Mpox (monkeypox)

Signs and Symptoms	• Prodrome: does not always occur; if present, may be fever, chills, headache, muscle pain (myalgias), back pain, swollen lymph nodes, exhaustion, and cough or a sore throat. • Rash: follows 1 to 3+ days after prodrome (if any), may be on any part of the body and may spread. Isolated genital lesions (which can ulcerate) or rectal inflammation may also occur. Typically lesions progress over about 2 weeks: macule →papule → vesicle → pustule → scab. However, rash may be atypical, particularly on mouth or anogenital. Can be uncomfortable and painful in sensitive areas, and itchy as it crusts over.
Incubation	Usually 7–14 days, range 3–17 days
Case classification	**Clinical criteria**: new rash, fever, other consistent symptoms **Epi criteria**: contact of a person with confirmed or probable mpox; close contact with someone in a social network experiencing mpox; travel to risk region; contact with exotic animal or animal product.
	Note: DOH is only counting and reporting confirmed and probable cases to CDC. Due to availability of test types, DOH does not differentiate between confirmed and probable cases in analyses and data products.
	Confirmed: positive PCR OR Next-Generation sequencing OR positive culture for mpox **Probable:** No other Orthopoxvirus risk AND positive lab test for orthopoxvirus **Suspect:** New characteristic rash OR epi criterion and high clinical suspicion for mpox
	Reinfection: When a person who was classified as confirmed or probable mpox case has a reoccurrence of mpox symptoms after complete resolution of the initial infection (disappearance of all clinical symptoms of mpox). Confirmed reinfection case requires sequencing information for both episodes.
Differential diagnosis	Smallpox, chickenpox, shingles, measles, coxsackievirus, molluscum contagiosum, drug allergy, insect bites, scabies, rubella, syphilis, mononucleosis, impetigo, scarlet fever; for genital lesions: syphilis, HSV, chancroid; mpox can co-occur with another infection.
Treatment	Encourage antiviral agents (investigational) where appropriate (see below for information on how to access); post-exposure vaccine may prevent infection. Special clinical considerations exist for persons living with HIV, children and adolescents, and persons who are pregnant and/or breastfeeding (see section 5A).
Duration	2-4 weeks or longer; contagious until scabs shed and healthy skin appears. (Scarring possible)
Exposure	Person-to-person; rarely contact with exotic animal.
Laboratory testing at PHL	Clinical testing available commercially; check with performing lab on available tests for mpox virus (MPXV) vs. orthopoxvirus. Local health jurisdiction (LHJ) can also arrange for MPXV testing and clade determination for cases at PHL Serology available at CDC. • **Specimens (for PCR)**: **swab 2-4 lesions with synthetic swabs. Use viral (not universal) transport medium or dry vial. Label each: name, DOB, collection date, body site** • Refrigerate within an hour. Keep all specimens **cold if they will arrive within 24 hours, otherwise freeze and ship frozen (except for serum).** For each specimen use Lab Web Portal to submit this form • See Specimen Collection and Submission Instructions here and here
Public health actions **URGENT**	LHJ should initiate investigation of an mpox case within 24 hours and immediately report confirmed cases to DOH through WDRS. • Isolate potential case, obtain full clinical information, other test results, and if available digital photographs. DOH consultation available for testing and treatment decisions. Please notify DOH if a healthcare worker is diagnosed with mpox. • Identify close contacts; if case test positive, interview contacts. Conduct symptom monitoring for 21 days, especially if clade I is suspected, and refer contacts for post-exposure vaccination (if applicable). • Provide infection control guidance (see details on home and healthcare settings). • Notify DOH immediately (by phone) if you suspect a Clade I infection.

Mpox (monkeypox)

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To understand the epidemiology of mpox in Washington State residents and to inform public health and healthcare organizations about conditions that have been diagnosed in residents.
2. To assist in the diagnosis and treatment of cases.
3. If applicable, to identify potentially exposed close contacts, healthcare workers, and laboratory personnel and to provide counseling.
4. To identify sources of transmission and to prevent further transmission.
5. To raise the index of suspicion of a possible bioterrorism event if no natural exposure source is identified.

B. Legal Reporting Requirements

1. Health care providers and Health care facilities: *immediately* notifiable to **local health jurisdiction**
2. Laboratories: *immediately* notifiable to **local health jurisdiction**
3. Local health jurisdictions: **immediately notifiable to the Washington State Department of Health (DOH) through WDRS.**

C. Local Health Jurisdiction Investigation Responsibilities

1. Begin follow up investigation within 24 hours upon identification of a case.
2. Report any case through the Washington Disease Reporting System (WDRS) as a Rare Disease of Public Health Significance. In the Clinical and Laboratory question package, select Mpox as the 'Rare disease of public health significance'. All case investigation data must be entered in the Mpox Wizard in WDRS. See below for more information about notifying Tribes of cases in potential tribal members.

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Monkeypoxvirus (MPXV), is a DNA virus in the genus *Orthopox*. There are two clades, I and II; Clade II causes milder illness. There can be various strains within a clade. Related viruses are variola virus (cause of smallpox), vaccinia virus (smallpox vaccine), and cowpox virus. The outbreak that started in 2022 is due to Clade IIb (with sublineages A and B). Since 2023, there has been an ongoing outbreak of Clade I MPXV in the Democratic Republic of the Congo (DRC), which has spread to neighboring countries; no Clade I cases have occurred in the US.

B. Description of Illness

Mpox (previously called monkeypox) illness sometimes begins with a prodrome including fever, chills, headache, muscle aches, backache, lymphadenopathy, and exhaustion, as well as cough or a sore throat. Lymphadenopathy can involve the neck, armpits, or groin, and be on one or both sides of the body but is not always present.

A few days after the prodrome (if present), a rash develops which may cause severe pain particularly in mucosal areas (e.g., much more painful than a herpes infection in similar distribution). The typical rash has deep-seated, well-circumscribed, firm, and discrete lesions, but smaller less typical lesions have also been described in the 2022 outbreak. For people who experience more widespread lesions, the lesions often start on the face and then spread to other body areas, particularly the extremities. However, in the 2022 outbreak, many cases have featured lesions that are limited to the genital area or the mouth. Lesions can be varied: asynchronous (multiple stages on a body site), single, diffuse, limited to one body part (e.g., mucosal, anogenital), disseminated (particularly with immunosuppression), shallow rather than deep-seated, or under a nail. Spread is generally systemic, not by direct transfer of viral material. Rectal inflammation without external rash can also occur. Patients can present with rectal symptoms such as purulent or bloody stools, rectal pain, or rectal bleeding.

Typically (but not always) rash lesions progress through stages synchronously on a body site:

Stage	**Stage Duration**	**Characteristics**
Enanthem		Sometimes, lesions first form on the tongue and in the mouth.
Macules	1-2 days	Macular lesions appear (flat spot with change in skin coloring).
Papules	1-2 days	Lesions typically progress from macular (flat) to papular (raised).
Vesicles	1-2 days	Lesions then typically become vesicular (circumscribed, raised and filled with clear fluid).
Pustules	5-7 days	Lesions then typically become pustular (filled with opaque fluid); sharply raised, usually round and firm to the touch (deep seated). Finally lesions typically develop a depression in the center (umbilication). The pustules will remain for approximately 5-7 days before beginning to crust.
Scabs	7-14 days	By the end of the second week, pustules have crusted and scabbed over. Scabs will remain for about a week before falling off.

* This is a typical timeline, but timeline may vary.

Vesicular or pustular lesions may ulcerate or umbilicate in the center and the surrounding skin may redden. Keratitis or pneumonia may occur. Secondary bacterial infection can cause abscesses. Penile lesions can result in phimosis or balanitis. Rectal lesions can interfere with bowel movements (due to pain) or even lead to obstruction. Lesions are often quite painful (especially at mucous membrane sites), while scabs are

itchy. Lesions may leave pitted scars, altered pigment, or corneal scars if ocular involvement occurs. Rare complications include dehydration, sepsis, or encephalitis/encephalomyelitis (see MMWR for more information on the latter). The total duration of symptoms is 2−4 weeks.

