Philadelphia

PROJECT FIRSTLINE
CDC'S National Training Collaborative for Healthcare Infection Prevention & Control

NHMA
National Hispanic Medical Association
NHMA Philadelphia Chapter

SILAMP

Infection Prevention and Control:
Mpox

Philadelphia Grand Round Session

August 6 | 6 - 8 p.m. ET

Estia Restaurant
1405-07 Locust Street, Philadelphia, PA 19102

RSVP HERE

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In support of improving patient care, this activity has been planned and implemented by Amedco LLC and National Hispanic Medical Association. Amedco LLC is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team. Amedco Joint Accreditation #4008163.

Housekeeping

- Please hold all questions for the speaker to address during our Q & A session at the end of the presentation.
- Please complete the short pre & posttest that will be shared during the event.
  - Raffle prizes are available upon completion!

NHMA
National Hispanic Medical Association

Learner Notification

National Hispanic Medical Association
Philadelphia Chapter Infection Prevention Control Meeting
August 6, 2024
Philadelphia, PA

Acknowledgement of Financial Commercial Support

No financial commercial support was received for this educational activity.

Acknowledgement of In-Kind Commercial Support

No in-kind commercial support was received for this educational activity.

Satisfactory Completion

Learners must complete an evaluation form to receive a certificate of completion. Your chosen sessions must be attended in their entirety. You must attend the entire webinar as partial credit is not available. If you are seeking continuing education credit for a specialty not listed below, it is your responsibility to contact your licensing/certification board to determine course eligibility for your licensing/certification requirement.

Joint Accreditation Statement

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Professions in scope for this activity are listed below.

Amedco Joint Accreditation Provider Number: 4008163

Name	Commercial Interest:Relationship
Fredy Chaparro-Rojas, MD	NA
Vito Gearity	NA
Maegan Samuel	NA
Justin Kaiser	NA

Physicians

Amedco LLC designates this live activity for a maximum of 1.50 *AMA PRA Category 1 Credits™* for physicians. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Objectives - After Attending This Program You Should Be Able To

1. Discuss CDC best practices and recommendations for infection prevention & control (IPC) in healthcare settings
2. Formulate action plan to implement CDC IPC best practices and recommendations to address M-Pox.

Disclosure of Conflict of Interest

The following table of disclosure information is provided to learners and contains the relevant financial relationships that each individual in a position to control the content disclosed to Amedco. All of these relationships were treated as a conflict of interest, and have been resolved. (C7 SCS 6.1-6.2, 6.5)

Welcome!

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M pox

Clinical and Infection Prevention
Practices for Healthcare professionals

Fredy Chaparro-Rojas MD FACP

- *Project Firstline is a national collaborative led by the U.S. Centers for Disease Control and Prevention (CDC) to provide infection control training and education to frontline healthcare workers and public health personnel. The National Hispanic Medical Association is proud to partner with Project Firstline, as supported through NCEZID CK20-2003. CDC is an agency within the Department of Health and Human Services (HHS). The contents of this presentation do not necessarily represent the policies of CDC or HHS and should not be considered an endorsement by the Federal Government.*

Objectives

Enhance knowledge and understanding

By the end of the lecture, participants will be able to accurately describe the epidemiology, transmission mechanisms, and clinical manifestations of Mpox infection.

Improve Clinical and Public Health Practices

Participants will be equiped with the skills to implement effective prevention strategies including infection control measures, vaccination recommendations, as well as to manage cases through appropriate treatment protocols and patient care practices.

Mpox

WHAT IS IT?

