

West Virginia Monkeypox Update

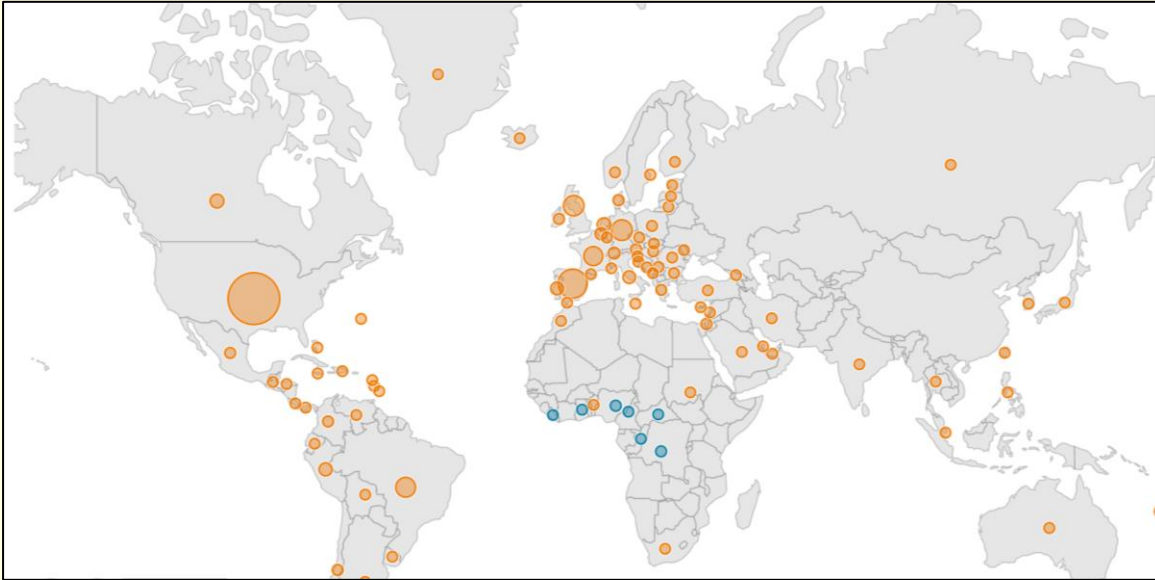
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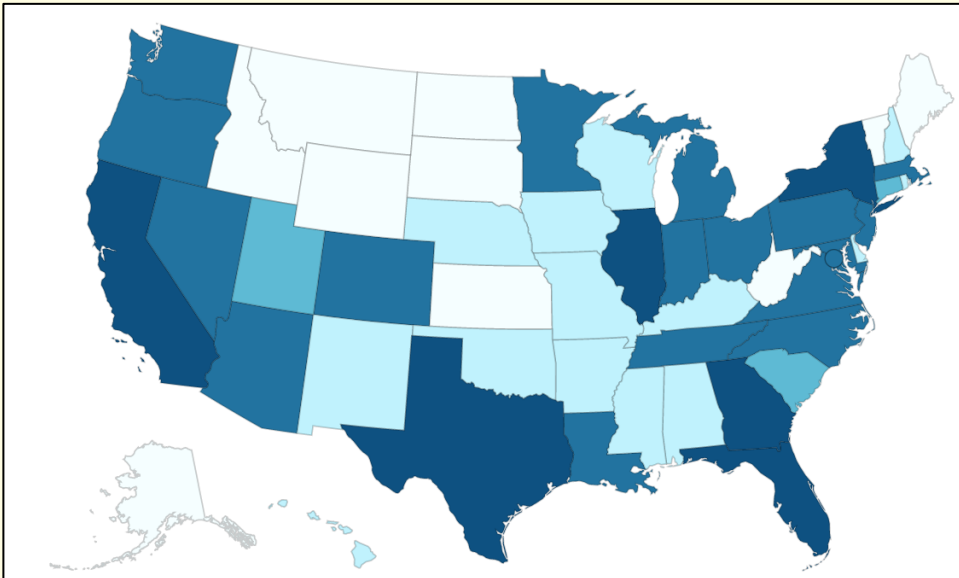
Objectives