There is historical evidence that clade I mpox is more transmissible, and potentially more severe, with case fatality rates reported up to 10%, with higher risk for children. However, initial analysis from the ongoing clade I outbreak in the Democratic Republic of the Congo indicates that people with clade I mpox who are provided high-quality supportive care have a significantly lower mortality than those who were not connected to care.

Clade II (the clade causing the current outbreak) has historically had a lower case fatality rate. In the 2022 outbreak, few deaths (under 0.1% of cases) have been reported in the US. Being immunocompromised (e.g., untreated HIV) appears to increase risk of severe or fatal outcome (see CDC HAN).

Clinicians should consider other conditions causing rashes including chickenpox, shingles, measles, coxsackievirus (hand foot mouth disease), scabies, drug allergy, insect bites, rubella, syphilis, molluscum contagiosum, mononucleosis, impetigo, scarlet fever, erythema toxicum, smallpox; for genital lesions: syphilis, herpes simplex virus infection, chancroid, varicella zoster. Note that multiple concurrent infections can occur (e.g., herpes and mpox). Resources below.

- General information
- CDC information for clinicians
- WA DOH FAQ for clinicians
- CDC information on clinical recognition of the rash
- CDC Guidance on mpox and pregnancy

C. Mpox in Washington State

Prior to 2022 no cases had been detected. In May 2022, Washington identified its first cases which were part of an international outbreak involving Clade II. Cases have been reported from across the United States and many countries and continents. See WA DOH page for WA data, CDC page for US data, and CDC and WHO pages for global data.

D. Reservoirs

Although first recognized in a research monkey colony, the reservoir for the virus in Central and West African countries is unknown. Several species of primates and rodents are known to be susceptible to infection with the virus. Person-to-person transmission occurs with close or intimate contact, or through fabrics or material with lesion or scab contamination.

E. Modes of Transmission

Mpox is acquired by close contact with an infected person (or with an infected animal). The virus is present in the rash, scabs and scab fragments, and, if there are mucosal lesions, in associated fluids. Contact with clothing or bedding contaminated with lesion fluid or scabs can result in transmission. Transplacental transmission can occur. Lesions can occur in the mouth and throat, but droplet transmission alone is rarely

implicated, so prolonged face-to-face contact is likely necessary for spread. Information from real-life outbreaks suggests that the risk of respiratory transmission appears to be low. Transmission during an air flight has not been documented (see MMWR on transmission during air travel). Transfer to or from healthcare personnel appears minimal (in the absence of a sharps injury) but recommended precautions should be maintained. A case of transmission in a healthcare setting may have occurred through contaminated bedding (see journal article). See CDC page for more information.

F. Incubation Period

The incubation period (time from infection to symptoms) for mpox is usually 7−14 days but can range from 3−17 days.

G. Period of Communicability

Mpox is communicable from onset of the first symptom until the last scab separates with healthy skin below. Emerging evidence also suggests that pre-symptomatic transmission is possible. At this time, it is unclear whether pre-symptomatic transmission occurs prior to rash onset in individuals who do not experience a viral prodrome, prior to viral prodrome onset, or both. While cases of asymptomatic infection have been documented, there are no known cases of transmission from individuals with asymptomatic infection (i.e., individuals who never develop symptoms). CDC provides further information on mpox transmission.

Detached scabs from mpox lesions can retain infectious virus. Shed scabs and fabrics contaminated with scabs should be handled in a safe manner. Virus may persist for weeks in fabrics.

H. Treatment

Prompt use of antiviral agents should be considered to prevent severe illness or complications, particularly for persons at increased risk for severe infection (e.g., immunocompromised, persons who are pregnant/breastfeeding, children, people with a condition affecting skin integrity) or persons with severe disease and/or mucosal lesions (eye, mouth, anogenital area). See Section 5A for details about treatment, including instructions on accessing tecovirimat (TPOXX) and vaccine. There is an applicable Expanded Access Investigational New Drug Protocol needed.

Other interventions may be appropriate, such as antibiotics if lesions develop secondary bacterial infections. Special clinical considerations exist for persons who are living with HIV, children and adolescents, and persons who are pregnant and/or breastfeeding (see section 5A and CDC guidance on mpox and pregnancy). For more information on therapeutics see CDC clinical treatment guidelines.

CDC recommends post-exposure prophylaxis vaccination, ideally within four days from the date of exposure. If vaccination occurs within 4-14 days after the date of exposure, vaccination may reduce the symptoms of disease but may not prevent the disease. More information about post-exposure vaccination for close contacts is found later in this document (Section 5D). Vaccinia immune globulin intravenous (VIGIV) can be considered for prophylactic use if vaccine cannot be given (LHJs can call CDC's Emergency Operation Center at 770-488-7100 or email poxvirus@cdc.gov and ask for a clinical consultation).

I. Immunization Recommendations

Vaccination (pre-exposure) is recommended for the following groups:

- People who had known or suspected exposure to someone with mpox.
- People who had a sex partner in the last 2 weeks who was diagnosed with mpox.
- Gay, bisexual, and other men who have sex with men, and transgender, nonbinary, or gender diverse individuals who in the past 6 months have had the following:
    - A new diagnosis of one or more sexually transmitted infections (STIs; e.g., chlamydia, gonorrhea, syphilis, acute HIV, or chancroid); or
    - More than one sexual partner.
- People who have had any of the following in the past 6 months:
    - Sex at a commercial sex venue (like a sex club or a bathhouse); or
    - Sex in association with a larger public event in a geographic area where mpox transmission is occurring; or
    - Sex in exchange for money, drugs or other purposes.
- People who are sexual partners of people with any of the above risks.
- People who anticipate experiencing any of the above scenarios, especially if they anticipate traveling to countries or localities where ongoing transmission of clade I mpox is occurring.
- People with HIV infection or other cause of immunosuppression who have had recent or anticipate potential mpox exposure.
- People who work in settings where they may be exposed to mpox (e.g., people who work with orthopoxviruses in a laboratory).

The following populations (among those who meet the above criteria) should be prioritized for outreach and for vaccination:

- Black, Hispanic/Latinx, Native Hawaiian and Other Pacific Islanders, Asian, Indigenous, or American Indian/Alaska Native people.
- Individuals who have attended a bathhouse or public sex venue, or participated in group sex (sex including ≥ 3 people at the same time) in the last 6 months.
- Individuals who have experienced homelessness/unstable housing (including living in a shelter, car, or congregate setting; living with friends or relatives; couch surfing; agricultural workers and seafood workers) in the last 6 months.
- Individuals who are currently or in the past 6 months have been incarcerated.
- Individuals who are taking PrEP to prevent HIV infection.
- Individuals who have used methamphetamines in the past 6 months.
- People who have been sexually assaulted regardless of gender or sexual orientation.
- People who have had sexual contact or prolonged skin-to-skin exposure (secondary contacts) with people who were exposed to mpox.
- All individuals who have had multiple or anonymous sex partners in the last 6 months.

Additionally, pre-exposure vaccination is recommended for certain persons at risk for occupational exposure to Orthopoxviruses (see MMWR for further information). Most clinicians and laboratorians are not advised to receive pre-exposure vaccination. There is no recommendation for routine vaccination of health care workers due to effective protection provided with appropriate personal protective equipment (PPE). A study in

Colorado found there was very low risk to health care workers exposed to patients with mpox despite incomplete adherence to PPE. See Section 5A for infection control guidance for health care workers.

People who have recovered from mpox do not need to be vaccinated. While reinfection is possible, it is extremely rare and the second infection is more mild compared to the initial mpox infection.

