

Mpox

BASIC EPIDEMIOLOGY

Infectious Agent

The infectious agent of mpox (formerly referred to as monkeypox) is the monkeypox virus (MPXV), which is a member of the *Orthopoxvirus* genus in the family *Poxviridae*. There are two distinct genetic clades of the monkeypox virus: Clade I, formerly the Central African (Congo Basin) clade, and Clade II, formerly the West African clade. The group of variants mainly circulating in the 2022 global outbreak is subclade IIb. The geographical division between the two clades has so far been in Cameroon, the only country where both virus clades have been found.

Transmission

Monkeypox virus can spread when a person comes into contact with the virus from an infected person, infected animal, or materials contaminated with the virus. The virus can also cross the placenta from the mother to the fetus.

Person-to-person transmission of mpox is primarily through direct contact with infectious lesions, scabs, or body fluids. However, prolonged exposure to an infected person's respiratory secretions can also transmit the virus. At this time, it is not known if mpox can spread through semen or vaginal fluids, but viral DNA has been detected in semen.

Examples of activities that may spread mpox from one person to another are wrestling, cuddling, kissing, or intimate sexual contact, including oral, anal, and vaginal sex, massage, mutual masturbation, or touching fabrics and objects that a person with mpox used during sex.

Healthcare personnel (HCP) can become exposed to monkeypox virus while caring for infected patients. Unprotected contact with a patient's skin, lesions, or body fluids (e.g., ungloved contact; splashing of patient's saliva into eyes or mouth) could expose a person to monkeypox virus. Being in a patient's room or within six feet of a patient during aerosolizing procedures (e.g., shaking used linens; intubation or extubation; contact with oral secretions or skin lesions) without the use of eye protection, a respirator or other personal protective equipment (PPE) can lead to exposure. Correct and consistent use of PPE when caring for a patient with mpox infection is highly protective and prevents transmission to healthcare workers. However, unrecognized errors during the use of PPE (e.g., self-contaminating when removing contaminated PPE) may create opportunities for transmission.

Prior to the 2022 outbreak, mpox had been reported in people in several central and western African countries. Previously, almost all mpox cases in people outside of Africa were linked to international travel to countries where the disease commonly occurs or through imported animals.

Animal-to-human (zoonotic) transmission can occur from direct contact with the blood, bodily fluids, or cutaneous or mucosal lesions of infected animals. Monkeypox virus may spread from animals to people through the bite or scratch of an infected animal, preparing or eating undercooked meat, or using or consuming products made from infected animals. It is unknown what animal maintains the virus in nature, although African rodents are suspected of being involved in mpox transmission to people. In Africa, evidence of monkeypox virus infection has been found in many animals including rope squirrels, tree squirrels, Gambian pouched rats, dormice, different species of monkeys and others. A 2003 outbreak of mpox in the United States that caused 35 confirmed human cases in six states was associated with exposure to prairie dogs housed with small mammals imported from Africa by a Texas animal distributor. There has been some evidence of sick people infecting animals (e.g., dogs) with monkeypox virus, and this is currently an area of study.

Incubation Period

The incubation period (time from infection to symptoms) for mpox is usually 7–14 days but can range

from 3–21 days. Empirical data from the 2022 outbreak continues to refine our understanding of the incubation period.

Communicability

People with mpox are not infectious until symptoms begin. They are infectious for the duration of the illness, which is typically 2–4 weeks, and should avoid contact with other people and animals until all the scabs have fallen off and a fresh layer of intact skin has formed. Asymptomatic infections have been detected and the public health significance is under investigation. At this time, it is not known if mpox can spread through semen or vaginal fluids, but viral DNA has been detected in semen.

Clinical Illness

Mpox is an acute illness, usually with sudden onset of initial symptoms of fever, headache, muscle aches, backache, swollen lymph nodes (lymphadenopathy), chills, and exhaustion. Clinically, the disease closely resembles smallpox, but lymphadenopathy is a more prominent feature in the early stage of mpox disease. It is important to note that these prodromal symptoms can also occur after the rash or not at all.

Shortly afterwards, usually within 1–4 days, a rash develops, typically starting on the face and spreading to other parts of the body. Others may develop a rash as their first symptom, and rash may be the only symptom for others. Lesions typically begin to form simultaneously and evolve together on any given part of the body as they progress from macules → papules → vesicles → pustules → scabs or crusts. Characteristic lesions are deep-seated and well-circumscribed lesions and often have a central umbilication. Mpox may not always appear the same way; it could be clinically confused with chickenpox; shingles; molluscum contagiosum; hand, foot, and mouth disease; or a sexually transmitted infection (STI) like syphilis or herpes; as well as other infections. There have also been accounts of patients co-infected with monkeypox virus and other infectious agents (e.g., HIV or other STIs, or varicella-zoster virus). The illness typically lasts 2–4 weeks. If someone is immunocompromised, then the rash and illness could present differently.