1. Describe the epidemiology of the 2022 monkeypox outbreak
2. Recognize the common clinical presentations of monkeypox infections in the 2022 outbreak
3. Describe diagnostic testing recommendations and treatment options for monkeypox infections
4. Summarize monkeypox vaccination recommendations and vaccine access

2022: Current Situation

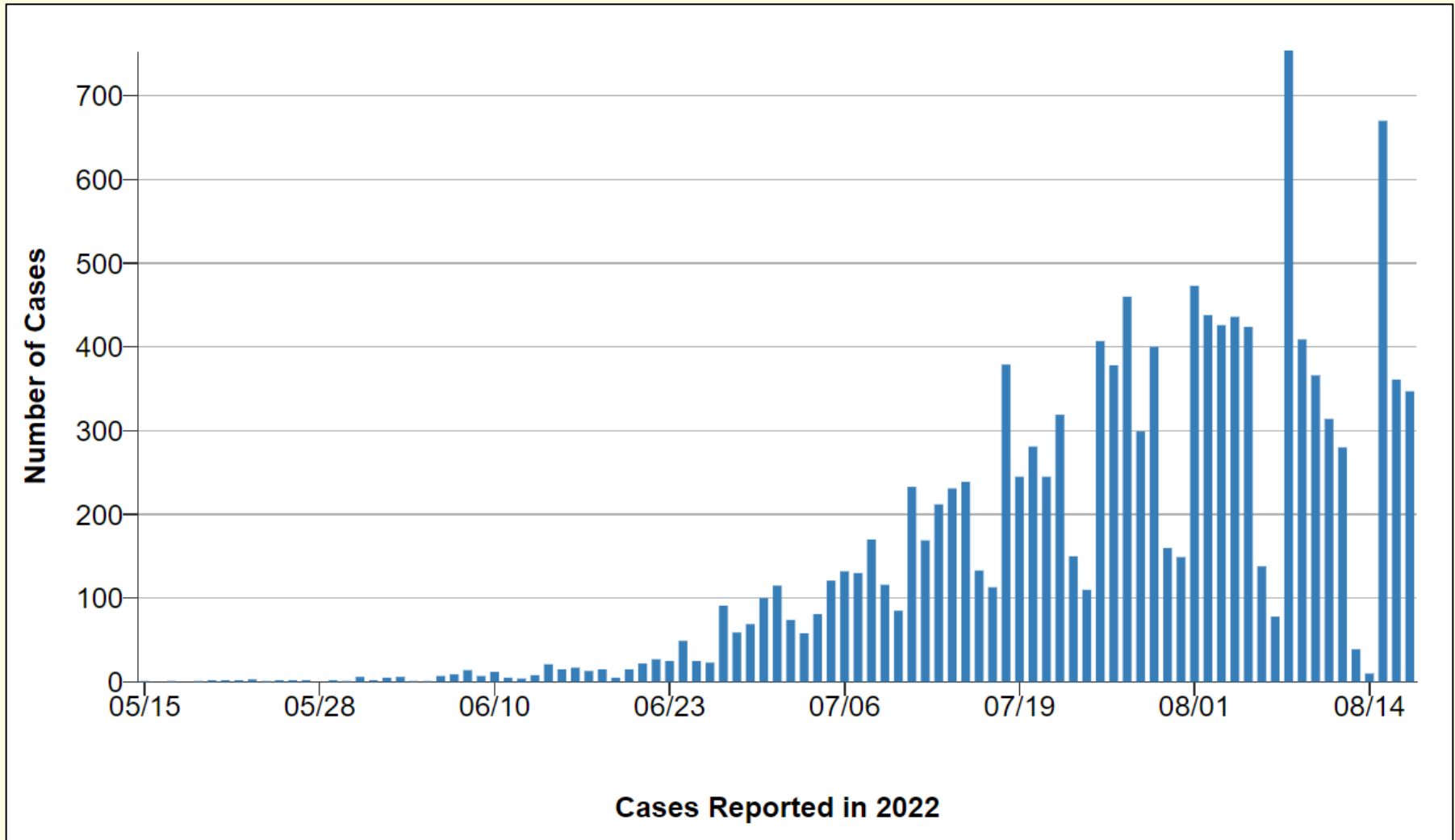


WORLDWIDE
42,567 cases have been confirmed in 88 countries where monkeypox is not endemic, resulting in 12 deaths.