Furthermore, pre-exposure vaccination is not recommended for people traveling to areas with an ongoing mpox outbreak, unless they meet current vaccine eligibility criteria.

Non-replicating vaccine (JYNNEOS™ also known as Imvamune or Imvanex) is a 2-dose series that can be given unless there is allergy to any vaccine component. JYNNEOS™ is a non-replicating (also called replication-deficient) live virus vaccine. There is no visible "take" and no risk for spread to other parts of the body or other people. JYNNEOS™ is considered safe for administration to those with weakened immune systems. JYNNEOS™ has been administered in the US and other countries without safety concerns identified following administration.

People who received JYNNEOS™ are not considered fully protected until 2 weeks after they receive the second dose of vaccine. The standard regimen for JYNNEOS™ involves a subcutaneous route of administration (SQ) with an injection volume of 0.5 mL or the alternative regimen involving intradermal (ID) administration with an injection volume of 0.1 mL may be used. The choice for JYNNEOS™ administration route should be determined between patient and vaccinating provider.

Replicating vaccine such as ACAM2000 is not currently being used in Washington State (it may be available at military facilities). If replicating vaccines are distributed in the future, it is important to note that replicating vaccine is **contraindicated** for those with immunodeficiency. Due to risk of severe infection (progressive vaccinia) with replicating vaccine virus, it **should not** be given to a contact with weakened immune systems, including patients with leukemia, lymphoma, organ transplantation, generalized malignancy, HIV/AIDS, cellular or humoral immune deficiency, radiation therapy, or treatment with antimetabolites, alkylating agents, high-dose corticosteroids (>10 mg prednisone/day or equivalent for ≥ 2 weeks) or other immunomodulatory drugs. Persons with atopic dermatitis, eczema or other exfoliative skin conditions should not receive a replicating vaccine like ACAM2000. In August 2024, the US FDA approved a new indication for ACAM2000 to prevent mpox, but at this time, WA DOH is not recommending the use of ACAM2000 for the reasons previously mentioned.

Receiving two doses of JYNNEOS is important to maximize protection. Patients should also be aware that even a complete vaccine series (two doses) does not provide 100% protection against mpox. If post-vaccination mpox infection occurs, the patient might experience a milder course of illness because of their preexisting immunity.

At this time, booster doses are not recommended for the general population. There are some instances where booster doses are appropriate for laboratory workers at high risk for orthopoxvirus infection and those who work with high concentrations of virus. See CDC mpox vaccination considerations for more information.

More detailed DOH guidance is available on use of the JYNNEOS vaccine. CDC provides detailed guidance on mpox vaccination; see also the Vaccine Information Statements (VIS).

3. CASE DEFINITIONS

The situation is currently still evolving; case definitions may change in the future.

A. Case Definition

Note that a person's categorization may change as the investigation continues (e.g., a person may go from Suspect to Probable). Also note exclusion criteria below.

Suspect case:

- New characteristic rash* OR
- Meets one of the epidemiologic criteria and has a high clinical suspicion for mpox [Clinical suspicion may exist if presentation is consistent with illnesses confused with mpox (e.g., secondary syphilis, herpes, and varicella zoster)].

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
  - 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 mpox (monkeypox) virus DNA by polymerase chain reaction testing or Next-Generation sequencing of a clinical specimen OR isolation of mpox (monkeypox) virus in culture from a clinical specimen

B. Epidemiologic Criteria for Diagnosis

Within 21 days of illness onset:

- Reports having had contact with a person who had 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.)

C. Exclusion Criteria

A case may be excluded as a suspect, probable, or confirmed mpox case if:

- An alternative diagnosis* can fully explain the illness **OR**
- An individual has symptoms consistent with mpox but does not develop a rash

within 5 days of illness onset **OR**
- High quality specimens do not demonstrate the presence of orthopoxvirus or mpox (monkeypox) virus or antibodies to orthopoxvirus

D. 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 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 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 ≥180 days prior to symptom onset.

Confirmed 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.

Note: DOH is only counting and reporting confirmed and probable cases to CDC.

* 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 (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.

† 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.

E. Interim Case Definitions for Clade I Mpox

Suspect case, Clade I:

- Probable or confirmed case of mpox as defined in section (3A) AND
- At least one of the clade I epidemiologic criteria defined below.

Probable case, Clade I:

- Probable or confirmed case of mpox as defined in section (3A) AND
- At least one of the clade I epidemiologic criteria defined below AND
- Clade I and clade II MPXV-negative by polymerase chain reaction testing without Next-Generation sequencing of clinical specimen to confirm clade.

Confirmed case, Clade I:

- Demonstration of the presence of clade I MPXV DNA by polymerase chain reaction testing OR
- Next-Generation sequencing of a clinical specimen.

Clade I Epidemiologic Criteria:

Within 21 days of illness onset:

- Traveled to an area with evidence of sustained human to human transmission of clade I mpox or where clade I MPXV is endemic OR
- Reports having contact with person with confirmed, probable, or suspect clade I mpox OR
- Had close or intimate in-person contact with individuals in a social network currently experiencing clade I mpox activity OR
- Had contact with a dead or live wild animal or exotic pet that is a central African endemic species or used a product derived from such animals (e.g., game meat, creams, lotions, powders, etc.)

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

Testing for MPXV is done at multiple clinical laboratories, commercial laboratories, and Washington State Public Health Laboratories (WAPHL). A decision to test is based on the provider's assessment. WAPHL has an assay that can detect non-variola orthopoxvirus, clade II MPXV, and clade Ia MPXV. Specimens positive for Orthopoxvirus are forwarded to WAPHL or University of Washington Virology for confirmation as MPXV and for clade determination.

B. Services Available at the Washington State Public Health Laboratories (WAPHL)

WAPHL can confirm Orthopoxvirus, rule out smallpox virus, confirm clade II MPXV,

and confirm clade Ia MPXV to diagnose a confirmed case with the approval of local health jurisdictions and WA DOH staff. Additional testing such as whole genome sequencing for some specimens, serology, microscopy, and culture is done at CDC and some research laboratories.

Note that WAPHL requires all clinical specimens to have two patient identifiers, a name **and** a second identifier (e.g., birth date) on both the specimen label and submission form. Due to laboratory accreditation standards, specimens will be rejected for testing if not properly identified. For swabs also include the specific body site (e.g., left arm).

See WAPHL Laboratory Test Menu for specimen collection and submission instructions for testing at WAPHL. For testing at other commercial labs, please obtain guidance from the performing laboratory.

See also CDC guidance on collecting and handling specimens.

C. Specimen Collection for WAPHL

Use appropriate personal protective equipment when collecting specimens. For WAPHL obtain 2-4 specimens from separate lesions. Scrub the lesion firmly with a swab to collect human cells. Avoid the use of sharps; it is not necessary to unroof the lesion, though if the lesion becomes unroofed due to swabbing this will not impact the test results. If no lesions exist, scabs can be tested with prior approval – call WAPHL at 206-418-5562 if this is the only specimen collection option. Oral or rectal swab are **not** acceptable specimens unless there is a visible lesion to swab. Place a specimen in a screw-top vial with viral transport medium (**not** universal transport medium – CDC will not confirm specimens in UTM) or into a dry vial. Refrigerate specimens within one hour of collection. If specimen will **arrive** within 24 hours of collection, specimens can be shipped refrigerated. Otherwise freeze all specimens to -70º C to -20º C (except serum, which can be refrigerated if it will arrive within seven days of collection).

See additional DOH guidance for details of specimen collection including storage and shipping temperatures.

Label each specimen container with two identifiers (e.g., name and date of birth), collection date, and the body site of the lesion (e.g., “left hand second digit”). Each specimen should be packaged with its form in a separate bag. Multiple specimen bags can be combined in a secondary bag or container. See WAPHL Laboratory Test Menu for specimen collection and submission instructions for testing at WAPHL.