Since the re-emergence of mpox in 2022, there have been some differences in clinical presentation of the disease. Some of these differences include: lesions often occur in the genital and anorectal areas or in the mouth, the rash is not always disseminated across many sites on the body, the rash may be confined to only a few lesions or even a single lesion, and the rash does not always appear on palms and soles. Lesions typically develop simultaneously and evolve together on any given part of the body. Rectal symptoms, such as purulent or bloody stools, rectal pain, or rectal bleeding, have been frequently reported in the current outbreak. Lesions are often described as painful until the healing phase when they become itchy (crusts). Fever and other prodromal symptoms, such as chills, lymphadenopathy, malaise, myalgias, or headache, can occur before rash but may occur after rash onset or not be present at all, and respiratory symptoms (e.g., sore throat, nasal congestion, or cough) have also been reported. The progression of lesions is still the same (macules → papules → vesicles → pustules → scabs or crusts).

Many people infected with monkeypox virus have a mild, self-limiting disease course in the absence of specific therapy. However, the prognosis for mpox depends on multiple factors, such as previous vaccination status, initial health status, concurrent illnesses, and comorbidities, among others. People at high risk of severe disease are those that are immunocompromised, children (particularly less than 8 years of age), people with a presence or history of atopic dermatitis or persons with other active exfoliative skin conditions (e.g., eczema, burns, impetigo, varicella zoster virus infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease [keratosis follicularis]), pregnant or breastfeeding women, and people with one or more complications (e.g., secondary bacterial skin infection; gastroenteritis with severe nausea/vomiting, diarrhea, or dehydration; bronchopneumonia; concurrent disease; or other comorbidities). Aberrant infections that include accidental implantation in eyes, mouth, or other anatomical areas where monkeypox virus infection might constitute a special hazard (e.g., the genitals or anus). Mpox can also be painful and may require hospitalization for pain management. Clinicians

should closely monitor those with severe mpox or those whose infection does not resolve within the normal 2-4 weeks.

Clade II (formerly the West African virus genetic group or clade), which is the clade involved in the re-emergence of the virus in 2022, is associated with milder disease and fewer deaths than Clade I (formerly the Congo Basin virus clade). These infections are rarely fatal (usually less than 1%). Clade I has historically caused more severe disease and was thought to be more transmissible. The fatality rate for Clade I infections is around 10%.

CASE DEFINITION

Laboratory Confirmation

- Confirmatory laboratory evidence:
 - Detection of MPXV nucleic acid by molecular testing in a clinical specimen; **OR**
 - **Monkeypox virus DNA [Presence] in Specimen by NAA with probe detection:**
 - **WA MVPX DNA Spec QI NAA+probe:**
 - Detection of MPXV by genomic sequencing in a clinical specimen.
- Presumptive laboratory evidence:
 - Detection of orthopoxvirus nucleic acid by molecular testing in a clinical specimen AND no laboratory evidence of infection with another non-variola orthopox virus; **OR**
 - Detection of presence of orthopoxvirus by immunohistochemistry in tissue; **OR**
 - Detection of orthopoxvirus by genomic sequencing in a clinical specimen; **OR**
 - Detection of anti-orthopoxvirus IgM antibody using a validated assay on a serum sample drawn 4-56 days after rash onset, with no recent history (last 60 days) of vaccination*.
 - **Orthopoxvirus.non-variola DNA [Presence] in Specimen by NAA with probe detection:**
 - **ORTHOPOXVIRUS.NON-VARIOLA DNA:**
 - **NONVAR ORTHPX DNA SPEC QL NAA+PROBE:**
- Supportive laboratory evidence:
 - N/A

**Recent administration of ACAM2000 and Jynneos needs to be considered when interpreting an antibody titer. RABORAL V-RG is an oral rabies vaccine product for wildlife, is a recombinant vaccinia virus, and could lead to an antibody response in an individual exposed to the liquid vaccine; this is expected to be an extremely rare occurrence.*

Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.

