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SONIC HEALTHCARE  
USA

## Client Communication

# Monkeypox (MPX)

The information provided below is current as of July 5<sup>th</sup>, 2022.

Under the guidance of the US Center for Disease Control and Prevention (CDC), WestPac LABs is closely monitoring the outbreak caused by monkeypox virus (MPXV). To date, over 900 human infections have been confirmed in the US, involving over 28 states.

*Sonic Healthcare USA was selected by the CDC as one of 5 laboratories to develop a FDA-approved, high-complexity NAAT (RT-PCR) molecular assay to identify MPXV. Test development is actively underway, and once the validation is complete, we will update providers on additional testing guidelines.*

## Monkeypox: Interim Guidance from the CDC for Healthcare Providers

- Caused by Monkeypox virus
  - Two clades: Central African (CAC) & West African (WAC). WAC is less virulent, and it is the clade circulating in the 2022 US outbreak.
  - *Orthopox* genus, which includes variola/smallpox, cowpox. MPXV is NOT related to varicella/chickenpox/shingles.
  - Demonstrates extraordinary resistance to drying, heat, and pH, which leads to **environmental persistence**. Materials with MPXV may remain infectious for months to years.
- Incubation 6-13 days, up to 21 days.
- Signs/Symptoms
  - Fever, headache, **swollen lymph nodes** (which may differentiate it from smallpox), respiratory symptoms, and GI symptoms, including diarrhea.
  - Characteristic Rash - See photos and complete description, below.
    - May look like pimple or blister.
    - Appears on face, inside of mouth, genitals, and other body parts.
- Laboratory findings – leukocytosis, elevated AST & ALT, low BUN, low albumin.
- Differential diagnosis - Smallpox, chickenpox/shingles, measles, bacterial skin infections, scabies, medication allergies, HSV, and syphilis.
- Spread
  - Direct contact with the rash, respiratory secretions during prolonged face to face contact, intimate contact, fomites, placental transfer, animals handling.
  - Possible for up to several weeks.
- Prevention
  - Avoid contact, good hygiene, PPE.
  - Vaccine – JYNNEOS/Imvanex: inactive virus, FDA approved.



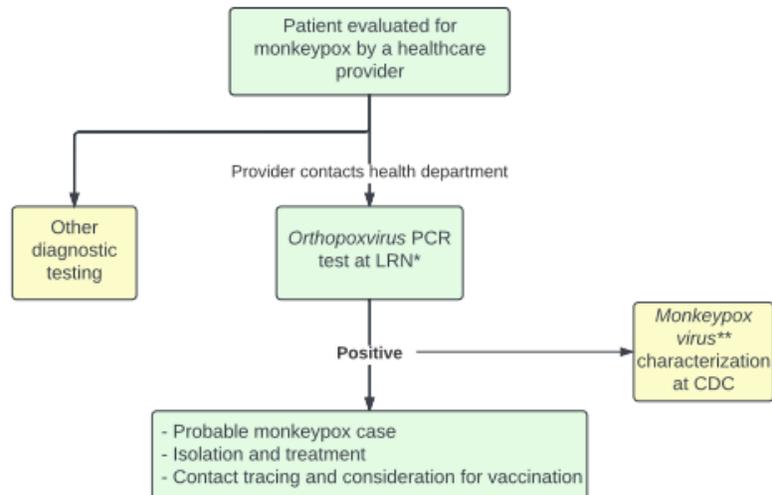
## Client Communication

- Complications – bacterial infection, sepsis, dehydration, diarrhea, encephalitis.
- Treatment – For select cases, smallpox anti-viral (TPOXX/tecovirimat) may be indicated, especially for highly vulnerable populations.

### Diagnostic/Laboratory Testing Guidelines

- Collect **at least two swabs** from the same lesion.
- Swab or brush lesion **vigorously** with two separate sterile swabs. Use a sterile nylon, polyester, or Dacron swab with a plastic, wood, or thin aluminum shaft. Do not use other types of swabs.
- If possible, sample paired specimens from multiple lesions on different parts of the body and with differing appearances. CDC suggests 2-3 lesions total.
- Place swabs in individual sterile containers. CDC can now accept the following specimens:
  - Dry lesion swab
  - Lesion swabs in viral transport media (VTM)
  - Lesion crusts
- Refrigerate (2–8°C) or freeze (-20°C or lower) specimens within an hour after collection.
- The laboratory must receive lesion swabs in VTM and lesion crusts within 7 days of specimen collection.
- Specimens that are greater than 8°C upon receipt will be rejected. Ship on dry ice as category B.
- Send all required material to:
  - California Department of Health, unless authorized to send them directly to CDC.
  - Alternatively, providers may send specimens to WestPac Labs, and the material will be forwarded for MPXV testing at California Department of Health.

Diagnostic Process for Monkeypox Virus Testing



\*PCR - polymerase chain reaction; LRN - laboratory response network

\*\*Monkeypox is a member of the orthopox group of viruses.

**Important Links and Contacts** | [Information for Laboratory Personnel](#) | [Preparation and Collection of Specimens](#) | [Emergency Operations Center: 770.488.7100 \(Available 24/7\)](#) | LRN contact: Use the 'Contact Us' feature on the LRN website, Or [LRN@cdc.gov](mailto:LRN@cdc.gov) | [Public Health contact list to pursue LRN lab testing](#)

## Criteria to Guide Evaluation of Monkeypox Cases

	Clinical Features		Epidemiological Risk
Suspect Case	New characteristic rash (see complete description, below)	OR	Meets one of the epidemiological criteria and has a high clinical suspicion for monkeypox. See below.
Probable Case	No suspicion of other recent <i>Orthopoxvirus</i> exposure (e.g., <i>Vaccinia virus</i> in ACAM2000 vaccination)	And	Demonstration of the presence of orthopoxvirus DNA
Confirmed Case	Demonstration of the presence of <i>Monkeypox virus</i> DNA by polymerase chain reaction testing or Next-Generation sequencing of a clinical specimen	OR	Demonstration of <i>Monkeypox virus</i> in culture from a clinical specimen

- Epidemiologic Criteria - Within 21 days of illness onset:
  - 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 US 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.)
- Exclusion Criteria - A case may be excluded as a suspect, probable, or confirmed case if:
  - An alternative diagnosis\* can fully explain the illness **OR**
  - An individual with symptoms consistent with monkeypox does not develop a rash within 5 days of illness onset **OR**
  - A case where high-quality specimens do not demonstrate the presence of *Orthopoxvirus* or *Monkeypox virus* or antibodies to orthopoxvirus
- Characteristic Rash
  - Deep-seated and well-circumscribed lesions, often with central umbilication.
  - Lesion progression through specific sequential stages—macules, papules, vesicles, pustules, and scabs.
  - May sometimes be confused with other diseases that are more commonly encountered in clinical practice (e.g., secondary syphilis, herpes, and varicella zoster).
  - 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.

## Client Communication



The outbreak caused by MPXV is rapidly evolving, and we will continue to monitor the situation and update you as new information becomes available.

### References:

1. Case Definitions† for Use in the 2022 Monkeypox Response. Centers for Disease Control and Prevention website. Accessed June 2022. <https://www.cdc.gov/poxvirus/monkeypox/clinicians/case-definition.html>
2. U.S. Monkeypox Outbreak 2022: Situation Summary. Centers for Disease Control and Prevention website. Accessed June 2022.
3. Brown K, Leggat PA. Human Monkeypox: Current State of Knowledge and Implications for the Future. *Trop Med Infect Dis.* 2016;1(1):8. Published 2016 Dec 20. doi:10.3390/tropicalmed1010008