5. ROUTINE CASE INVESTIGATION

A. Evaluation of Suspect Cases

Evaluation of suspect cases will often be conducted by healthcare partners. However, if a local health jurisdiction is asked to assist in evaluation of a suspect case, the investigator may wish to interview the person and others who may be able to provide pertinent information, as well as review available medical records including digital photographs of a rash and epidemiologic information including risk factors. Consider obtaining information regarding:

- Symptoms preceding the rash including the first symptom and the date it occurred. Did the person have a fever, headache, muscle aches, backache,

swollen lymph nodes, malaise/exhaustion, respiratory symptoms (sore throat, nasal congestion, cough)?
- Description of the rash (Deep-seated and well-circumscribed? What stage/stages? Progression from macular and papular to vesicular and pustular? Lesions on a body part occur at the same stage? Painful or itchy?)
- Body part where the first lesion occurred.
- Body parts now affected.
- Underlying medical conditions, particularly any immunosuppression
- Any history of smallpox vaccination? If so, date(s) and type?
- Travel history, especially for areas where mpox is endemic.
- Sexual history.

Depending on the clinical context other potential diagnoses to consider might include varicella (chickenpox or zoster, i.e., shingles); hand, foot, and mouth disease; measles; scabies; molluscum contagiosum; herpes simplex; allergic skin rashes; syphilis or other STIs; drug eruptions; polymorphic eruption of pregnancy. Note that dual infections can occur (e.g., herpes and mpox).

Advise use of appropriate personal protective equipment (PPE) when evaluating the patient and obtaining specimens for MPXV testing and for other potential causes. PPE used by healthcare workers should include: gown, gloves, eye protection (i.e., goggle or a face shield that covers the front and sides of the face), and NIOSH-approved particulate respirator equipped with N95 filter or higher (see CDC infection control guidance). The person should be in home isolation while testing is pending and should be provided information about infection prevention, including measures to reduce further spread of the rash to themselves or others (see below for more details on infection prevention), especially if clade I mpox is suspected.

B. Obtaining Laboratory Testing

Providers can order testing through clinical laboratories without consultation, though it is recommended that providers use laboratories that have clade determining testing, especially if they suspect clade I. Advise the provider to consider additional testing for alternative diagnoses associated with rashes such as syphilis, herpes, or chickenpox. Providers should also consider concurrent testing for HIV and other applicable sexually transmitted infections. Given the increased risk of severe mpox and the concurrent risk factors, nearly all patients with mpox should be tested for HIV; if HIV testing was not performed prior to diagnosis with mpox, encourage providers to complete HIV testing urgently (unless there is a clear reason not to test for HIV). When a patient is diagnosed with mpox, providers should also consider evaluation for other potential immunocompromising conditions and take steps to optimize immune function (if possible) for immunocompromised patients.

If testing at Washington State Public Health Laboratories is being requested, local health jurisdictions should contact DOH (mpoxconsult@doh.wa.gov or 206-418-5500) for approval prior to submitting specimens. While testing and evaluation are being conducted, the person should be in home isolation (see Section E below) and can be considered for treatment before test results are available (below).

If orthopoxvirus or MPXV testing is positive, the person should continue home isolation through the end of their contagious period (see the Infection Prevention section for more information). If orthopoxvirus or MPXV testing is negative, an alternative diagnosis should be pursued, and the need for continued home isolation determined based on clinical suspicion or alternate diagnosis (e.g., varicella).

If a false positive result is suspected, check the PCR Ct value. A Ct value of ≥34 may indicate a false positive (e.g., low level of viral DNA that may represent cross-contamination). Re-extract and rerun a specimen with a high Ct value and suspected false positive result (i.e., person at low risk); see MMWR for more information.

C. Providing Consultation on Clinical Management

Healthcare partners should contact public health to discuss clinical management of people with risk factors for severe disease or clinical evidence of severe disease. CDC has issued special clinical considerations for persons who are:

- Living with HIV and other immunocompromising conditions: Promptly offer treatment if infected or vaccination (post-exposure prophylaxis) if a close contact. If a person develops mpox, the rash may be atypical (e.g., disseminated, confluent). Monitor people with mpox closely, particularly if their HIV infection is inadequately treated. Never give ACAM2000 (replicating vaccine) to any person with HIV infection or to their close contacts. For details see CDC guidance and MMWR.
- Children and adolescents: Children are thought to have a higher risk of severe disease, so it is important for a person with mpox to isolate from children in the household. Data for pediatric infections are limited, but rare complications could include abscess, airway obstruction due to severe lymphadenopathy, cellulitis, corneal scarring, keratitis, encephalitis, pneumonia, or sepsis. For details see CDC guidance.
- Pregnant or breastfeeding: Other Orthopoxvirus infections are known to be more severe during pregnancy. Prioritize pregnant and breastfeeding persons for treatment. Viral transmission can occur in utero or perinatally, or with close contact during breast feeding. Stillbirth, preterm delivery, and neonatal infections have been reported. For details see CDC clinical guidance.

Tecovirimat (TPOXX) is a novel antiviral that was made available for treatment of confirmed or suspected mpox infection under protocols for Expanded Access Investigational New Drugs (EA-IND), which requires informed consent and various forms. Tecovirimat can be obtained through the EA-IND protocol. Healthcare workers and medical facilities need to enroll in the TPOXX IND Registry in order to prescribe TPOXX through the EA-IND protocol.

Patients who have one or more of the following characteristics will be eligible to receive open-label TPOXX through the EA-IND protocol:

- Severe immunocompromising conditions: (e.g., advanced/uncontrolled HIV, leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, high-dose corticosteroids, being a recipient with hematopoietic stem cell transplant <24 months post-transplant or ≥24 months but with graft-versus-host disease or disease relapse, or having autoimmune disease with

immunodeficiency as a clinical component).

- Active skin condition affecting skin integrity: (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 lactating individuals.
- Patients less than 18 years of age.
- Protracted or life-threatening manifestations: (e.g., lesions affecting more than 25% of body surface, disease resulting in airway compromise of affecting the nervous system, cardiac and/or neurologic disease, ocular or periorbital infection).

Patient visits can be conducted via telemedicine and laboratory testing is optional. Healthcare providers should seek tecovirimat from their local health jurisdiction. CDC is available for consultation if needed for prescribing tecovirimat (TPOXX), which can be given in oral (better absorption if taken after a high fat meal) or IV form (LHJs can call CDC's Emergency Operation Center at 770-488-7100 or email poxvirus@cdc.gov and ask for a clinical consultation). Tecovirimat can be prescribed for children >3 kg and adults, with the IV formulation contraindicated for creatinine clearance <30 ml/min. It is strongly recommended that providers who will be prescribing tecovirimat work through their local health jurisdiction. Local health jurisdictions needing assistance with obtaining tecovirimat can email mcm@doh.wa.gov with the nature of your request. Local health jurisdictions can order tecovirimat for pre-positioning in certain situations.

When considering the use of tecovirimat, clinicians and patients should understand 1) the lack of data on tecovirimat effectiveness in people with mpox, 2) the lack of data indicating which patients might benefit the most from tecovirimat, and 3) the concern for resistance to tecovirimat, which could render the drug ineffective for any treated patients. Initial analysis of data from two randomized control trials (PALM007 and STOMP) showed that tecovirimat was safe, but that it did not reduce the time to resolution of mpox lesions in those who received tecovirimat compared to those who received placebo. These findings suggest that most people with mild symptoms of mpox will recover with supportive care and pain management. Future studies need to determine whether tecovirimat is an effective treatment for patients with severe disease and immunocompromising conditions. See CDC guidance on tecovirimat use and on obtaining tecovirimat.

