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Technical Bulletin

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Topic: Infection Prevention and Control of Monkeypox in Health Care Settings

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To: Health Care Providers, Hospitals, Laboratories and Local Public Health Authorities

Background

According to the U.S. Centers for Disease Control and Prevention (CDC) monkeypox is a rare disease that is caused by infection with monkeypox virus. Monkeypox virus belongs to the *Orthopoxvirus* genus, which also includes variola virus (which causes smallpox), vaccinia virus (used in the smallpox vaccine) and the cowpox virus. Historically, monkeypox has been very rare in the United States, however since May 2022, 201 monkeypox cases have been identified in 25 states and the District of Columbia. More than 4,100 cases have been identified in 47 countries.

Clinicians should be alert to patients presenting with a new characteristic rash or if the patient meets one of the [epidemiologic criteria](#) and there is a high clinical suspicion for monkeypox. The rash associated with monkeypox can be confused with other rashes encountered in clinical practice, including herpes, syphilis and varicella. Patients co-infected with monkeypox virus and other infectious agents have been reported. Clinicians should therefore have monkeypox on their differential diagnosis when presented with a sexually transmitted infection (STI)-associated or STI-like rash, even if it is localized and not (yet) diffuse. Please refer to the following CDC case definitions.¹

Suspect Case

- New characteristic rash*; **OR**
- Meets one of the epidemiologic criteria and has a high clinical suspicion† for monkeypox.

Probable Case

- No suspicion of other recent *Orthopoxvirus* exposure **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.

Confirmed Case

- Demonstration of the presence of monkeypox virus DNA by polymerase chain reaction testing; **or** Next-Generation sequencing of a clinical specimen **OR** isolation of monkeypox virus 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 rash or who received a diagnosis of confirmed or probable monkeypox; **OR**

¹ <https://www.cdc.gov/poxvirus/monkeypox/clinicians/case-definition.html>

- 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.).

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

†Clinical suspicion may exist if presentation is consistent with illnesses confused with monkeypox (e.g., secondary syphilis, herpes and varicella zoster).

*The characteristic rash associated with monkeypox 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 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.

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Infection Prevention and Control of Monkeypox in Health Care Settings²

Human-to-human transmission of monkeypox virus occurs by direct contact with lesion material or from exposure to respiratory secretions. Reports of human-to-human transmission describe close contact with an infectious person. Transmission in health care settings has been rarely described.

Infection prevention and control recommendations for health care settings are provided in the [Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings](#). Recommendations and practices described in this 2007 guideline are intended to be used when providing care for any patient in a health care setting, including those with monkeypox infection. Additional supporting infection prevention and control information is provided below.

Practice of the following precautions should continue until a decision has been made in consultation with the local or state health department to discontinue precautions.

² <https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html>

- [Standard Precautions](#) should be applied for all patient care, including for patients with suspected monkeypox.
- If a patient seeking care is suspected to have monkeypox, infection prevention and control personnel should be notified immediately.
- Avoid activities that may resuspend dried materials from lesions (e.g., use of portable fans, dry dusting, sweeping or vacuuming).

Patient Placement

- A patient with suspected or confirmed monkeypox infection should be placed in a single-person room and the door should be kept closed (if safe to do so); special air handling is not required.
- The patient should have a dedicated bathroom.
- Transport and movement of the patient outside of the room should be limited to medically essential purposes.
 - If the patient must be transported outside of their room, they should use well-fitting source control (a well-fitting medical mask) and have any exposed skin lesions covered with a sheet or gown.
- Intubation and extubation, and any other procedures likely to spread oral secretions, should be performed in an airborne infection isolation room.

Personal Protective Equipment (PPE)

- PPE used by health care personnel who enter the patient’s room should include:
 - Gown;
 - Gloves;
 - Eye protection (i.e., goggles or a face shield that covers the front and sides of face); **and** National Institute for Occupational Safety and Health (NIOSH)approved particulate respirator equipped with N95 filters or higher

Waste Management

- Waste management (i.e., handling, storage, treatment and disposal of soiled PPE, patient dressings, etc.) should be performed in accordance with U.S. Department of Transportation (DOT) Hazardous Materials Regulations (HMR; 49 CFR, Parts 171-180.)
- Required waste management practices and category designation can differ depending on the monkeypox virus clade (strain). See the [DOT web page linked here](#) for more information. Facilities should also comply with [state and local regulations](#) for handling, storage, treatment and disposal of waste (for information for Nevada, please visit: <https://www.envcap.org/srl/rmw/nv-rmw.html>).

Environmental Infection Control

- Standard cleaning and disinfection procedures should be performed using an EPA-registered hospital-grade disinfectant with an emerging viral pathogen claim. Products with [Emerging Viral Pathogens claims](#) may be found on EPA’s [List Q](#). Follow the manufacturer’s directions for concentration, contact time and care and handling.
- Soiled laundry (e.g., bedding, towels, personal clothing) should be handled in accordance with recommended standard practices³, avoiding contact with lesion material that may be present on the laundry. **Soiled laundry should be gently and promptly contained in an appropriate laundry bag and never be shaken or handled in manner that may disperse infectious material.**
- Avoid activities such as dry dusting, sweeping, or vacuuming. Wet cleaning methods are preferred.
- Management of food service items should also be performed in accordance with routine procedures.
- Detailed information on environmental infection control in health care settings can be found in CDC’s ([Guidelines for Environmental Infection Control in Health-Care Facilities](#)) and ([Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings](#) [section IV.F. Care of the environment]).

Duration of Precautions

³ <https://www.cdc.gov/infectioncontrol/pdf/guidelines/environmental-guidelines-P.pdf>

- Decisions regarding discontinuation of isolation precautions in a health care facility should be made in consultation with the local or state health department.
- Isolation precautions should be maintained until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath.

For more information:

- [U.S. Monkeypox Outbreak 2022: Situation Summary](#)
- [Monkeypox Information for Healthcare Professionals](#)
- [Clinical Recognition of Monkeypox](#)
- [Monkeypox Clinical FAQs](#)
- [Monitoring People Who Have Been Exposed to Monkeypox](#)

Questions:

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



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