SIGNS AND SYMPTOMS

HOW IT SPREADS

INFECTION CONTROL IN HEALTHCARE SETTINGS

TESTING

VACCINE

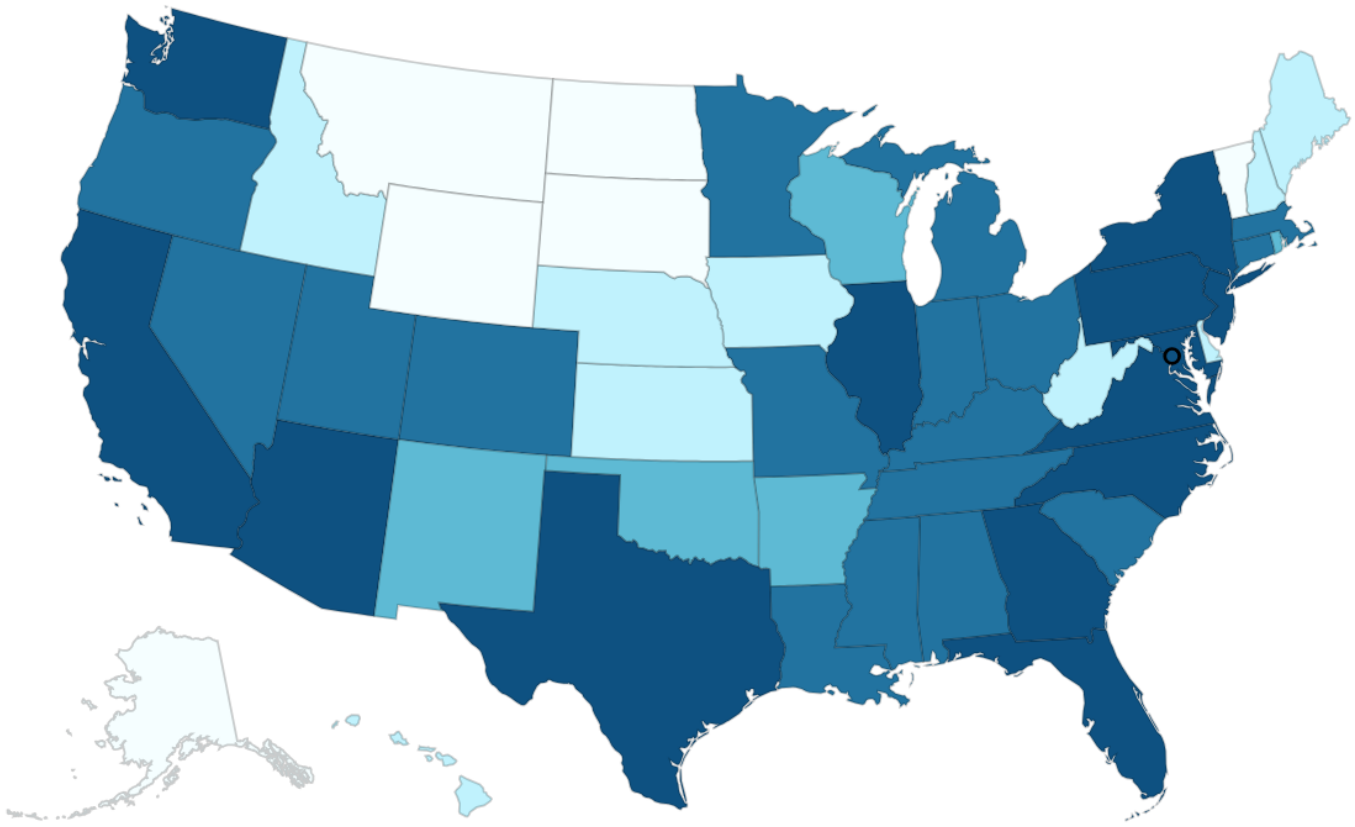
LABORATORY BIOSAFETY

What is it?