Clinical Criteria

A person presenting with new onset of:

- clinically compatible rash lesions**;
- lymphadenopathy or fever***

***The presence of clinically compatible rash lesions should be combined with either a higher or lower epidemiologic linkage criterion for case classification.*

****A person presenting with lymphadenopathy or fever without any clinically compatible rash lesions must meet a higher risk epidemiologic risk criterion for case classification.*

Epidemiologic Linkage (within 21 days of illness onset)

- Higher Risk Epidemiologic Linkages

- Contact, without the use of appropriate PPE‡, with a person or animal with a known orthopoxvirus or MPXV infection; **OR**
- Contact, without the use of appropriate PPE‡ or Biosafety Level protocols‡, with laboratory specimens or other items that could serve as fomites that have been in contact with a person or animal with a known orthopoxvirus or MPXV infection; **OR**
- Member of an exposed cohort as defined by public health authorities experiencing an outbreak (e.g., participated in activities associated with risk of transmission in a setting where multiple cases occurred).
- Lower Risk Epidemiologic Linkages
 - Member of a cohort as defined by public health authorities experiencing monkeypox activity; **OR**
 - Contact with a dead or live wild or exotic pet animal of an African species, or used or consumed a product derived from such an animal (e.g., game meat, powders, etc.); **OR**
 - Residence in or travel to a country where mpox is endemic.

‡The language “without the use of appropriate PPE or Biosafety Level protocols” includes breaches in the recommended PPE and deviations from appropriate BSL protocols.

Case Classifications

- **Confirmed:** Meets confirmatory laboratory criteria
- **Probable:** Meets presumptive laboratory criteria
- **Suspect:** Meets clinical criteria **AND** epidemiologic criteria[^] **AND** no evidence of a negative test for either non-variola orthopoxvirus or MPXV

[^]The presence of clinically compatible rash lesions should be combined with either a higher or lower epidemiologic linkage criterion for case classification. A person presenting with lymphadenopathy or fever without any clinically compatible rash lesions must meet a higher risk epidemiologic risk criterion for case classification.

Criteria to distinguish a new case of this disease or condition from reports or notifications which should not be enumerated as a new case for surveillance

For surveillance purposes, a new case of MPXV infection meets the following criteria:

1. Healthy tissue has replaced the site of all previous lesions after they have scabbed and fallen off; **AND**
New lesions are present which have tested positive for orthopoxvirus or MPXV DNA by molecular methods or genomic sequencing.

Case Investigation

Local and regional health departments should **IMMEDIATELY** investigate all reports of mpox. Investigations should include an interview of the case, or a surrogate, to get a detailed clinical, exposure, travel, and vaccination history. Additional information [from the CDC](#) and [DSHS website](#) can assist with mpox investigations.

The current investigation forms include the DSHS Patient Under Investigation Form and the CDC Mpox Case Investigation Form and can be found at <https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>. All case investigations must be entered into the Texas NEDSS Base System (NBS).

Testing for monkeypox virus or non-variola *Orthopoxvirus* by PCR should be performed for patients with a new characteristic rash, or patients that have an epidemiologic risk factor and there is a high clinical suspicion¹ for mpox or exposure that puts them at risk. Additionally, they should be evaluated for other possible febrile and rash illnesses. Historically, sporadic accounts of patients co-infected with monkeypox virus and other infectious agents (e.g., varicella zoster virus or herpes simplex virus) have

¹ Clinical suspicion may exist if presentation is consistent with illnesses confused with mpox (e.g., secondary syphilis, herpes, and varicella zoster).

been reported, so patients with a characteristic rash should be considered for testing, even if other tests are positive.

Packing, Shipping and Transport

Laboratory testing has indicated that Clade II (formerly the West African clade) is associated with the re-emergence of mpox in 2022. The U.S. government does not consider Clade II as meeting the definition of Category A infectious substance under the Hazardous Materials Regulations (HMR). Therefore, specimens and material suspected or confirmed to contain Clade II can be shipped as UN 3373 Biological Substance, Category B. [See U.S. Department of Transportation's \(DOT\) Transporting Infectious Substances Safely](#) and [Managing Solid Waste Contaminated with a Category A Infectious Substance](#) (pg. 94) for further guidance.

1A. Patient Under Investigation (PUI)/Suspect Case Investigation Checklist for Hospitalized Patient