UNITED STATES
15,433 cases have been confirmed (monkeypox/orthopoxvirus) in all states and there have been no deaths.

United States Monkeypox Cases



Epidemiology of the U.S. Outbreak

- Median age of patients is 35 years (range 18 to 76)
- 99% (n=624) reported male to male sexual contact
- Race
 - 38% (n=524) White/Non-Hispanic
 - 26% (n=358) Black
 - 32% (n=445) Hispanic (of any race)
- Initial patients reported international travel visiting countries not endemic to monkeypox and participating in large festivals and other activities
- Since late June, cases have been linked to local community transmission

West Virginia

West Virginia Monkeypox/Orthopox Cases as of August 22, 2022 (n=4)	
Number of Cases	4
Demographics	
Age Range	38-52
Mean (Median) Age	42 (42.5)
Male	4 (100%)
Race: White	3 (75%)
Black	1 (25%)
Hospitalizations	0
Deaths	0
Risk Factors	
MSM	3 (75%)
Travel	4 (100%)
Close Contacts	
Close Contacts Range	1-6
Mean (Median) Close Contacts	3.25 (3)

Monkeypox Virus

***Orthopoxvirus* genus**

- Genus includes variola virus (causes smallpox), vaccinia virus (used in smallpox vaccine), and cowpox virus

Two clades of monkeypox virus

- West African clade: historically, causes less severe disease which has been identified in the current outbreak
- Congo Basin clade: causes more severe disease

Transmission

- Person-to-person in current outbreak
- Close contact (lesions, body fluids, contaminated materials, large respiratory droplets)
- Incubation period is 3-17 days
- Infectious period is from symptom onset until skin lesions have scabbed over and fallen off

Prodrome

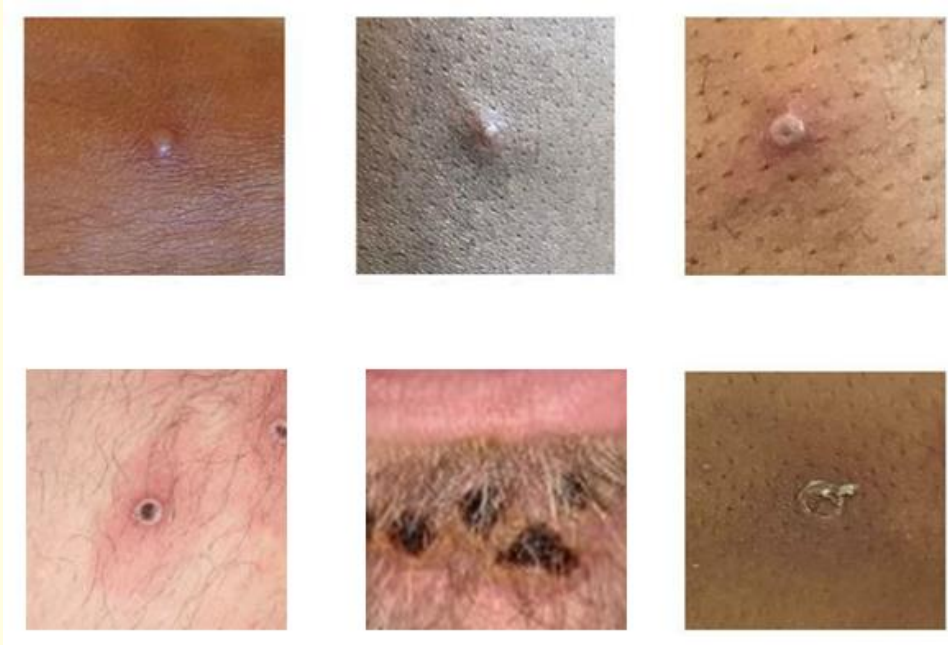
- Fever, chills, headache, myalgia, fatigue, swelling of lymph nodes
- Characteristic rash occurs 1-3 days after prodrome
- Illness is generally self-limiting and lasts 2-4 weeks
- Lesions can be very painful
- Differential diagnosis may include syphilis, herpes, chickenpox/shingles