For patients who do not meet EA-IND eligibility criteria, supportive care and pain management will help most patients with mpox recover.

For patients with ocular involvement, consult CDC for use of trifluridine (Viroptic) to treat ocular complications. For patients with disease progression on tecovirimat or other unusual situations, consult CDC for assistance considering other potential treatments. See CDC guidance on management of ocular mpox.

Local health jurisdiction investigators and tribal public health staff in Washington can also contact DOH to request clinical consultation either by email (mpoxconsult@doh.wa.gov) or by calling 206-418-5500 to reach the clinical epidemiologist on-call. Note: jurisdictions where previously pre-positioned on hand supply of oral TPOXX has been exhausted or has expired may request a one-time

contingency order of up to 20 bottles (not for immediate patient care) of oral TPOXX through the US Administration for Strategic Preparedness and Response (ASPR).

D. Infection Prevention Recommendations

A person being tested for mpox should isolate until test results are available, especially if clade I is suspected. If the test is positive, the person should isolate at home until all scabs are dried and shed, and healthy skin has formed (2-4 weeks).

The virus spreads in the body systemically, but theoretically auto-inoculation could occur into cuts or mucous membranes. Recommend that the patient not use contact lenses while lesions are present; if they must use contact lenses, they should adhere to strict thorough hand hygiene when touching the lens or eye. The patient should consider not shaving, since small cuts could be infected by contaminated towels or garments.

A person in isolation should take steps to prevent transmission. Avoid close contact with others. Do not engage in sexual or intimate activities. Wear a tight-fitting mask when around others at home. If possible, use a separate bathroom. Cover lesions as much as possible with clothing or bandages. The person should also wear a mask and cover lesions if they need to leave home for follow-up medical care. Follow strict hand hygiene, particularly after touching lesions or potentially contaminated fabric or items. Do not share dishes or utensils. Clean and disinfect counters, surfaces, light switches, and handles frequently with appropriate household disinfectants (below). Avoid shaking out dirty fabric. Wash potentially contaminated clothing or bedding separately with detergent in hot water, and dry in a clothes dryer on a hot setting. Put shed scabs or bandages from lesions in a plastic zip bag, seal, and discard in a dedicated lined trash can, then clean any potentially contaminated surface. Consider use of disposable gloves if there are lesions on the hands. Waterproof mattress covers, blankets, coversheets, or other barriers can be used on upholstered furniture. Environmental sampling in one residential setting found PCR- positive but culture-negative swabs throughout the household (see MMWR).

In particular, the person with mpox should avoid contact with anybody who has a weakened immune system, or who is pregnant or breast-feeding. The person should also avoid contact with wild or domestic mammals including pets (see Section F below). Household members should limit contact with the infected person, their garments, and their towels and bedding, and if possible, not share a bathroom. Use an EPA-registered disinfectant (below) in shared spaces to clean a shower, toilet, sink, faucet, or counter.

For infection prevention at home see CDC guidance. The EPA also provides information on appropriate disinfectants. CDC provides separate guidance on infection prevention in healthcare settings.

A person being tested for mpox or diagnosed with mpox should avoid public transit. If they must take public transit for essential activities (i.e., healthcare appointments), they should wear a well-fitting mask at all times and cover all areas of skin that have a rash. CDC provides additional guidance about preventing transmission to others. CDC advises that persons with mpox not travel; however, federal public health travel restrictions (Do Not Board and Public Health Lookout [DNB/LO]) will not be used to restrict the travel of all individuals with mpox. If a person must travel, persons with mpox should be afebrile, not have any respiratory symptoms, and be advised to cover all

their lesions and wear a well-fitting mask during travel. DNB/LO will be considered only for persons with suspected/probable/confirmed mpox who meet at least one of the following criteria: currently has a fever, currently has respiratory symptoms, is unable/unwilling to wear a mask during travel or is unable/unwilling to cover lesions. In addition, at least one of the following must be met: not aware of diagnosis or aware of diagnosis but not following public health recommendations, likely to travel on a commercial flight involving the United States or travel internationally by any means, or travel restrictions are needed to respond to a public health outbreak or health enforce a public health order. LHJs may email travelhealth@doh.wa.gov for additional guidance or for DNB/LO orders

E. Notification Processes LHJ notification to DOH

Local health jurisdiction staff should notify DOH immediately of a probable or confirmed case through the Washington Disease Reporting System (WDRS).

DOH and LHJ notification to Tribes of cases for which Tribes might have jurisdiction

If requested by a Tribe, DOH will alert the designated contact at each Tribe when a probable or confirmed case reported in WDRS is possibly a member of said Tribe or a person who resides within the Tribe's jurisdiction. These potential tribal cases will be identified with: 1) a residential zip code that overlaps tribal boundaries; **or** 2) a zip code for a post office covering mailboxes only in counties that the tribal lands overlap. DOH is also providing Tribes with read/write access to WDRS for all cases in counties that overlap tribal lands so Tribes can access these cases.

Local health jurisdictions **should not** proactively ask about tribal membership during a case investigation. However, if a person chooses to provide information during a case investigation that identifies them as a tribal member or as residing on tribal lands, local health jurisdiction staff **should notify the Tribe**. Local health jurisdictions **should not** record tribal affiliation in WDRS or other data systems. To avoid duplication, Tribes and local health jurisdictions should develop processes in partnership for designating which jurisdiction will investigate cases in tribal members who do not reside on tribal lands.

DOH notification to Tribal Epidemiology Centers (TECs) of cases in individuals who identify as American Indian or Alaska Native:

If requested, DOH will alert a designated contact at the Northwest Tribal Epidemiology Center (NWTEC) and/or the Urban Indian Health Institute (UIHI) of a probable or confirmed case with race information indicating American Indian or Alaska Native identity. The race information will be identified either from Electronic Laboratory Reporting, case investigation, or manual data entry by a local health jurisdiction. NWTEC will be provided read access to WDRS for these cases.

F. Conducting Case Investigation and Contact Tracing

As with other communicable diseases, there are several goals when conducting case investigation and contact tracing:

Identify potential sources of infection

Ask about exposures during the 21 days prior to symptom onset:

1. Travel particularly outside the United States including to a country with

confirmed cases or with endemic mpox.

a. Determine dates and locations of travel including: country, city, and any large gatherings or special events attended.

b. Obtain air travel information: date, time, flight number, city of departure, city of arrival, seat number, if known names of those in adjacent seats.

2. Sexual or intimate contacts.
3. Contact with a person having known mpox or with a person having a similar rash.
4. Recently received or in contact with a person who received smallpox vaccination with a live virus vaccine.

Identify potentially exposed persons

Ask the case-patient or a person under investigation to identify their close contacts. Potentially exposed close contacts are those who: had sexual contact; touched the rash or affected skin; had prolonged skin-to-skin contact by activities such as hugging, cuddling, or kissing; or shared eating utensils, towels, clothes, or bedding. Ask about: household members and overnight guests, sexual partners and sexual contacts, travel or healthcare or dental visits, industry and occupation, in-person meetings or events, contact sports like basketball or wrestling, or staff providing personal care like hair dressing, massage, or health services. If air travel is identified, obtain air travel information: date, time, flight number, city of departure, city of arrival, seat number, and if known names of those in adjacent seats. Also determine if the person wore a mask and covered all lesions. Report case-patients who traveled by air travel to DOH CDE by emailing mpoxconsult@doh.wa.gov.

Once exposed close contacts are identified, assess their degree of exposure and their health status for risk of severe disease to determine whether prompt mpox post-exposure prophylaxis (PEP) with vaccination is appropriate (see below). Conduct interviews with close contacts and enroll them in symptom monitoring.