- Patients that come into a healthcare facility with mpox-compatible symptoms should be isolated in a single patient room containing a private bathroom with the door closed (if safe to do so). Special air handling is not required. Intubation, extubation, and any procedures likely to spread oral secretions should be performed in an airborne infection isolation room.
- HCP should utilize appropriate PPE and follow appropriate precautions, which includes Standard Precautions plus additional precautions, as required. HCP should also follow guidance for infection prevention and control of mpox in healthcare settings. See CDC's mpox infection control guidance (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html>) as well as general isolation precautions (<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>).
- Facility infection prevention and control personnel should be notified.
- Facility infection prevention and control personnel or occupational health services should keep a list of all persons who had contact with the patient, entered a contaminated room or patient care area, or had contact with contaminated materials; this list should also include time, location, and type of contact/exposure.
- Assess the PUI's epidemiologic risk factors and symptoms and determine if they meet the suspect case definition.
 - Interview the suspected-case patient, their surrogate and/or the patient's healthcare provider. Complete the DSHS PUI Form <https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>, and, if necessary, obtain medical records.
- If necessary, contact your regional health department for consultation on symptoms, epidemiologic risk factors, and preliminary lab findings.
- If appropriate, consider testing and treating for alternative diagnoses while waiting for monkeypox virus testing results.
- Arrange for testing of PUI at an LRN or commercial CLIA-approved testing facility. See DSHS Mpox Laboratory Testing Guidance for Human Clinical Specimens at <https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>.
- Identify all close contacts of PUI and events attended during infectious period. Assess risk levels of exposed individuals as soon as a person with epidemiologic risk factors and mpox symptoms presents for medical evaluation.
- Suspect case investigations may be entered into NBS.
- See Case Investigation Checklist for Hospitalized Patient if the patient is positive for *Orthopoxvirus* or monkeypox virus.

1B. PUI/Suspect Case Investigation Checklist for Non-hospitalized Patient

Public health may not be aware of all testing performed for *Orthopoxvirus* or monkeypox virus in a non-hospital setting. However, public health could be notified prior to testing if a clinician is requesting testing for *Orthopoxvirus* or monkeypox virus via a Texas LRN laboratory, or a clinician notified public health of their intention to test via a commercial or other CLIA-approved laboratory.

- Patients that come into a healthcare facility with mpox-compatible symptoms should be isolated in a single patient room with the door closed (if safe to do so). Special air handling is not required.
- HCP should utilize appropriate PPE and follow appropriate precautions, which includes Standard Precautions plus additional precautions, as required. HCP should also follow guidance for infection prevention and control of mpox in healthcare settings. See CDC's mpox infection control guidance (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html>) as well as general isolation precautions (<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>).
- If the facility has infection prevention and control personnel, they should be notified.
- Facility infection prevention and control personnel or occupational health services should keep a list of all persons who had contact with the patient, entered a contaminated room or patient care area, or had contact with contaminated materials, and the list should also include time, location, and type of contact/exposure.
- Assess PUI's epidemiologic risk factors and symptoms and determine if they meet the suspect case definition.
 - Interview the suspected-case patient, their surrogate and/or the patient's healthcare provider. Complete the DSHS PUI Form, and, if necessary, obtain medical records.
- If necessary, contact your regional health department for consultation on symptoms, epidemiologic risk factors, and preliminary lab findings.
- If appropriate, consider testing and treating for alternative diagnoses while waiting for monkeypox virus testing results.
- Arrange for testing of PUI at an LRN laboratory and, if needed, obtain patient ID number to send to the LRN, or if appropriate, arrange for testing via commercial laboratory testing or other CLIA-approved laboratory. See DSHS Mpox Laboratory Testing Guidance for Human Clinical Specimens at <https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>.
- Identify all close contacts of PUI and events attended during infectious period. Determination of exposed individuals should begin as soon as a person with epidemiologic risk factors and mpox symptoms presents for medical evaluation.
- Inform the clinician and/or patient that those with suspected mpox infection should have recommended isolation precautions for mpox maintained until test results are available.
- Suspect case investigations may be entered into NBS.
- See Case Investigation Checklist for Non-hospitalized Patient if the patient is positive for *Orthopoxvirus* or monkeypox virus.

2A. Case Investigation Checklist for Hospitalized Patient

- Any positive *Orthopoxvirus* or monkeypox virus laboratory reports should be investigated immediately. The case may have been tested while in the hospital or may have been tested in a non-hospital setting but came to the hospital for treatment of worsening disease prior to receiving laboratory results.
- Confirm that laboratory results meet the probable or confirmed case definition.
- Ensure appropriate control measures have been implemented for a hospital setting. See CDC's mpox infection control guidance (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html>) as well as general isolation precautions (<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>).
- **Notify DSHS immediately of probable or confirmed cases. Routes of notification can include entering the case investigation into NBS (preferred), emailing or faxing case investigation forms to EAIDU, or submitting case documentation via GlobalScape.**
- For probable cases performed by a laboratory that does not have a confirmatory test, a specimen may be forwarded to CDC for laboratory confirmation. Commercial laboratory testing for monkeypox virus is considered presumptive evidence for mpox infection and is adequate to start a case investigation. Samples from patients being treated with TPOXX, with a recent history of international travel, with an unusual clinical presentation, or unusual laboratory

results (e.g., non-variola orthopoxvirus positive but West African MPXV negative) should be considered for forwarding for viral characterization at CDC.