- Viral zoonotic infection that is caused by monkeypox virus and results in a rash similar to that of smallpox.
- Orthopoxvirus that is in the same genus as variola (the causative agent of smallpox) and vaccinia viruses.
- Two distinct strains of monkeypox virus have existed in different geographic regions of Africa
  - Clade I has been responsible for disease in the Congo basin (Central Africa)
  - Clade II has been isolated in West Africa (less virulent and lacks several genes present in the strain from Central Africa)
- Person-to-person spread outside the household and mortality from mpox are significantly less than for smallpox.
- Rash can also be similar in appearance to more common infectious rashes (DDx):
  - Secondary syphilis
  - Herpes simplex infection
  - Varicella-zoster virus infection

Mpox in US

U.S. Cases	U.S. Deaths
Total Cases	Total Deaths
32,063	58



Epidemiology

Historically, most cases of mpox have occurred in Central and West Africa. However, **since May 2022, there has been a global outbreak of Mpox in many nonendemic countries. On July 23, 2022, the World Health Organization (WHO) declared this outbreak a public health emergency of international concern.**

Prior to 2022, most cases in nonendemic countries were reported in travelers who were returning from endemic regions. There was also an outbreak of human Mpox in the United States in 2003 associated with infected prairie dogs who were exposed to imported animals from Africa.

Suspect Case:

New characteristic rash **OR**

Meets one of the epidemiologic criteria and has a high clinical suspicion for mpox

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**
- Demonstration of detectable levels of anti-orthopoxvirus IgM antibody during the period of 4 to 56 days after rash onset

Confirmed Case

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

- Epidemiologic criteria (Within 21 days of illness onset):
  - Reports having contact with a person or people with a similar 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.)

Signs and Symptoms

Clinical presentation and clues:

- Usually transmitted through close, sustained physical contact and has been almost exclusively associated with sexual contact in the 2022-2023 global outbreak.
- Take a detailed sexual history for any patient with suspected mpox.
    - 5 “Ps” may be a useful way to help you remember the major aspects of a sexual history.
        - Partners
        - Practices
        - Protection from STIs
        - Past History of STIs
        - Pregnancy Intention
    - Thorough skin and mucosal (e.g., oral, genital, anal) examination for the characteristic vesiculo-pustular rash of mpox.

Rash:

- Deep-seated and well-circumscribed lesions, often with central umbilication
- Lesion progression through specific sequential stages- macules, papules, vesicles, pustules, and scabs
- People with severe immunodeficiency (e.g., advanced HIV) may have skin lesions that are necrotic, diffuse, and plaque-like.

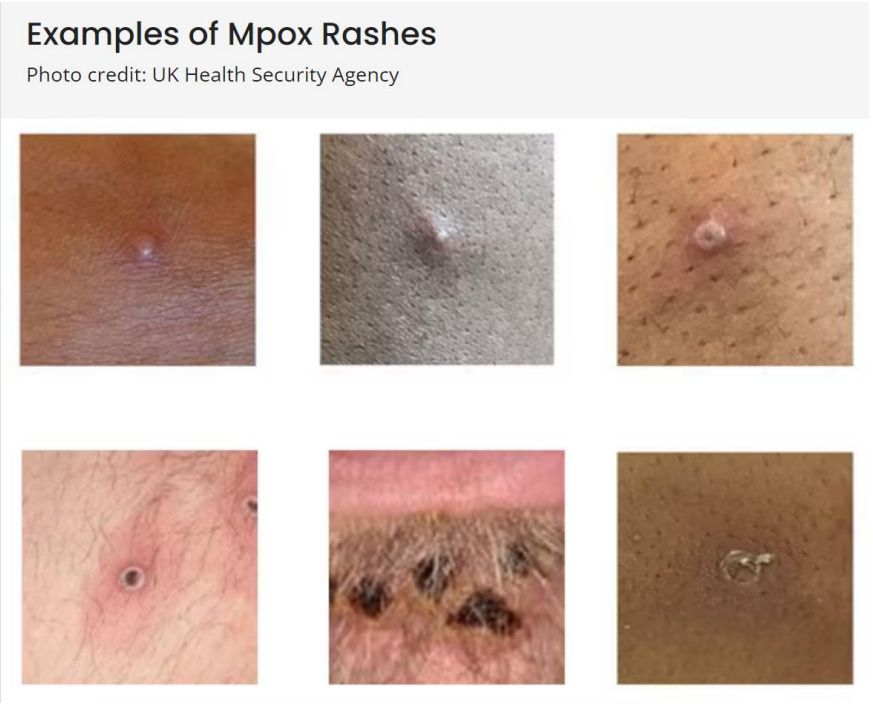
- During the current global outbreak:
  - Lesions often occur in the genital and anorectal areas or in the mouth.
  - Rash is **not always disseminated** across many sites on the body.
  - Rash may be confined to only a few lesions or only a single lesion.
  - Rash does not always appear on palms and soles.

