

Monkeypox

About the Guideline

- In June of 2022, the World Health Organization (WHO) developed rapid interim guidelines for the management, and infection prevention and control (IPC) of monkeypox (MPX).
- The target audience includes clinicians, health facility managers, health workers and IPC practitioners.

Overview

- The current MPX outbreak began in the spring of 2022 and was designated a public health emergency of international concern on July 23, 2022.
- In the current outbreak, transmission appears to be primarily through close physical contact.
- Lesions may not be disseminated and may be confined to only a single lesion or a few lesions; often occur in the genital and anorectal areas or in the mouth. They don't always appear on palms and soles.
- The incubation period is usually three to 17 days.
- Prior vaccination to smallpox minimizes the risk of severe complications and sequelae.
- Signs and symptoms include fever, headache, back pain, muscles aches, fatigue and lymphadenopathy, followed by a rash that presents in sequential stages lasting two to four weeks:
 - Macules
 - Papules
 - Vesicles
 - Pustules
 - Crusting over
 - Desquamation

Key Clinical Considerations

Screening and Triage

- Screen and triage all persons who present with a rash and fever or lymphadenopathy.
- Tell patient exposed to MPX, who doesn't have signs and symptoms, to continue their daily activities, but to monitor for signs and symptoms for 21 days.
- Determine risk factors and presence of severe disease.
 - High risk groups
 - Children
 - Pregnant persons
 - Immunosuppressed, including those with advanced HIV
 - Patients with acute or chronic skin conditions
 - Signs and symptoms of complications
 - Nausea and vomiting
 - Painful cervical lymphadenopathy causing dysphagia

- Poor oral intake
- Eye pain or vision abnormalities
- Hepatomegaly
- Sepsis
- Dehydration
- Respiratory distress/pneumonia
- Confusion
- Laboratory abnormalities
 - Elevated AST and/or ALT
 - Low BUN
 - Low albumin
 - Elevated WBC
 - Low platelet count
- Test suspected patients for MPX.

Mild or Uncomplicated Monkeypox

- Instruct patients with suspected or confirmed MPX with mild, uncomplicated disease and not at high risk for complications to isolate at home for the duration of the infectious period.
- Conduct a home assessment to ensure the home environment is suitable for the isolation and that IPC measures can be maintained.
- Tell the patient to isolate in an area separate from other household members and away from shared areas of the home.
- Tell patient that isolation practices should be followed for five days after the development of any new sign or symptom.
- Tell patient to use caution when handling and cleaning linens, household surfaces and during waste disposal.
- Inform patient that antipyretics can be used for fever and analgesia for pain.
- Teach the patient to rinse the mouth with salt water at least four times per day to soothe oral lesions; consider using oral antiseptics or local anesthetics.
- Tell patient that warm sitz baths and/or topical lidocaine may be used to relieve genital or anorectal lesions.
- Assess nutritional status and encourage adequate nutrition and appropriate rehydration.
- Counsel patients about signs and symptoms of complications that should prompt urgent care.
- Administer conservative treatment of rash lesions to relieve discomfort, speed healing and prevent complications, such as secondary infections or exfoliation.
- Tell patient to resist scratching, and to keep lesions clean and dry. The rash should not be covered.
- Do not use antibiotic therapy or prophylaxis in patients with uncomplicated MPX; monitor lesions for secondary bacterial infection and if they occur, treat with antibiotics with activity against normal skin flora, including *Streptococcus pyogenes* and methicillin-sensitive *Staphylococcus aureus* (MSSA).

Mental Health Care

- Promptly identify and assess for anxiety and depressive symptoms; institute basic psychosocial support strategies and first-line interventions for the management of new anxiety and depressive symptoms. These include providing nonintrusive, practical care and support; assessing needs and concerns; addressing basic needs such as food, water, and information; provide comfort; and refer as needed.
- Use psychosocial support strategies as first-line interventions for management of sleep problems in the context of acute stress.
 - Teach the patient about sleep hygiene – avoiding caffeine, nicotine and alcohol before bedtime; and stress management techniques.

