

Mpox



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# Case Definitions for Use in the 2022 Mpox Response

Updated November 9, 2023

## Suspect Case

- New characteristic rash\* **OR**
- Meets one of the epidemiologic criteria and has a high clinical suspicion for mpox

## Probable Case

- No suspicion of other recent *Orthopoxvirus* exposure (e.g., *Vaccinia virus* in ACAM2000 vaccination) **AND** demonstration of the presence of
  - *Orthopoxvirus* DNA by polymerase chain reaction of a clinical specimen **OR**
  - *Orthopoxvirus* using immunohistochemical or electron microscopy testing methods **OR**
  - Demonstration of detectable levels of anti-orthopoxvirus IgM antibody during the period of 4 to 56 days after rash onset

### For Health Departments

Please see CDC's [Case Reporting Recommendations for Health Departments](#) for more information about data collection for case reporting and specimen collection.

## Confirmed Case

- Demonstration of the presence of monkeypox virus (MPXV) DNA by polymerase chain reaction testing or Next-Generation sequencing of a clinical specimen **OR** isolation of MPXV 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 mpox **OR**
- Had close or intimate in-person contact with individuals in a social network experiencing mpox 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 mpox or where MPXV 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 mpox 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 MPXV or antibodies to orthopoxvirus

## Case Definition of Mpox Reinfection

Mpox reinfection occurs when a person who was classified as a confirmed or probable mpox case, has a recurrence of mpox symptoms after complete resolution† of the initial confirmed or probable MPXV infection.

- Suspect Mpox Reinfection Case:
  - A case that fits the clinical description of mpox reinfection and meets any of the following criteria:
    - New rash\*, **OR**
    - Meets one of the epidemiologic criteria and has a high clinical suspicion for mpox
- Probable Mpox Reinfection Case:
  - A case that meets the criteria for a suspect mpox reinfection case **AND** demonstrates one of the following from a patient specimen:
    - Orthopoxvirus or MPXV DNA by polymerase chain reaction of a clinical specimen **OR**
    - Orthopoxvirus using immunohistochemical or electron microscopy testing methods **OR**
    - Demonstrable increase in anti-Orthopoxvirus IgG antibodies in paired serum samples collected within 3 days of symptom onset and 7-14 days after symptom onset, for patients with no prior mpox/smallpox vaccination or vaccinated  $\geq 180$  days prior to symptom onset
- Confirmed Mpox Reinfection Case:
  - A case that meets criteria for a probable mpox reinfection case **AND** has significant single nucleotide polymorphisms (SNPs) or genetic variation between MPXV genetic sequences‡ from clinical specimens obtained from two or more episodes of MPXV infection separated by complete resolution of symptoms within the same individual.

## Considerations for Mpox Reinfection

- Persistent MPXV infection is defined as MPXV infection without clinical improvement or resolution of symptoms.
- Relapsed MPXV infection is defined as MPXV infection that has improved, but not completely resolved, followed by clinical worsening or new mpox symptoms.
- Patients with severe immunodeficiency such as in people living with HIV with CD4 counts  $< 200$  can be at risk for persistent and/or relapsed MPXV infections.
- Patients may develop symptoms caused by other infections during MPXV infection or after their initial infection resolves.

\* The characteristic rash associated with mpox lesions involve the following: deep-seated and well-circumscribed lesions, often with central umbilication; and lesion progression through specific sequential stages—macules, papules, vesicles, pustules, and scabs.; this can 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 mpox 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. People with severe immunodeficiency (e.g., advanced HIV) may have skin lesions that are necrotic, diffuse, and plaque-like.

† Complete resolution is defined as disappearance of all clinical symptoms of mpox including fever, chills, lymphadenopathy, skin rashes, lesions, or other skin disturbances caused by MPXV, and any other persistent symptoms associated with MPXV infection.

‡ If there are no substantial single nucleotide polymorphisms (SNPs) or significant genetic variation between MPXV sequences from clinical specimens from two or more episodes of MPXV infection obtained from the same individual then the case should be classified as a probable case.

# References

Adler et al., 2022; Altindis et al., 2022; *Clinical Recognition: Key Characteristics for Identifying Monkeypox*, 2022; Lu et al., 2022; Lum et al., 2022; Petersen et al., 2019; *Principles of Epidemiology in Public Health Practice*.

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Last Reviewed: November 9, 2023