Identify additional individuals at risk (cluster investigation)

If possible, broaden the interview to identify individuals in the case-patient's sociosexual network who, although not exposed to mpox by the case-patient, would benefit from mpox vaccination. This approach is called cluster investigation; identified individuals are termed “cluster contacts”. These individuals might include friends, partners of sex partners, prior sexual partners, people who attend the same venues and events, or otherwise have similar risks. Cluster contacts can then be contacted and referred for vaccination. Vaccination of these individuals can both protect them and reduce transmission in the sociosexual network. Identified cluster contacts may also benefit from other preventive health services, such as HIV and STI screening, HIV pre-exposure prophylaxis (PrEP), and the use of doxycycline as post-exposure prophylaxis (doxy PEP).

A similar process of broadening the interview to identify cluster contacts can be used during close contact interviews. This approach will help identify additional individuals who would benefit from mpox vaccination as well as other preventive health services, such as HIV and STI screening, HIV pre-exposure prophylaxis (PrEP), and the use of

doxycycline as post-exposure prophylaxis (doxy PEP).

Depending on impacted population (e.g., men who have sex with men), LHJs should consider using LHJ Disease Intervention Specialist (DIS) staff for case and contact investigations. LHJ staff should assess for risk of HIV/STIs and refer for testing and treatment accordingly.

During cluster investigation outreach as well as broader community message, avoiding stigma is essential. Community partners can help develop effective messaging. CDC provides information about safe social gatherings and safer sex.

G. Close Contact Exposure Recommendations

Close contact can be defined in the following levels of risk:

- High risk of exposure:
  - Contact between an exposed individual's broken skin or mucous membranes with the skin lesions or bodily fluids from a person with mpox OR
  - Any sexual or intimate contact involving mucous membranes (e.g., kissing, oral-genital, oral-anal, vaginal, or anal sex [insertive or receptive]) with a person with mpox, OR
  - Contact between an exposed individual's broken skin or mucous membranes and the materials (e.g., linens, clothing, objects, sex toys) that have contacted the skin lesions or bodily fluids of a person with mpox (e.g., sharing goods, handling or sharing of linens used by a person with mpox without having been disinfected or laundered).
- Intermediate risk of exposure:
  - Contact between an exposed individual's intact skin and the skin lesions or bodily fluids from a person with mpox.
  - Contact between an exposed individual's intact skin and the materials (e.g. linens, clothing, sex toy) visibly contaminated with bodily fluids or lesions, exudates, or crusts from a person with mpox without having been disinfected or laundered.
  - Contact between an exposed individual's clothing and the skin lesions or bodily fluids from a person with mpox.
  - Contact between an exposed individual's clothing and the materials (e.g. linens, clothing, sex toy) visibly contaminated with bodily fluids or lesions, exudates, or crusts from a person with mpox without having been disinfected or laundered.
  - Being within 6 feet of a person with mpox who has laryngeal disease, cough, respiratory symptoms, or oral lesions for an extended period of time (three hours or more).
- Uncertain to minimal risk of exposure:
  - Entry into the living space of a person with mpox (regardless of whether the person with mpox is present), and the absence of any exposures above, OR
  - Contact between an exposed individual's intact skin or clothing and the intact skin or clothing of a person with mpox who has completely covered lesions (e.g., bandaged, covered with clothing).

- No identifiable risk of exposure:
    - No contact with the person with mpox, their potentially contaminated materials, and only transient time spent within 6 feet of the person with mpox.

Note, the exposure risk level of any incident may be recategorized to another risk level at the discretion of the healthcare provider or local health jurisdiction due to the unique circumstances of each exposure incident.

Those who had high or intermediate risk of exposure with a person who has confirmed or probable mpox should:

- Be notified of their exposure.
- Receive post-exposure prophylaxis ideally within 4 days from last exposure to prevent onset of disease, and if not 4-14 days from last exposure to reduce the symptoms of disease.
- Monitor symptoms for 21 days after last exposure and receive MPXV testing should they develop any symptoms.
    - Monitoring should be conducted by public health unless alternate arrangements are made.
- Continue daily activities as long as they do not any mpox signs or symptoms.
- Not donate blood, cells, tissue, breast milk, semen, or organs during the symptom monitoring period.
- Consider whether to limit activities that would place them at risk of transmitting mpox to vulnerable populations such as those who are immunocompromised or young children.

It is up to the local health jurisdiction to determine if those who had uncertain to minimal risk of exposure with a person who has confirmed or probable mpox receive notification of their exposure and whether their symptoms should be monitored. It is not recommended that individuals at this risk level receive post-exposure prophylaxis.

Should a close contact develop any new or unexplained rash during their monitoring, they should:

- Follow isolation and prevention guidance practices until their rash can be evaluated by a healthcare provider, testing is performed (if determined to be necessary by a healthcare provider), and the result of testing are available and negative.
- Cover all parts of the rash with clothing, gloves, or bandages, and wear a mask if they need to leave isolation to seek out medical care or other emergent needs.
- Not scratch the rash as this can risk spread to other parts of the body, increase the chance of spreading virus to others, and may cause lesions to become infected by bacteria.

Should a close contact develop other symptoms, but there is no rash, they should:

- Follow isolation and prevention practices for 5 days after the development of any new symptom, even if this 5-day period extends beyond the original 21-day monitoring period.
    - If 5 days have passed without the development of any new symptom and

a thorough skin examination reveals no skin changes such as rashes or lesions, isolation and prevention practices for mpox can be stopped.
    - Isolation precautions may be discontinued prior to 5 days if mpox has been ruled out.
- If a new symptom develops again at any point during the 21-day monitoring period (including during a 5-day isolation, if applicable), then a new 5-day isolation period should begin where the individual follows isolation and prevention practices.
- An individual should be advised to contact their healthcare provider as needed.

For more information see CDC guidance on symptom monitoring for the public and for health departments.

For healthcare workers with occupational exposure, see Section 6A: Managing Special Populations.

H. Providing Post-Exposure Prophylaxis (Vaccination)

Prompt mpox **post-exposure prophylaxis (PEP)** with appropriate vaccines may reduce the chance of infection or severe illness in persons exposed to MPXV. CDC recommends PEP vaccination within four days from the date of exposure to prevent onset of the disease. If given within 4-14 days after the date of exposure, vaccination may reduce the symptoms of disease, but may not prevent the disease. PEP is recommended for asymptomatic persons including close contacts or healthcare personnel who had direct contact with lesions, scabs, crusts, or bodily fluids, or who had over 3 hours of unprotected respiratory exposure (see 5C and 6A). The dosing schedule for PEP vaccination with the JYNNEOS™ vaccine is a 2-dose series, given at a 28-day interval. If the exposed individual develops symptoms of mpox prior to receiving PEP vaccination, they should not be vaccinated. If the exposed individual receives dose 1 of PEP and then develops mpox, in most circumstances they should not receive dose 2 (if the individual is immunocompromised, they may be eligible to receive dose 2 after individual consultation and shared decision-making with a healthcare provider).

To more accurately reflect mpox vaccination strategy, WADOH transitioned from utilizing the term expanded PEP or PEP++ to instead identify those who remain at high risk of exposure. The goal remains to reach additional persons with risk factors that might expose them to mpox even if they have not had a documented exposure to someone with a confirmed diagnosis and to reach people with risk factors for infection before they are exposed. Outreach to and vaccination of individuals who meet the categories detailed in section 2I should be prioritized.

Health care providers are able to purchase JYNNEOS off of the commercial market. Local health jurisdictions and WADOH might be able to support or provide guidance. Email mpoxconsult@doh.wa.gov for any questions.

CDC provides detailed guidance on mpox vaccination and also provides information for health departments. See also the Vaccine Information Statements (VIS).

Vaccinia immune globulin intravenous (VIGIV) can be considered for prophylactic use in an exposed person for whom PEP vaccination following exposure to mpox is contraindicated.