- Complete the CDC Mpox Case Investigation Form (<https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>) or complete the Mpox Case Investigation in NBS using medical records and by interviewing the case-patient or surrogate to identify close contacts, risk factors, and other pertinent information.
- Use the Mpox Exposure Risk Assessment Form to identify mpox contacts and the Texas Department of State Health Services Monitoring Guidance for Individuals Exposed to Monkeypox Virus. (<https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>). Arrange for symptom self-monitoring for 21 days for all contacts and possible additional control measures for higher risk contacts or exposed healthcare workers. Identify if any contacts have any mpox-compatible symptoms and refer them for testing where appropriate.
- If the case traveled while possibly infectious, **collect information about travel**. This information may need to be relayed to CDC by EAIDU. See below section on “Travelers” for more information on reporting to DGMQ.
- See “Duration of Isolation” below for how long the case must isolate.
- If the case is discharged from the hospital to convalesce at home, or another agreed upon non-healthcare location, see 2B. Case Investigation Checklist for Non-hospitalized Patient for additional guidance.

Confirmed and probable case investigations must be entered into NBS.

2B. Case Investigation Checklist for Non-hospitalized Patient

- A case may have been tested for *Orthopoxvirus* or monkeypox virus in a non-hospital setting. If a positive laboratory report was received for *Orthopoxvirus* or monkeypox virus testing, then it should be investigated immediately.
- Confirm that laboratory results meet the probable or confirmed case definition.
- Ensure appropriate control measures have been implemented if the patient is convalescing at home, or another agreed upon non-healthcare location. Follow CDC’s guidance for [Isolation and Infection Control At Home](#) and [Isolation and Prevention Practices for People with Mpox, What to Do If You Are Sick, Preventing Spread to Others](#), and Follow CDC’s guidance for [Cleaning and Disinfecting Your Home, Workplace, and Other Community Settings](#).
- **Notify DSHS immediately of probable or confirmed cases. Routes of notification can include entering the case investigation into NBS (preferred), emailing or faxing case investigation forms to EAIDU, or submitting case documentation via GlobalScape.**
- For probable cases performed by a laboratory that does not have a confirmatory test, the specimen will not be automatically forwarded to CDC for laboratory confirmation. Samples from patients being treated with TPOXX, with a recent history of international travel, with an unusual clinical presentation, or unusual laboratory results (e.g., non-variola orthopoxvirus positive but West African MPXV negative) should be considered for forwarding for viral characterization at CDC.
- Complete the CDC Mpox Case Investigation Form (<https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>) or complete the Mpox Case Investigation in the NEDSS Base System (NBS) using medical records and by interviewing the case-patient or surrogate to identify close contacts, risk factors, and other pertinent information.
- Identify and prioritize mpox contacts based on the Mpox Exposure Risk Assessment Form and utilize the Texas Department of State Health Services Monitoring Guidance for Individuals Exposed to Monkeypox Virus for monitoring guidance (<https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health>). Arrange for symptom self-monitoring for 21 days for all contacts and possible additional control measures for higher risk contacts or exposed healthcare workers. Identify if any contacts have any mpox-compatible symptoms, and possibly refer them for testing.

- If the patient traveled while possibly infectious, **collect information about travel**. This information may need to be relayed to CDC by EAIDU. See below section on “*Travelers*” for more information on reporting to DGMQ.
- See Duration of Isolation below for how long the case must isolate.

Confirmed and probable case investigations must be entered into NBS.

Prevention and Control Measures

Prevention and control measure guidelines for mpox are subject to change as knowledge of the disease evolves. Prevention and control measures for suspect, probable, and confirmed cases are dependent on locations visited, where the suspect case will isolate and convalesce (hospital vs. at home or another agreed upon non-healthcare location), individuals exposed to the case or mpox contaminated areas or items, as well as other factors. Many of the prevention and control measures have been incorporated into the specific checklists above.

Healthcare Facilities and Healthcare Personnel

Please see Infection Prevention and Control of Mpox in Healthcare Settings at <https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html>. These recommendations are intended for healthcare settings and healthcare personnel. Healthcare settings refers to places where healthcare is delivered and includes, but is not limited to, acute care facilities, long-term acute-care facilities, inpatient rehabilitation facilities, nursing homes, home healthcare, vehicles where healthcare is delivered (e.g., mobile clinics), and outpatient facilities, such as dialysis centers, physician offices, dental offices, and others. HCP refers to all paid and unpaid persons serving in healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials, including body substances (e.g., blood, tissue, and specific body fluids); contaminated medical supplies, devices, and equipment; contaminated environmental surfaces; or contaminated air. These HCP include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, laboratorians, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel).

Cases Convalescing at Home

If a suspect case or case is isolating or convalescing at home or another approved location, they should follow the guidance below.