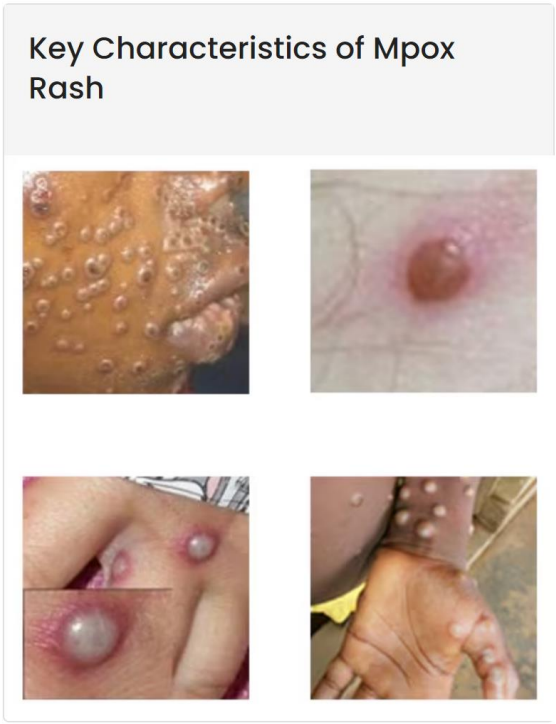
• Rectal symptoms (e.g., purulent or bloody stools, rectal pain, or rectal bleeding) have been reported in the current outbreak.

• Lesions are often described as painful until the healing phase when they become itchy (crusts).

• Fever and other prodromal symptoms (e.g., chills, lymphadenopathy, malaise, myalgias, or headache) can occur before rash but may occur after rash or not be present at all .

• Respiratory symptoms (e.g. sore throat, nasal congestion, or cough) can occur.

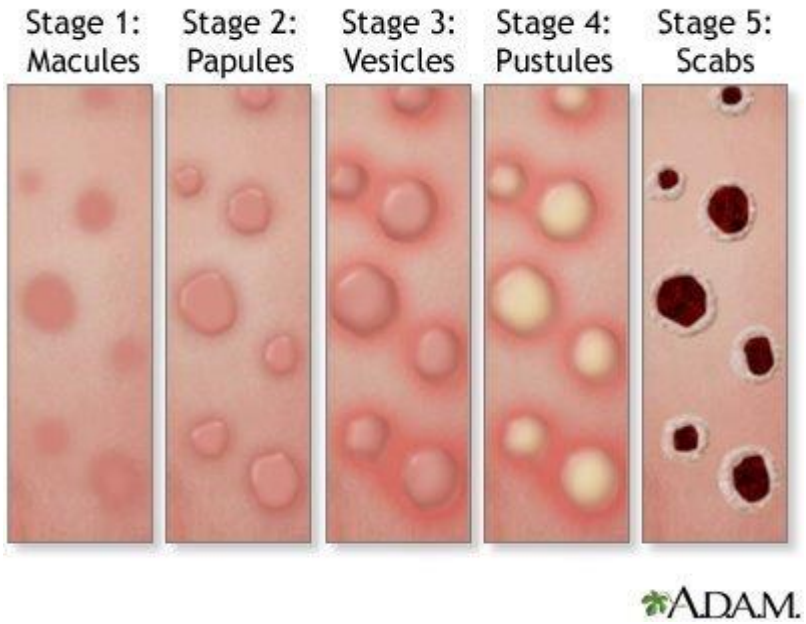




- The incubation period is 3-17 days. During this time, a person does not have symptoms and may feel fine.
- The illness typically lasts 2-4 weeks.
- The severity of illness can depend upon the initial health of the individual and the route of exposure. The West African virus genetic group, or clade, which is the clade involved in the current outbreak, is associated with milder disease and fewer deaths than the Congo Basin virus clade.