Atypical presentations seen during current outbreak

- No prodrome
- Presentation of 1 or just few lesions that begin in the oral, perigenital and/peri-anal distribution
- Lesions in an area can be in different stages

Characteristic Rash

- Firm or rubbery, well circumscribed, deep-seated lesions appear like pimples or blisters, often develop umbilication (resembles a dot on the top of the lesion)
- Lesions often occur in genital anorectal area or in the mouth
- May only be a few lesions or a single lesion
- Rash does not always appear on palms



Within 21 days of illness onset:

1. **Close contact with someone with a rash** or who received a diagnosis of confirmed or probable monkeypox
2. **Sexual contact with someone in a social network experiencing monkeypox activity**, this includes men who have sex with men (MSM) who meet partners through an online website, digital application (“app”), or social event (e.g., a bar or party)
3. **Travel** outside the United States to a country with confirmed cases of monkeypox or where virus is endemic
4. **Animal exposure** 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.)

Public health testing is available through the West Virginia Department of Health and Human Resources' (DHHR) Office of Laboratory Services at no cost for the patient who meet the suspect case definition.

- Consult with the local health department because pre-approval is required
- In most instances testing turnaround is within 24 hours

Expanded access to monkeypox testing is available through commercial labs (LabCorp, Mayo, Qlabs, Sonic Healthcare, Quest, Aegis).

- Testing does not require pre-approval
- Testing is not free and out of pocket expenses vary
- Refer to lab for specific test ordering and specimen collection
- Labs send positive specimens to the Centers for Disease Control and Prevention (CDC) for additional characterization

At a minimum, collect two swabs from each lesion site sampled as follows:

1. Use a sterile synthetic swab to swab the lesion vigorously to collect adequate DNA. Do not use cotton swabs as cotton can inhibit real time PCR assays. Be sure to properly label the container with one patient identifier including lesion collection site (e.g., face, neck, left hand, etc.).
2. Place swabs in individual sterile containers. Do not add any viral or universal transport media.
3. Freeze (-20°C or lower) specimens within an hour after collection (if you do not have access to a -20°C or lower freezer, then refrigerate specimens within 1 hour). Shipping on dry ice is strongly recommended; however, refrigeration and shipping on ice packs for any facility that doesn't have access to a -20°C freezer or dry ice is acceptable.
4. Complete the WV Office of Laboratory Services Bioterrorism [Lab Clinical Specimen Submission](#) form.
5. Package the sample swabs in an insulated Category B box, with dry ice. If you do not have access to dry ice, samples may be shipped with several frozen packs.

Precautions for Preventing Transmission

- All suspect and confirmed cases of monkeypox are immediately reportable to the local health department

In addition to Standard Precautions:

- Notify infection prevention and control
- Suspected/confirmed patients should be placed in single room with dedicated bathroom
- Apply source control for patient movement including mask and having exposed skin lesions covered
- Procedures that are aerosol generating should be done in an airborne infection isolation room
- Personal Protective Equipment (PPE): gown, gloves, eye protection, and N95 mask

Monitoring Exposures

Anyone with an exposure to monkeypox should monitor their health for signs or symptoms consistent with monkeypox for 21 days after their last exposure.

If a rash occurs:

- An individual should isolate until the rash can be evaluate by a healthcare provider and testing can be done to rule out monkeypox

If other symptoms occurs:

- An individual should isolate for 5 days to see if a rash does develop, if a rash develops testing should be done to rule out monkeypox. If no rash develops the individual can be released from isolation.

Individuals exposed to monkeypox can continue to go to work and school as long as they do not have signs or symptoms consistent with monkeypox

Individuals with exposures should not donate blood, cells, tissue, breast milk, or semen while they are being monitored for symptoms.

Healthcare Personnel Exposure Risk Assessment



Monkey Pox-Infection Control and Prevention

Healthcare Personnel (HCP) Exposure Risk Assessment

July 2022

Any healthcare worker who has cared for a monkeypox patient should be alert to the development of symptoms that could suggest monkeypox infection, especially within the 21-day period after the last date of care, and should notify infection control, occupational health, and the health department to be guided about a medical evaluation. This healthcare personnel exposure risk assessment will assist in determining the degree of exposure and provide recommendations. Once the degree of exposure is determined, refer to right columns for recommendations.