Treatment

- Tecovirimat (TPOXX, ST-246)
 - Antiviral approved to treat smallpox
 - Non-research expanded access Investigational New Drug (EA-IND) to treat MPX in adults and children ([CDC Guidance](#), [Obtaining and Using Tecovirimat](#))
 - Available as pill or injection
 - Capsule can be opened, and medicine mixed with semisolid food for children less than 28.6 pounds
- Vaccinia Immune Globulin Intravenous (VIGIV)
 - Indicated to treat vaccinia vaccine complications
 - Expanded access protocol to treat orthopoxviruses during outbreak
- Cidofovir (Vistide)
 - Antiviral for treatment of cytomegalovirus retinitis in patients with AIDS
 - Expanded access for orthopoxviruses during outbreak
 - Contraindicated in pregnancy or breastfeeding
- Brincidofovir (CMX001, Tembexa)
 - Antiviral for the treatment of smallpox
 - Contraindicated in pregnancy or breastfeeding
 - CDC is currently developing an EA-IND to help facilitate its use for MPX

Vaccines

- JYNNEOS
 - Approved for the prevention of monkeypox and smallpox
 - [CDC Interim Guidance](#)
- ACAM2000
 - Approved for immunization against smallpox; available for use against monkeypox under EA-IND protocol
 - Contraindicated in pregnancy or breastfeeding
 - [Medication Guide](#)

Infection Prevention and Control at Health Facilities

- Place patient in a well-ventilated, single patient room with dedicated bathroom or toilet.

- Implement contact and droplet precautions for any suspected or confirmed patient with MPX. Implement airborne precautions if varicella zoster virus is suspected and until it is excluded.
- For confirmed MPX infection, use respirators.
- Implement airborne precautions if aerosol-generating procedures are performed.
- Clean and disinfect areas within the health care facility frequently used by the patient or where patient care activities occur; clean and disinfect patient care equipment per guidelines.
- Collect and handle linens, hospital gowns, towels and any other fabric carefully.
- Treat all bodily fluids and solid waste of patients with MPX as infectious waste.
- Limit visitors.
 - Visitors should have no direct contact with patient with MPX.
 - Institute measures to support patient interaction with family and visitors.

Sexually Active Populations

- Advise patients to abstain from sex until all skin lesions have crusted, the scabs have fallen off and a fresh layer of skin has formed underneath.
- Consider and assess for coinfection with other sexually transmitted infections.
- Encourage consistent condom use during sexual activity for 12 weeks after recovery.

During and After Pregnancy

- Monitor pregnant or recently pregnant persons with mild or uncomplicated MPX; admit those with severe or complicated disease to optimize supportive care or interventions to improve maternal and fetal survival.
- Provide access to respectful, skilled care, as well as mental health and psychosocial support. Screen birth companion; if companion has suspected or confirmed MPX, arrange for alternative, healthy companion.
- Individualize mode of birth based on obstetric indications and the patient's preferences.
- Encourage those who have recovered from MPX to receive routine care, as appropriate.

Infants and Young Children

- Monitor newborn infants closely for evidence of potential congenital or perinatal exposure or infection, or exposure through close contact.
- Fully vaccinate children exposed to MPX according to the immunization schedule and have their vaccinations up to date.
- Pay particular attention to keeping lesions covered and preventing children from scratching lesions or touching their eyes, which can result in auto-inoculation and more severe illness.

Infant Feeding

- Assess infant feeding practices, including breastfeeding, on a case-by-case basis, considering the general physical status of the parent and severity of disease, which could impact the risk of transmission.
 - Direct contact between a patient in isolation for MPX and their newborn is not advised.
 - Breastfeeding should be delayed until criteria for discontinuing isolation have been met.

High-Risk Patients and Those with Complications or Severe Monkeypox

- Admit patients at high risk for complications (i.e., young children, pregnant persons and those who are immunosuppressed) or those with severe or complicated MPX for monitoring and care.
- Manage patients who develop complications or severe disease with optimized supportive care interventions.
 - Skin exfoliation
 - Necrotizing soft tissue infection
 - Pyomyositis
 - Cervical adenopathy
 - Ocular lesions
 - Pneumonia
 - Acute respiratory distress syndrome (ARDS)
 - Severe dehydration
 - Sepsis and septic shock
 - Encephalitis
 - Nutritional considerations

After Acute Infection

- Counsel patients about access to follow-up care; tell them to monitor for any persistent, new or changing symptoms and to seek medical care as needed.

Deceased Patients

- Use appropriate IPC measures when handling human remains of deceased individuals with MPX.

Exposed Health Workers

- Ensure an assessment and management plan for staff with occupational exposure to MPX.

References:

Centers for Disease Control and Prevention. (2022, August 23). Monkeypox: Clinical Guidance.

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

World Health Organization. (2022, June 10). Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance. <https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1>