

**GUIDELINES AND RESOURCES****Updated Interim Case Definition for Human Monkeypox,  
January 2004**

The previous case definition (published July 2, 2003) has been updated as follows:

- Exclusion criteria have been revised
- Probable case classification has been edited

**Clinical Criteria**

Rash (macular, papular, vesicular, or pustular; generalized or localized; discrete or confluent)

Fever (subjective or measured temperature of  $\geq 99.3^{\circ}$  F [ $\geq 37.4^{\circ}$  C])

Other signs and symptoms

- Chills and/or sweats
- Headache
- Backache
- Lymphadenopathy
- Sore throat
- Cough
- Shortness of breath

**Epidemiologic Criteria**

- Exposure<sup>1</sup> to an exotic or wild mammalian pet<sup>2</sup> obtained on or after April 15, 2003, with clinical signs of illness (e.g., conjunctivitis, respiratory symptoms, and/or rash)
- Exposure<sup>1</sup> to an exotic or wild mammalian pet<sup>2</sup> with or without clinical signs of illness that has been in contact with either a mammalian pet<sup>3</sup> or a human with monkeypox
- Exposure<sup>4</sup> to a suspect, probable, or confirmed human case of monkeypox

**Laboratory Criteria**

- Isolation of monkeypox virus in culture
- Demonstration of monkeypox virus DNA by polymerase chain reaction testing of a clinical specimen
- Demonstration of virus morphologically consistent with an orthopoxvirus by electron microscopy in the absence of exposure to another orthopoxvirus
- Demonstration of presence of orthopoxvirus in tissue using immunohistochemical testing methods in the absence of exposure to another orthopoxvirus.

## Updated Interim Case Definition for Human Monkeypox, January 2004 (continued from previous page)

### Case Classification

#### Suspect Case

- Meets one of the epidemiologic criteria

AND

- Fever or unexplained rash AND two or more other signs or symptoms with onset of first sign or symptom <21 days after last exposure meeting epidemiologic criteria

#### Probable Case

- Meets one of the epidemiologic criteria

AND

- Fever

AND

- Vesicular-pustular rash with onset of first sign or symptom <21 days after last exposure meeting epidemiologic criteria

OR

- If rash is present but the type is not described, demonstrates elevated levels of IgM antibodies reactive with orthopox virus between at least days 7 to 56 after rash onset<sup>5</sup>

#### Confirmed Case

- Meets one of the laboratory criteria

### Exclusion Criteria A case may be excluded as a suspect or probable monkeypox case if:

- An alternative diagnosis can fully explain the illness<sup>6</sup> OR
- The case was reported on the basis of primary or secondary exposure to an exotic or wild mammalian pet or a human (see epidemiologic criteria) subsequently determined not to have monkeypox, provided other possible epidemiologic exposure criteria are not present OR
- A case without a rash does not develop a rash within 10 days of onset of clinical symptoms consistent with monkeypox<sup>7</sup>.
- The case is determined to be negative for non-variola generic orthopoxvirus by polymerase chain reaction testing of a well sampled rash lesion by the approved Laboratory Response Network (LRN) protocol.
- The case is determined to have undetectable levels of IgM antibody during the period of 7-56 days after rash onset.<sup>8</sup>

## Updated Interim Case Definition for Human Monkeypox, January 2004 (continued from previous page)

<sup>1</sup> Includes living in a household, petting or handling, or visiting a pet holding facility (e.g., pet store, veterinary clinic, pet distributor)

<sup>2</sup> Includes prairie dogs, Gambian giant rats, and rope squirrels. Exposure to other exotic or non-exotic mammalian pets will be considered on a case-by-case basis; assessment should include the likelihood of contact with a mammal with monkeypox and the compatibility of clinical illness with monkeypox

<sup>3</sup> Includes living in a household, or originating from the same pet holding facility as another animal with monkeypox

<sup>4</sup> Includes skin-to-skin or face-to-face contact

<sup>5</sup> Levels of circulating IgM antibody reactive with orthopoxvirus antigen are determined by ELISA and reported as optical density (OD) values. Values greater than 3 standard deviations above the mean OD of 6 independent negative controls are considered 'elevated'. Serial specimens are not required. IgM antibody levels may be elevated in persons who have been recently (within one year) vaccinated for smallpox.

<sup>6</sup> Factors that might be considered in assigning alternate diagnoses include the strength of the epidemiologic exposure criteria for monkeypox, the specificity of the diagnostic test, and the compatibility of the clinical presentation and course of illness for the alternative diagnosis.

<sup>7</sup> If possible, obtain convalescent-phase serum specimen from these patients. See specimen collection guidelines ([www.cdc.gov/ncidod/monkeypox/lab.htm](http://www.cdc.gov/ncidod/monkeypox/lab.htm)) for details on collecting serum for convalescence evaluation.

<sup>8</sup> The optimal timing of specimen collection for determination of IgM levels is between days 7 and 56 post-rash onset. However, elevated levels of IgM antibodies may be detectable prior to day 7, or after day 56, post rash onset, therefore a negative result during this phase should not be interpreted to indicate an absence of monkeypox infection.

For more information, visit [www.cdc.gov/ncidod/monkeypox](http://www.cdc.gov/ncidod/monkeypox) or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

April 4, 2006

Page 3 of 3