	Exposure Risk Assessment	Symptom Monitoring	Post Exposure Prophylaxis (PEP)	Additional Recommendations
Exposure Risk-HIGH	<input type="checkbox"/> Unprotected skin or mucous contact to the patients skin, lesions, body fluid, or contaminated materials. (This may include sexual contact, inadvertent splashes of patient saliva to eyes or oral cavity, ungloved contact with patient linens, clothing, etc.). <input type="checkbox"/> Inside the patient's room or within 6 feet of patient during procedures that may create aerosols from oral secretions, skin lesions, or resuspension of dried exudates (shaking linen) without wearing an N95 or equivalent respirator (or higher) and eye protection. If any of the above are checked, the exposure is HIGH . Please follow the guidance. If you did not check any of the boxes, proceed to the next section.	Monitor symptoms for 21 days following last exposure including: <ul style="list-style-type: none"> • Fever (greater than or equal to 100.4°F or 38°C) • New lymphadenopathy (periauricular, axillary, cervical, inguinal) • New skin rash Self-isolate if any symptoms occur. Persons who report only chills or lymphadenopathy should remain at their residence, self-isolate for 24 hours, and monitor their temperature for fever; if fever or rash do not develop and chills or lymphadenopathy persist, the person should be evaluated by a clinician for the potential cause. Prior to reporting to work, screen/interview HCP regarding symptoms or rash.	Vaccine should be given within 4 days from the date of exposure for the best chance to prevent onset of the disease. May be given between 4 and 14 days after the date of exposure to help reduce the symptoms of disease but may not prevent the disease. Contact your LHD for eligibility and availability.	If symptoms develop and monkey pox is suspected, immediately notify your local health department. If you are unable to reach your local health department, please call 304-558-5358 Ext. 2. HCP should notify their infection control staff and occupational health if exposed. Asymptomatic HCP do not need to be excluded from work. Avoid contact with immunosuppressed people, individuals with a history of atopic dermatitis or eczema, those that are pregnant or breast feeding, and children under 8 years old where possible.

Close Contact Investigation Questionnaire

Monkeypox Close Contact Investigation Questionnaire

Hi, my name is (*investigator*), and I am calling from the (*enter local health department*). Am I speaking with (*name of case*)? I'm reaching out to you because you were diagnosed with monkeypox. We, along with CDC, are closely tracking cases of monkeypox that have been recently reported in several countries and cities, including West Virginia. Contacts of people who have monkeypox should be monitored for symptoms for 21 days after their last exposure. Contacts who remain asymptomatic can be permitted to continue routine activities (e.g., go to work or school). Transmission of monkeypox requires prolonged close contact with a symptomatic individual. Brief interactions do not warrant post exposure prophylaxis.

Degree of Exposure: High

Exposure Characteristics

- Unprotected contact between a person's skin or mucous membranes and the skin, lesions, or bodily fluids from a patient (e.g., any sexual contact, inadvertent splashes of patient saliva to the eyes or oral cavity of a person, ungloved contact with patient), or contaminated materials (e.g., linens, clothing) -OR-
- Being inside the patient's room or within 6 feet of a patient during any procedures that may create aerosols from oral secretions, skin lesions, or resuspension of dried exudates (e.g., shaking of soiled linens), without wearing an N95 or equivalent respirator (or higher) and eye protection -OR-
- Exposure that, at the discretion of public health authorities, was recategorized to this risk level (i.e., exposure that ordinarily would be considered a lower risk exposure, raised to this risk level because of unique circumstances)

Degree of Exposure: Intermediate

Exposure Characteristics

- Being within 6 feet for 3 hours or more of an unmasked patient without wearing, at a minimum, a surgical mask -OR-
- Activities resulting in contact between sleeves and other parts of an individual's clothing and the patient's skin lesions or bodily fluids, or their soiled linens or dressings (e.g., turning, bathing, or assisting with transfer) while wearing gloves but not wearing a gown -OR-
- Exposure that, at the discretion of public health authorities, was recategorized to this risk level because of unique circumstances (e.g., if the potential for an aerosol exposure is uncertain, public health authorities may choose to decrease risk level from high to intermediate)