- Isolation and Infection Control at Home (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-home.html>)
- Isolation and Prevention Practices for People with Mpox (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/isolation-procedures.html>)
- What to Do If You Are Sick (<https://www.cdc.gov/poxvirus/monkeypox/if-sick/what-to-do.html>)
- Preventing Spread to Others (<https://www.cdc.gov/poxvirus/monkeypox/if-sick/preventing-spread.html>)
- Cleaning and Disinfecting Your Home, Workplace, and Other Community Settings (<https://www.cdc.gov/poxvirus/monkeypox/specific-settings/home-disinfection.html>)

Congregate Living Settings

Congregate living settings are facilities or other housing where people who are not related reside in close proximity and share at least one common room (e.g., sleeping room, kitchen, bathroom, living room). Congregate living settings can include correctional and detention facilities, homeless shelters, group homes, dormitories at institutes of higher education, seasonal worker housing, residential substance use treatment facilities, and other similar settings. Strategies for congregate living settings can be found in Considerations for Reducing Mpox Transmission in Congregate Living Settings at

<https://www.cdc.gov/poxvirus/monkeypox/specific-settings/congregate.html>. These settings may provide personal care services but are not traditional healthcare settings (e.g., hospitals). If healthcare services are provided on site, they are usually provided in specific healthcare areas or by outside healthcare personnel (e.g., home health care workers). In these circumstances, healthcare personnel should follow recommendations in Infection Prevention and Control of Mpox in Healthcare Settings at <https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html>.

Autopsy and Handling of Human Remains

Please see CDC's Autopsy and Handling of Human Remains of Patients with Mpox at <https://www.cdc.gov/poxvirus/monkeypox/clinicians/autopsy.html>, for information concerning transfer, protective equipment and facility design, autopsy procedures, specimen collection, and other topics.

Laboratory Settings

Information can be found on CDC's Information for Laboratory Personnel website, available at <https://www.cdc.gov/poxvirus/monkeypox/lab-personnel/index.html>. Laboratory workers should follow the guidelines in the CDC's Biosafety Laboratory Guidance for Handling and Processing Mpox Specimens, available at <https://www.cdc.gov/poxvirus/monkeypox/lab-personnel/lab-procedures.html>. General guidance for PPE can be found in the NIOSH Directory of Personal Protective Equipment available at <https://www.cdc.gov/niosh/ppe/>. Additional information on standard and special practices for the laboratory can be found in *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, 6th edition, found at <https://www.cdc.gov/labs/BMBL.html>.

Caregivers and Household Members

Recommendations for caregivers and household members can be found on the same websites as information for cases that are convalescing at home.

- Isolation and Infection Control at Home (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-home.html>)
- Isolation and Prevention Practices for People with Mpox (<https://www.cdc.gov/poxvirus/monkeypox/clinicians/isolation-procedures.html>)
- Preventing Spread to Others <https://www.cdc.gov/poxvirus/monkeypox/if-sick/preventing-spread.html>
- Cleaning and Disinfecting Your Home, Workplace, and Other Community Settings (<https://www.cdc.gov/poxvirus/monkeypox/specific-settings/home-disinfection.html>)

Close Contacts

See the Exposed Individuals section below.

Travelers

Mpox information for travelers can be found at:

- Travelers' Health – Mpox <https://wwwnc.cdc.gov/travel/diseases/mpox>
- Mpox Travel <https://www.cdc.gov/poxvirus/monkeypox/travel/index.html>

If a case flew on a plane while infectious, gather the below information and send it to EAIDUMonitoring@dshs.texas.gov. This information can also be included in the NBS investigation.

CDC quarantine stations will use the following criteria to initiate an aircraft contact investigation. Characteristics related to flight – both must be met:

- Occurred in previous 21 days, and
- Duration ≥3 hours.

Characteristics related to traveler – one must be met:

- Had a fever (100.4°F [38°C]) at the time of their flight, or
- Had respiratory symptom(s) at the time of their flight (including sore throat, nasal congestion, cough), regardless of mask use, or
- Did not wear a mask during their flight (even if no respiratory symptoms), or

- Did not cover all lesions during their flight.

In unique circumstances that suggest added risk of transmission in the aircraft cabin, DGMQ may pursue a contact investigation regardless of these criteria, if needed. This information will be provided to CDC DGMQ for flight exposure notifications:

- Name
- Date of birth
- Address
- Mpox State ID or NBS Patient ID
- Symptoms and onset date
- Test information
 - Copy of lab report that includes:
 - Date of collection
 - Test type
 - Specimen source
 - Type of lab
 - Date of result (if available)
- Flight history
 - Date of flight(s)
 - Airline
 - Flight number
 - Flight departure cities and arrival cities for all flights
 - Seat number (if available)
- Passenger or crew member?
- Imminent travel concerns

General Population

CDC has some general and more specific prevention guidance. This guidance includes prevention information such as vaccine information, safer sex and social gatherings, and others, and can be found at <https://www.cdc.gov/poxvirus/monkeypox/prevention.html>. Please see “How to Protect Yourself” for general monkeypox prevention, located at <https://www.cdc.gov/poxvirus/monkeypox/prevention/protect-yourself.html>.