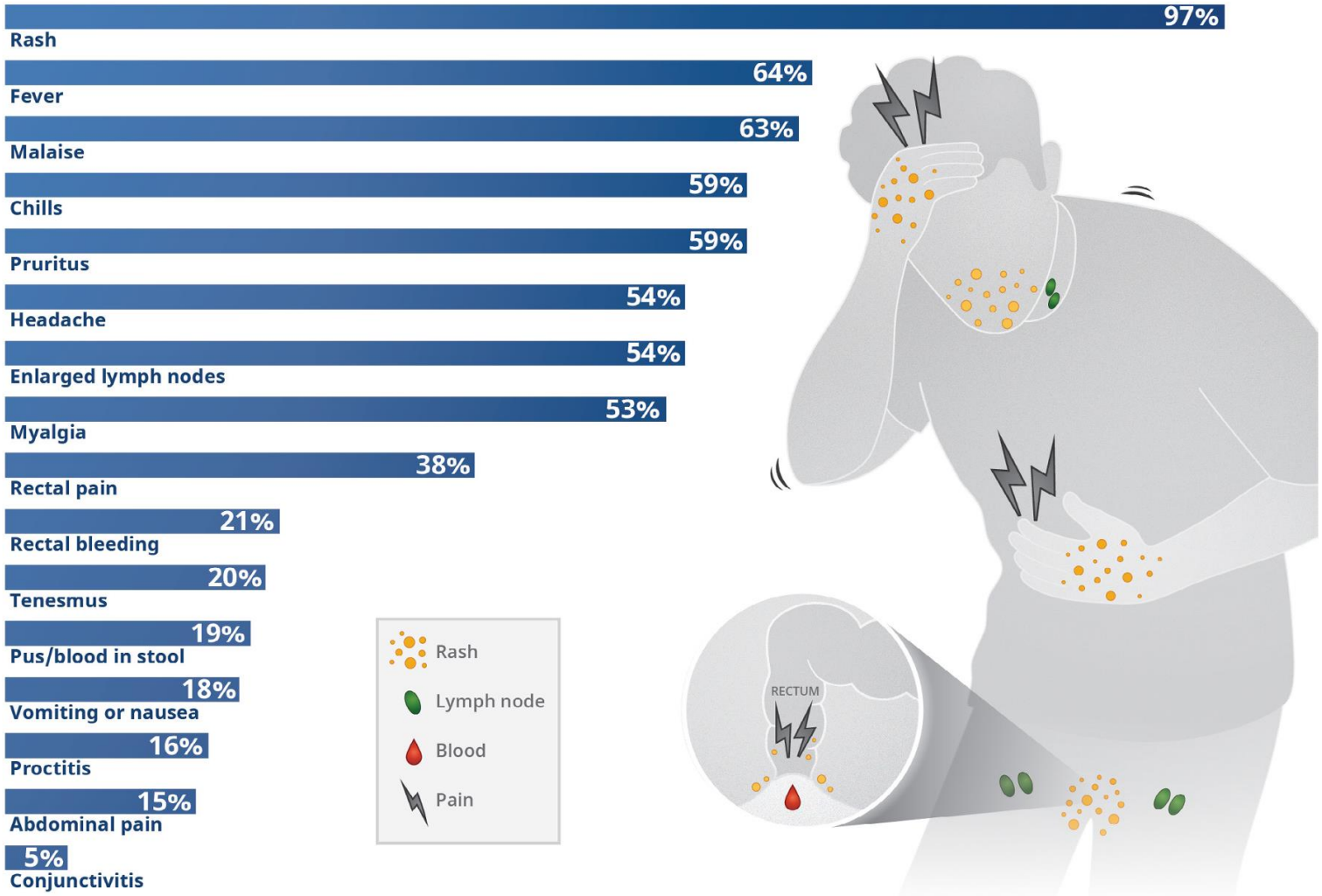
https://thelincolnite.co.uk/2022/06/second-monkeypox-case-reported-in-lincolnshire/