Degree of Exposure: Low/Uncertain

Exposure Characteristics

- Entered the patient room without wearing eye protection on one or more occasions, regardless of duration of exposure -OR-
- During all entries in the patient care area or room (except for during any procedures listed above in the high-risk category), wore gown, gloves, eye protection, and at minimum, a surgical mask -OR-
- Being within 6 feet of an unmasked patient for less than 3 hours without wearing at minimum, a surgical mask -OR-
- Exposure that, at the discretion of public health authorities, was recategorized to this risk level based on unique circumstances (e.g., uncertainty about whether Monkeypox virus was present on a surface and/or whether a person touched that surface)

Environmental Infection Control

- Standard cleaning and disinfection procedures should be performed using EPA-registered hospital-grade disinfectant with an emerging viral pathogen claim ([EPA List Q](#))
- Soiled laundry should be contained never shaken in a manner that may disperse infectious material
- Avoid dry cleaning methods and focus on wet methods

Ending Isolation Precautions

For patients with suspected or confirmed monkeypox infection in a healthcare setting:

- Those with suspected monkeypox infection should have recommended isolation precautions for monkeypox maintained until monkeypox infection is ruled out
- Those with confirmed monkeypox infection should have recommended isolation precautions for monkeypox maintained until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath

- Currently there is no treatment approved specifically for monkeypox
- Antivirals developed for use in patients with smallpox may prove beneficial against monkeypox
- The CDC holds an expanded access investigational new drug ([EA-IND](#)) protocol that allows for the use of stockpiled TPOXX (also called Tecovirimat)

May be considered for treatment in people infected with monkeypox:

- With severe disease (e.g., hemorrhagic disease, confluent lesions, sepsis, encephalitis or other conditions requiring hospitalization)
- Who are at high risk of severe disease
 - People with immunocompromising conditions
 - Pediatric populations
 - Pregnant or breastfeeding women
 - People with a history of atopic dermatitis or people with other active exfoliative skin conditions
 - People with one or more complication
- Contact the local health department for assistance with coordination of TPOXX
- Pre-positioned supply will be available in-state for treatment
- Treatment with TPOXX medication can begin once informed consent is signed and returned

U.S. Department of Health and Human Services announced a nationwide vaccine strategy to mitigate the spread of monkeypox

- Vaccination and protection for those at-risk of monkeypox and prioritization of vaccines for areas with highest number of cases
- Tiered distribution system
- Although vaccine production levels are increasing, supply remains low
- JYNNEOS vaccine has been allocated to states from the strategic national stockpile

West Virginia Allocation

Under Phase 1: 0 vials authorized on June 29, 2022

Under Phase 2a: 237 vials authorized on July 9, 2022

Under Phase 2b: 190 vials authorized on July 15, 2022

Under Phase 3: 780 vials authorized on July 28, 2022

Under Phase 4: 1,025 vials authorized on August 22, 2022
(3 portions)

Monkeypox vaccine is not routinely recommended for the general public; it is intended to be used for specific groups at higher risk of exposure.

The following prioritization was developed in the context of limited vaccine supply:

1. Post-Exposure Prophylaxis (PEP)
2. Expanded Post-Exposure Prophylaxis (PEP++)
3. Pre-Exposure Prophylaxis (PrEP)

Limiting vaccination to traditional PEP may not be effective at controlling the current monkeypox outbreak; PEP++ may be more effective for this response.

Post-Exposure Prophylaxis (PEP)

- Goal is to vaccinate following known exposure to prevent illness or minimize severity of illness

Local health departments with probable or confirmed cases of monkeypox may issue standard PEP to individuals where the degree of exposure was determined to be HIGH.