Duration of Isolation

Patients with mpox infection (probable or confirmed) should not be released from isolation until they are no longer considered infectious. This is when all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath.

Patients with suspected mpox infection are recommended to isolate until mpox infection is ruled out.

Cases Lost to Follow-up

- Make at least 3 attempts to call the individual on both their primary and secondary telephone numbers (if available). Attempts should be made at different times of the day, with at least one attempt during the evening or weekend hours.
- Send a text and email (if email address is available) to the individual with instructions to contact you as soon as practical.
- Attempt to contact the individual’s emergency contact(s), if available.
- If the individual cannot be reached by phone, text, or e-mail, an in-person visit should be made.
 - The individual should be located at the predetermined location of isolation, however, if the individual is not present, a notice of your visit (with your contact information) and education materials should be left at the residence.
- If an individual remains uncontactable, complete the NBS investigation as much as possible and note that the case was lost to follow up.

Exclusions

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 monkeypox virus or antibodies to *Orthopoxvirus*

EXPOSED INDIVIDUALS

Managing Close Contacts

For detailed information on managing exposed individuals, see the Mpox Exposure Risk Assessment Form and the Updated Monitoring Guidance and Vaccine Eligibility for Individuals Exposed to Monkeypox Virus at <https://www.dshs.state.tx.us/IDCU/disease/monkeypox/Monkeypox-Information-For-Public-Health/>.

In general, children with a fever from any infectious disease should be excluded from school and daycare for at least 24 hours after fever subsides without the use of fever-suppressing medications. It is recommended that adults not return to work for at least 24 hours after fever has subsided without the use of fever suppressing medications. Do not exclude close contacts from daily activities such as work or school if they have no other reasons for exclusion.

PROPHYLAXIS

- Two vaccinations may be used for the prevention of mpox disease: JYNNEOS or ACAM2000 vaccines.
 - JYNNEOS is a vaccine originally developed for prevention of smallpox, another virus closely related to mpox. It is approved for the prevention of mpox and smallpox disease. JYNNEOS is the preferred vaccine to protect against mpox. JYNNEOS is given as a two-dose series, with the second dose administered four weeks after the first. More information can be found on the [CDC website](#).
 - ACAM2000 is a vaccine also originally developed for prevention of smallpox but has been made available for prevention of mpox disease under an Expanded Access Investigational New Drug (EA-IND) protocol. ACAM2000 is given as a single dose. More information can be found on the [CDC website](#).
- JYNNEOS is currently being used for vaccinating contacts of mpox cases to prevent disease. Post-exposure prophylaxis (PEP) is recommended to occur within the first 4 days of exposure to potentially prevent disease. Vaccination given between 4 to 14 days after exposure may not prevent disease but may reduce the severity of symptoms.
 - PEP is recommended for all high-risk exposures. In these cases, the risk of exposure outweighs the risk of vaccination.
 - PEP may be recommended on a case-by-case basis for intermediate and low/uncertain-risk exposures. Decisions to provide PEP for these individuals should consider vaccine stock.
 - Consult with DSHS on urgent questions or requests for vaccine (DSHSMPXVax@dshs.texas.gov).
- For information on pre-exposure prophylaxis for laboratorians, please email EAIDUMonitoring@dshs.texas.gov.

TREATMENT

Currently, there is no specific treatment approved for mpox virus infections. However, [treatment developed for use in patients with smallpox, complications from smallpox vaccination, or other viruses](#)

may prove beneficial, and several medical countermeasures are currently available from the Strategic National Stockpile (SNS).

One of these treatment options is [Tecovirimat \(TPOXX, ST-246\)](#), an antiviral medication that was developed for the treatment of smallpox in adults and children. Data are not available on the effectiveness of tecovirimat in treating mpox infections in people, but Tecovirimat may be beneficial in the treatment of mpox for those with severe disease, immunocompromising conditions, pediatric cases (particularly <8 years of age), and other possible risk factors.

Other available but less commonly used treatment options include Vaccinia Immune Globulin Intravenous (VIGIV), Cidofovir (also known as Vistide), and Brincidofovir (also known as CMX001 or Tembexa).