Stage	Stage Duration	Characteristics
Enanthem		• Sometimes, lesions first form on the tongue and in the mouth.
Macules	1–2 days	• Macular lesions appear.
Papules	1–2 days	• Lesions typically progress from macular (flat) to papular (raised).
Vesicles	1–2 days	• Lesions then typically become vesicular (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 to 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 beginning to fall off.



https://medlineplus.gov/ency/imagepages/19969.htm

MPOX CASES REPORTED TO CDC: SIGNS AND SYMPTOMS



Source: Centers for Disease Control and Prevention. Mpox cases reported to CDC: Signs and Symptoms, 2022 Outbreak Cases and Data. December 21, 2022.

Special populations

- Pregnancy
  - Unknown if pregnant people are more susceptible to MPXV or if infection is more severe in pregnancy.
  - Adverse pregnancy outcomes (spontaneous pregnancy loss and stillbirth), have been reported in cases of mpox during pregnancy. Preterm delivery and neonatal mpox have also been reported.
- Pediatrics
  - **Clinicians caring for children and adolescents with possible mpox should consult their jurisdictional health department to ensure that a public health investigation is performed. Once test results are known, it is important perform clinical management in collaboration with the jurisdictional health department. Health departments can facilitate consultation with CDC for additional guidance, if desired.**
- **People with HIV and immunocompromised**
  - People who are severely immunocompromised or have certain skin conditions are at risk of developing protracted or life-threatening manifestations of mpox regardless of disease severity at presentation.

How it spreads

- **Both clades** can spread through direct contact with infected wild animals, through close contact (including intimate or sexual contact) with a person with mpox, and through contact with contaminated materials.
- Close or Intimate Contact
  - Direct skin-to-skin contact with mpox rash or scabs
  - Contact with saliva, upper respiratory secretions and bodily fluids from genital area from a person with mpox
  - Pregnant people with mpox can pass the virus to the fetus during pregnancy or to the newborn during and after birth.
- Objects
  - Contact with objects, fabrics, and surfaces that have not been disinfected after use by someone with mpox. This includes items like clothing, bedding, towels, fetish gear, or sex toys.
- Infected Animals
  - Small wild animals in West and Central Africa, where mpox is endemic (found naturally).
  - Direct close contact with an infected animal, fluids or waste, or getting bitten or scratched.
  - Hunting, trapping, or processing infected wild animals in areas where mpox is endemic.
  - People are less likely to get mpox from a pet, but it’s possible. Close contact with a pet that is infected, including petting, cuddling, hugging, kissing, licking, and sharing sleeping spaces or food, can spread mpox to a person.
    - We don’t know for sure if pets like dogs and cats can be infected with *Monkeypox virus*, but it may be possible.
    - No pets or other animals were confirmed to have mpox during the global mpox outbreak that began in 2022.
- No studies have found a clear link between mpox and water in pools, hot tubs, or splash pads. The mpox virus is killed in water at the chlorine levels recommended for disinfection in recreational water venues by CDC and required by U.S. jurisdictions.

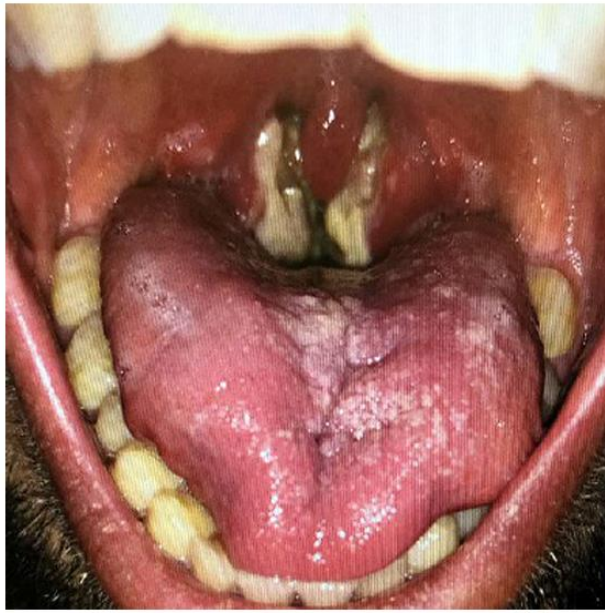
Infection Control in healthcare settings