- Unprotected contact between a person's skin or mucous membranes and the skin, lesions, or bodily fluids from a patient, or contaminated materials OR
- Being inside the patient's room or within 6 feet of a patient during any procedures that may create aerosols from oral secretions, skin lesions, or resuspension of dried exudates (e.g., shaking of soiled linens), without wearing an N95 and eye protection OR
- Exposure that, at the discretion of the health department, was recategorized to this risk level because of a unique situation

Vaccine works best when given quickly after exposure

- If given within 4 days of exposure: best chance to prevent onset of symptoms
- If given between 4 and 14 days of exposure: may reduce, but not prevent, symptoms

Expanded Post-Exposure Prophylaxis (PEP++)

- Individuals with certain risk factors may be considered for PEP++
- The goal is to reach the population at highest risk, even if they have not had documented exposure to someone with confirmed monkeypox
- Eligibility for monkeypox vaccination may change as the outbreak evolves or based on vaccine supply
- Individuals who have a condition that may increase their risk for severe disease if infected with monkeypox, such as HIV or another condition that weakens their immune system, or atopic dermatitis or eczema, should especially consider getting vaccinated

Current Eligibility for PEP++

- Gay, bisexual, or other men who have sex with men, and/or transgender, gender non-conforming, or gender non-binary, **AND**
- Have had multiple or anonymous sex partners in the last 14 days

Pre-Exposure Prophylaxis (PrEP)

- Goal is to vaccinate people whose jobs might expose them to monkeypox
- At this time, most U.S. clinicians and laboratorians are not advised to receive PrEP
- Response team members to be vaccinated for preparedness purposes is alignment with recommendations from the [Advisory Committee on Immunization Practices](#)
- Vaccination prior to vaccine administration is NOT required
- Eligible occupations include research laboratory personnel working with orthopoxviruses, clinical laboratory personnel performing diagnostic testing for orthopoxviruses, and designated local health department staff

Accessing Vaccine

- The US Department of Health and Human Services is working to increase vaccine supply to respond to the current outbreak
- JYNNEOS vaccine will be available at local health departments and some specialty clinic community partners
- Providers should make requests for vaccine as part of the public health investigation
- If you are a community partner that serves the at-risk population and would like to partner on vaccination efforts for PEP++, please contact your local health department

JYNNEOS Vaccine

- Licensed as a series of two doses administered 28 days (4 weeks) apart
- The standard regimen involves a subcutaneous route of administration with an injection volume of 0.5mL. The standard regimen is the U.S. Food and Drug Administration (FDA) approved dosing regimen
- On August 9, 2022, the standard regimen has been authorized for people aged <18 years under an Emergency Use Authorization (EUA)

Under the context of the current national Public Health Emergency (PHE), an alternative regimen may be used for people age ≥ 18 years under an EUA beginning August 9, 2022.

- Intradermal (ID) route of administration with an injection volume of 0.1mL
- Could increase the number of available doses by up to five-fold
- Studies showed that the lower intradermal dose was immunologically non-inferior to the standard dose

Vaccination Schedule and Dosing Regimen

JYNNEOS vaccine regimen	Route of administration	Injection volume	Recommended number of doses	Recommended interval between 1st and 2nd dose
Alternative regimen				
People age ≥ 18 years	ID	0.1 mL	2	28 days
Standard regimen				
<u>People age < 18 years</u>	Subcut	0.5 mL	2	28 days
People of any age who have a history of developing keloid scars	Subcut	0.5 mL	2	28 days

Anyone can get and spread the monkeypox virus

- To date, most cases in gay, bisexual, or men who have sex with men
- Infectious diseases do not affect or stay within one population
- It is important to educate the entire population about the symptoms and behaviors that can lead to the spread of monkeypox

Certain behaviors, rather than a specific group event, put people at increased risk of getting monkeypox

- It is important to emphasize that close and prolonged contact, including sexual contact, increases risk of getting monkeypox, rather than just attendance at an event
- You can combat stigma by providing fact-based information and emphasizing that monkeypox is a public health concern for everyone

Take Home Messages

- Risk to the general public is low
- When evaluating patients, have a high index of suspicion for monkeypox if characteristic rash is present
- Consult and collaborate with your local health department
- This is an evolving outbreak; stay updated on the latest information and recommendations on monkeypox:

<https://oeps.wv.gov/monkeypox/Pages/default.aspx>

<https://www.cdc.gov/poxvirus/monkeypox/index.html>

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