Medical countermeasures are currently available from the CDC in consultation with DSHS. Healthcare providers and regional and local health departments and request a clinical consult with the DSHS Clinical Consult Team (DSHSMPXConsult@dshs.texas.gov) as soon as mpox and the possibility of severe illness is suspected to allow for timely release of treatment.

MPOX VIRUS AND ANIMALS

Monkeypox virus can infect a wide range of mammals, but it is unclear at this time which mammals can become infected. Information for veterinarians, public health, and animal health officials can be found on CDC's Mpox webpage for Veterinarians <https://www.cdc.gov/poxvirus/monkeypox/veterinarian/index.html>. General information concerning pets in the home is also available (<https://www.cdc.gov/poxvirus/monkeypox/specific-settings/pets-in-homes.html>).

Please see the Laboratory Procedures section below for animal testing information.

COMMUNICATIONS

- For initial case(s), you may coordinate with DSHS and your PIO (Public Information Office) to issue a health alert to all area providers, hospitals, and urgent care clinics.
 - Describe situation.
 - Provide information on the use of PPE.
 - List symptoms and risk factors to look for.
 - Instruct on what to do if a PUI or case is identified.
- Contact all entities that have had or are likely to have an exposure (e.g., if patient attended an event, or if contacts all attend church, etc.).
 - Describe the situation.
 - Allay concerns.
 - List symptoms to look for and what to do if anyone with symptoms is identified.
 - Elicit additional contacts, if appropriate.
- Prepare media statements and FAQs.
- Inform the police department, EMS, 911, and anyone else who might be called upon to interact or care for PUIs.
 - Describe situation.
 - Provide instructions on PPE.
 - List symptoms and risk factors to look for.
 - Instruct on what to do if a PUI is identified.
- CDC has guidance on Reducing Stigma in Mpox Communication and Community Engagement for the 2022 multi-country outbreak. Please see <https://www.cdc.gov/poxvirus/monkeypox/reducing-stigma.html>. Other CDC Communications resources can be found at <https://www.cdc.gov/poxvirus/monkeypox/resources/index.html>.

REPORTING AND DATA ENTRY REQUIREMENTS

Provider, School, Child-Care Facility, and General Public Reporting Requirements

Any confirmed, probable, or clinically suspected cases of mpox are required to be reported **immediately** to the local or regional health department.

Local and Regional Reporting and Follow-up Responsibilities

Local and regional health departments should:

- Enter the case into NBS and submit an NBS notification on all **confirmed** and **probable** cases who meet case criteria as outlined in the mpox case definition:
 - For probable and confirmed cases, enter an investigation in NBS and create a notification the same day.
 - A notification can be sent as soon as the case criteria have been met. Additional information from the investigation may be entered upon completing the investigation.
 - Please refer to the NBS Data Entry Guidelines for disease-specific entry requirements.

If an outbreak is investigated, local and regional health departments should:

- Report outbreaks to the regional DSHS office and to DSHS EAIDU at EAIDUMonitoring@dshs.texas.gov or 512-776-7676.
- Notify the regional DSHS office and DSHS EAIDU at the conclusion of the outbreak investigation.
 - Send an outbreak summary by secure email or fax to the DSHS regional office and to EAIDU at EAIDUMonitoring@dshs.texas.gov or 512-776-7676. The secure email should also be sent to the High Consequence Infectious Disease team lead at EAIDU.

Other notable cases, such as pediatric or adolescent cases, cases in incarcerated individuals, or other unique situations, should follow the notification requirements above.

LABORATORY PROCEDURES

- The testing landscape for mpox is rapidly evolving. There are two types of real-time PCR assays readily available: Non-variola Orthopoxvirus Generic Test, Monkeypox virus Generic Test, and assays for the specific detection of monkeypox virus West African and Congo Basin strain DNA
- Several commercial, hospital, and LRN laboratories offer the *Orthopoxvirus* assay. Some commercial laboratories, as well as the CDC, can also perform monkeypox virus-specific assays.
- Note that, for a case to be considered a confirmed case, it must have a detected/positive result with a monkeypox virus assay (or, alternatively, detection of monkeypox virus by genomic sequencing).

Please refer to the DSHS Mpox Laboratory Testing Guidance for Human Clinical Specimens <https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health> for detailed instructions on sample collection and submission for mpox testing at a public health laboratory.

- Testing for animals is available at CDC but must meet testing criteria and requires coordination of multiple public health and animal health agencies prior to specimen submission.

Please refer to the DSHS Mpox Laboratory Testing Guidance for Animal Clinical Specimens <https://www.dshs.texas.gov/monkeypox/monkeypox-information-public-health> for detailed instructions on sample collection and submission for mpox testing at a public health laboratory.

UPDATES

July 2022

- Document created.

August 2022

- Document updated.

September 2022

- Document updated

January 2023

- Document updated