synthetic material such as polyester, nylon or Dacron. Cotton swabs should **not** be used for collection of monkeypox samples.
- The recommended specimen type is material collected from the surface of a lesion or crust from a healing lesion. Two swabs from each lesion should be collected, preferably from at least three lesions on different locations of the body or from lesions that differ in appearance. Swabs should each be placed in different containers.
- Lesions should be swabbed vigorously to collect adequate DNA. De-roofing of lesions prior to swabbing is not necessary. Swabbing may be a painful procedure for the patient.
- For some individuals, the lesions may not be overtly visible (such as within the oral cavity or within the rectum), therefore clinicians should perform a thorough evaluation including a full body skin, oral, genital and rectal examination to identify appropriate lesions for sampling.
- Different laboratories may vary in their specimen preparation requirements. Please contact the appropriate public health department or commercial laboratory to determine acceptable specimens.

Patients being tested for monkeypox should isolate immediately. **Before patients leave outpatient settings, inform them of the need to isolate away from others, including household members and pets, until all scabs have fallen off and new skin has formed.**

⁹ <https://emergency.cdc.gov/han/2022/han00471.asp>

Most laboratories offering testing as listed above are currently offering non-variola orthopoxvirus polymerase chain reaction (PCR) tests. A positive non-variola orthopoxvirus test meets criteria for a Probable Case of monkeypox in the current outbreak. At this time, patients with a positive non-variola orthopoxvirus PCR test should be considered to have monkeypox since this is currently the only circulating non-variola orthopoxvirus in the U.S. Clinical care and prevention precautions should begin based on the *Orthopoxvirus* test result and should not wait for any additional viral characterization testing that may be performed.

Specimen Shipment

Specimen collection, storage, and shipping of human specimens is subject to the Clinical Laboratory Improvements Amendment (CLIA) restrictions.

- The clinician or facility collecting a specimen for laboratory testing should confirm collection, storage, and shipment instructions with the specific laboratory to which it will be submitted prior to specimen collection. Specimens should be shipped as [Category B](#).

Reporting of Possible Cases

Patients that may have monkeypox or who might have been exposed to someone with monkeypox should be reported to public health authorities. Contact the appropriate health authority to report potential cases of monkeypox or for clinical consultation.

Health Department	County	Phone Number to Report
Southern Nevada Health District (SNHD)	Clark	(702) 759-1300 (24 hours)
Washoe County Health District (WCHD)	Washoe	(775) 328-2447 (24 hours)
Carson City Health and Human Services (CCHHS)	Carson City, Douglas and Lyon	(775) 887-2190 (24 hours)
Nevada Division of Public and Behavioral Health (DPBH)	All other counties	(775) 684-5911 (M-F 8:00am to 5:00pm) (775) 400-0333 (after hours)

Questions:

For updated guidance, please review the [DPBH Technical Bulletin web page](#). Email stateepi@health.nv.gov for other questions regarding monkeypox.



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