Report vaccine adverse events to VAERS

I. Zoonotic and Environmental Evaluation

Animal-related issues

Infection has been documented in rodents and non-human primates, but all mammals should be considered susceptible to mpox infection. Persons with mpox should take steps to avoid infecting pets, domestic animals, and wildlife. Notify Office of CD Epi Zoonotic Disease (206-418-5500) for an animal exposed to a human case. For detailed guidance see DOH and CDC guidance.

Environmental issues (also see Section 5D above)

Persons in isolation should separate from others, do their own laundry, and safely dispose of scabs, bandages, and potentially contaminated materials. Virus may persist weeks or months. Standard household disinfectants should be used on contaminated surfaces, with frequent cleansing of counters, surfaces, light switches, and door handles. See CDC guidance on infection control in the home.

6. MANAGING SPECIAL SITUATIONS

A. Occupational Exposures in Healthcare Workers

Correct and consistent use of PPE when caring for a patient with mpox or working with materials which have been in contact with those patients 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 to healthcare workers. Therefore, in the absence of an exposure described below, healthcare workers who enter a contaminated patient room or care area while wearing recommended PPE should be aware of the signs and symptoms of mpox; if any signs or symptoms of mpox occur, healthcare workers should notify occupational health services for further evaluation and should not report to work (or should leave work, if signs or symptoms develop while at work).

CDC Guide to Assessing Risk of Healthcare Workers with Occupational Mpox (Monkeypox) Virus Exposures to Guide Monitoring and Recommendations for Postexposure Prophylaxis

Risk level of exposure	Exposure characteristics	Recommendations
Higher	- Unprotected contact between an exposed individual's broken skin or mucous membranes and the skin lesions or bodily fluids from a patient with mpox (e.g., inadvertent splashes of patient saliva to the eyes or mouth of a person), or soiled materials (e.g., linens, clothing), OR	Persons: - Should be monitored for 21 days after last exposure [by public health or occupational health]. - Can continue their daily activities (e.g., go to work or school) as long as they do not have signs or symptoms consistent with mpox. PEP (vaccination) should be recommended.

Intermediate	- Being inside the patient's room or within six feet of a patient with mpox during any medical procedures that may create aerosols from oral secretions (e.g., cardiopulmonary resuscitation, intubation), or activities that may resuspend dried exudates (e.g., shaking of soiled linens), without wearing a - NIOSH-approved particulate respirator with N95 filters or higher and eye protection., OR - Unprotected contact between an exposed individual's intact skin and the skin lesions or bodily fluids from a patient with mpox, or soiled materials (e.g., linens, clothing), OR - Activities resulting in unprotected contact between an exposed individual's clothing and the patient with mpox's skin lesions or bodily fluids, or their soiled materials (e.g., during turning, bathing, or assisting with transfer) OR - Examining the oral cavity of a person with mpox with oral or laryngeal lesions while not wearing all recommended PPE	Persons: - Should be monitored for 21 days after last exposure [by public health or occupational health]. - Can continue their daily activities (e.g., go to work or school) as long as they do not have signs or symptoms consistent with mpox. Consider offering PEP (vaccination); informed clinical decision making recommended on an individual basis to determine if the benefits of PEP outweigh the risk.
Uncertain/ Lower	- Unprotected contact with a person with mpox who has completely covered lesions (e.g., bandaged, covered with clothing), AND no contact with their skin lesions bodily fluids, or any materials (e.g., linens or clothing) visibly contaminated with body fluids, dried lesion exudate, or crusts.	Persons: - Should be monitored for 21 days after last exposure. - Can continue their daily activities (e.g., go to work or school) as long as they do not have signs or symptoms consistent with mpox. PEP not recommended.
None	- No contact with the person with mpox, their potentially contaminated surfaces or materials, and at most only transient time spent around the person with mpox.	Persons:. - Can continue their daily activities (e.g., go to work or school) as long as they do not have signs or symptoms consistent with mpox.

		Monitoring and PEP not recommended.

Asymptomatic healthcare workers (HCW)with exposures to MPXV do not need to be excluded from work, but should be monitored (e.g., at least a daily self-assessment conducted by the exposed healthcare worker for signs and symptoms of mpox) for 21 days after their last exposure. If symptoms develop, HCW should be managed as described below. If mpox is ruled out, they may still have work restrictions recommended if their diagnosis is one where restriction from work is recommended (e.g., varicella).

During the 21-day monitoring period:

- If a rash occurs, HCW should:
  - Inform occupational health program
  - Be excluded from work until (1) the rash can be evaluated, (2) testing is performed, if indicated, and (3) the results of testing are available and negative.
- If other symptoms are present, but there is no rash, HCW should:
  - Be excluded from work for 5 days after the development of any new symptom, even if this 5-day period extends beyond the original 21-day monitoring period.
    - If 5 days have passed without the development of any new symptom and a thorough skin examination reveals no skin changes, HCW could return to work with permission from their occupational health program.
  - If a new symptom develops again at any point during the 21-day monitoring period, then HCW should be excluded from work and a new 5-day isolation period should begin.

Healthcare workers with mpox should be excluded from work until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath. Ultimately, the decision on when to return to work will be made with their occupational health program, and potentially with input from public health authorities.

See CDC guidance on healthcare worker exposures for more information.

B. Investigation of potential Mpox reinfection

A number of cases of probable mpox reinfection have been reported during the 2022 outbreak. It is possible that people who are immunosuppressed will be at higher risk of reinfection. Regardless of immune function, people with prior mpox who develop a new rash consistent with mpox should be tested for MPXV.

When a new positive test is reported for a person with a prior positive test, LHJs should investigate to determine whether the new positive result likely represents persistent viral shedding from the initial infection vs. a reinfection. The following information may be

helpful in determining the level of suspicion for reinfection:

- Clinical rationale for the most recent positive test
- Patient's current signs and symptoms
- Clinical details of the patient's initial/prior infection (e.g., severity, lesion sites, complications)
- Whether the patient had full resolution/healing of lesions in the initial/prior illness episode
- Information on any immunocompromising conditions
- Information on the lesion site tested and on specimen collection procedure for the most recent positive test
- Cycle threshold (CT) value for the most recent positive test
- Information on any potential recent exposures

If an mpox reinfection case is suspected, please contact DOH Clinical Epidemiology (mpoxconsult@doh.wa.gov or 206-418-5500). A DOH clinical epidemiologist will consult with you and may recommend further testing (e.g., MPV sequencing or serologies) and/or consultation with CDC.

If the second/most recent positive test result likely represents persistent viral shedding from the initial infection, please notify the DOH WDRS team so that they can merge the cases in WDRS. This request can be made via the WDRS task functionality (preferred) or by contacting GCDWDRSDevelopers@doh.wa.gov. If using the WDRS task functionality, please assign tasks to "GCD Statewide Zoonotic Edit." Additional guidance and user instructions on creating and assigning tasks in WDRS can be found on the WDRS SharePoint site under "WDRS Training Videos."

C. Infection Control In Schools

School guidance for mpox infection control was created in partnership with the Office of Superintendent of Public Instruction.

Schools staff and school nurses should:

- Report any suspected cases of mpox to their local health jurisdictions.
- Make a referral to a licensed health care provider for any student with a new rash illness.
- If mpox is confirmed in a student who attended school, consult with your local health jurisdiction about next steps.
- Maintain and support confidentiality for students and/or staff.

Attention to the following routine hygiene efforts can help reduce the risk of mpox and other infectious diseases in schools:

- Exclude students with mpox from school until all lesions are healed, scabs have fallen off, and fresh skin has formed; this can take up to 4 weeks. If a student develops symptoms while at school, they should be separated from other students, wear a well-fitting mask (unless they are under 2 years old or have a disability that prevents them from masking) and be sent home from school.
- Students and staff who are exposed to mpox generally do not need to be excluded from school. LHJs may recommend limiting participation in normal activities if contact tracing is not possible or there was a high degree of

exposure leading to an increased risk of infection.
- Encourage students and staff to stay at home when sick.
- Provide access to handwashing supplies and encourage good hand hygiene.
- Maintain good cleaning and disinfecting routines, including sports equipment and uniforms.
- Use standard precautions for handling bodily fluids and items contaminated with bodily fluids. (See Safe Cleaning and Disinfecting Guidance for Schools).

See CDC Expectation for Mpox Transmission in Children for more information.

D. Reducing Mpox Transmission in Congregate Settings

The following considerations are recommended if someone with mpox is identified in a congregate setting. Congregate setting can include correctional and detention facilities, homeless/emergency/domestic violence shelters, transitional housing, group homes, dormitories at institutions of higher learning, seasonal worker housing, residential substance use treatment facilities, assisted living communities, hotels, motels, and hostels.

- Clear information about mpox and how it is spread should be provided to staff and residents.
- Test and evaluate staff and residents who are suspected to have mpox.
- Staff with symptoms should isolate away from the congregate setting while they await test results and continue to isolate if they test positive.
- Residents with symptoms should isolate away from others while they await test results and continue to isolate if they test positive until there is full healing of the rash with formation of a fresh layer of skin (2-4 weeks).
    - Some congregate settings may be able to provide isolation on-site while others may need to remove residents off-site to isolate. Isolation spaces should have a door that can be closed and a dedicated bathroom that other residents do not use.
    - Multiple residents who test positive for mpox can isolate in the same room.
    - Consult with your LHJ before ending a resident's isolation.
- Reduce the number of staff who enter isolation areas by limiting to only those who are essential to isolation area operations.
- Residents who are not under isolation should not enter isolation areas.
- Residents with mpox should help clean and disinfect isolation spaces to limit contamination if they are able to do so.
- Dedicated laundry space should be identified for residents in isolation. Refer to CDC Cleaning and Disinfecting guidance for more information.
- Waste management should continue as normal. Person with mpox should use a dedicated, lined trash can when isolating. Any gloves, bandages, or other waste items that came into direct contact with skin should be places in a sealed plastic bag and thrown away. Facility staff and person with mpox should use gloves when removing, handling, and disposing trash.

The following considerations are for when a staff member or resident may have been exposed to mpox.

- Work with your local health jurisdiction and monitor those who had close contact with someone who has mpox.
- Contact tracing should be implemented, if possible, to prevent transmission to additional people.
- Offer post-exposure vaccination for those who had direct contact to the person with mpox in a confidential setting.
- For those who spent time in the same area as someone with mpox should be monitored for symptoms and considered to have intermedia or low degree of exposure.
- Ensure that staff and residents have access to handwashing. Soap and water, or hand sanitizer with at least 60% alcohol should be made available. Anyone who touches the rash, clothing, linens, or surfaces that may have had contact with the rash, should wash their hands immediately.
- Provide appropriate personal protective equipment for staff entering isolation area.

See CDC considerations for reducing mpox transmission in congregate living settings for more information.

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UPDATES

June 2022: Separated from Rare Disease guideline and expanded

June 10, 2022: More details provided about symptoms (Section 2B); for case definition positive IgM also requires no suspicion of other recent Orthopox exposure, exclusion criterion for negative tests requires high-quality specimens (Section 3); swab specimens suggested 2-4, shipping changed to Category B (Section 4); updated recommendations for isolation, contact monitoring, and completion of isolation (Section 5C); zoonoses information expanded (Section 5F), public education added (Section 7A)

June 29, 2022: clinical description updated in Section 2B to include symptoms apart from typical presentation (can be shallow lesions, few lesions, multiple stages); specimen collection updated testing without unroofing lesions (Section 4); added antiviral and vaccine information (Section 5A, 5D); zoonotic information previously in Section 5F removed due to development of a separate guidance.

July 26, 2022: new CDC link for infection during pregnancy (Section 2B); added information about clinical testing outside of PHL (Section 4A); expanded details about appropriate patients for antiviral treatment (Section 5A); summary of CDC's more streamlined protocol for obtaining tecovirimat (Section 5D); expanded infection prevention in the home including avoiding self-inoculation (Section 5E): additional resources for preventing transmission (Section 6A).

August 5, 2022: changes to viral transport medium preferred to dry vial for PHL testing, scabs tested only with prior laboratory approval (Section 4)

August 17, 2022: added pregnancy-related resource (Section 2B); link added for new specimen submission form (Section 4C); citation for recommending treatment for pain control (Section 5A); added VIGIV as post-exposure option in Section 5D.

October 25, 2022: updated incubation period to 3-21 days; case counts updated Section 2; added timeline table for rash progression (Section 2B); additional CDC links in Section 2B; additional detail related to evaluation of suspect cases (Section 5A); added recommendations for additional testing dependent on risk population (Section 5B); referenced MMWR related to false positives (Section 5B); additional detail for clinical management of special populations (Section 5C); additional clarification for considerations in using tecovirimat (section 5C); added link to online request form for TPOXX and link to guidance for EA-IND forms (section 5C); added detail regarding the use of public transit and a reference for environmental sampling results reported for a residential setting (Section 5D); added new information regarding tribal notifications (Section 5E); included detail and new guidance on cluster contact investigations, examples of close contacts, and recommended public health action by type of contact (Sections 5F and 5G); updates to use of post-exposure vaccine (Section 5H); added recommendations for assessing risk for healthcare providers with MPV exposure and recommended public health actions and monitoring (Section 6A); added CDC link for settings servicing children (Section 7B); updates to pre-exposure vaccine recommendations and added detail clarifying pre-exposure vaccine for healthcare workers (Section 7C).

November 2, 2022: minor edits to correct hyperlinks and streamline terminology

December 20, 2022: for WAC revision combined provider and facility reporting requirement, updated laboratory submission (Section 1B); minor reorganization of content; addition of recommendations for potential MPV reinfection, change in terminology given renaming of disease to mpox

March 7, 2023: added information on pre-symptomatic transmission

March 19, 2024: updated incubation period to 3-17 days (Section 2F); updated epi criteria to be less stigmatizing for the LGBTQ+ community (social network experiencing mpox) and included contact to animal products (Page 1), provided reinfection guidance and case definition for reinfection (Sections 3D and 6B), updated specimen and shipping guidance, Clade I update and guidance (Page 1 and Section 2A), throughout changed MPV (the virus that causes mpox) to MPXV to align with CDC and changed when referring to the diseased caused by the virus to mpox, updated mpox etiology to align more with common symptoms during 2022 outbreak such as rectal pain, rectal bleeding, etc. (Section

2B), updated vaccine recommendations and vaccine strategy to align with current guidance (Section 2I), updated guidance for close contacts and exposure notification during case investigations (Section 5G), updated vaccine strategy (Section 5H), removed section for mpox within educational setting as CDC no longer as up to date guidance for these settings. Throughout changed/updated broken links.

October 24, 2024: added information about respiratory transmission and transmission during air flight (Section 2E); updated immunization section to align with WA DOH guidance and booster dose information (Section 2I); added interim case definitions for clade I mpox (Section 3E); added clade determination testing recommendation and updated testing at WA PHL (Section 4, 5A, and 5B); updated proper PPE for healthcare workers (Section 5A); updated TPOXX section due to narrowing of EA-IND protocols (Section 5C); added guidance for clade I infection prevention (Section 5D); updated close contact exposure recommendations to align with CDC guidance (Section 5G); moved vaccine product information to section 2I and updated ACAM2000 information (Section 5H); updated occupational exposure risk level to align with CDC (Section 6A); added infection control guidance in schools (Section 6C); added infection control guidance for congregate settings (Section 6D). Changed/updated broken links throughout the document.

December 17, 2024: removed information about STOMP clinical trial and results from initial analysis on TPOXX efficacy (Section 5C)