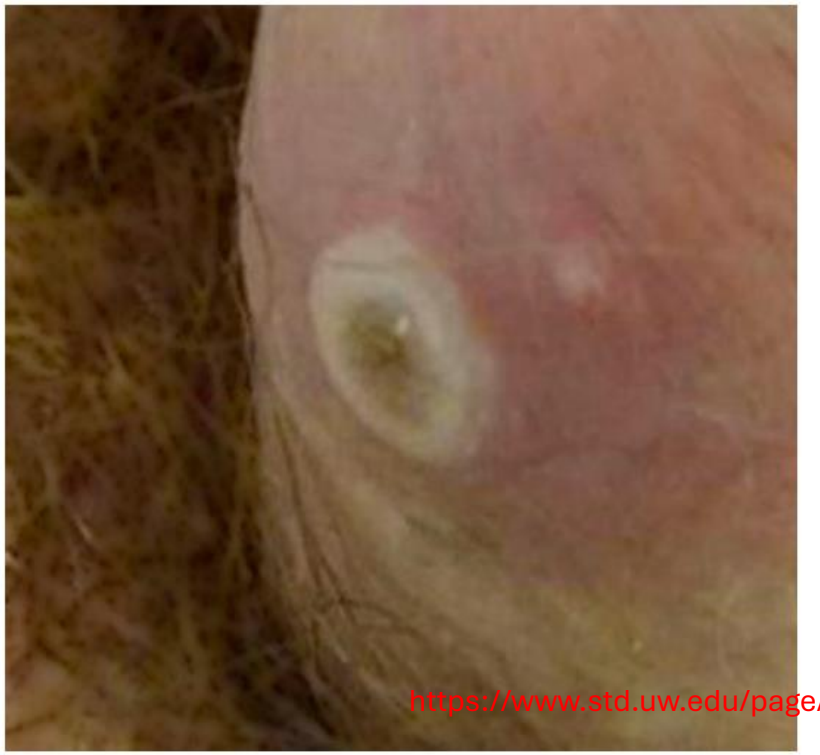
- 24 yo AA man, MSM, comes for evaluation of 5 days h/o skin lesions in right hand, described as tender blisters. He works in construction and thought they were related to jackhammer manipulation
- Sexually active with multipe partners

https://www.std.uw.edu/page/qb/question/2021-guidelines/mpox/4

Questions

- Now you are considering Mpox in the DDx.
- What measures are you considering before examining the patient?
- Isolation?
- PPE?
- Specimen collection?





https://www.std.uw.edu/page/clinical-guides/guides#mpox

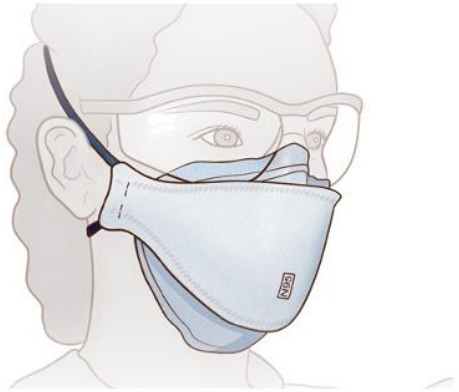
Rooming of patients

- Patients with suspected or confirmed mpox should be placed in a single-person room
- Special air handling (a negative pressure isolation room) is not necessary, except during intubation, extubation, and procedures that may spread oral secretions (e.g., induced sputum collection).
- Dedicated bathroom
- Transport and movement of the patient outside of the room should be limited to medically essential purposes. If the patient is transported outside of their room, they should use well-fitting medical mask and have any exposed skin lesions covered with a sheet or gown.

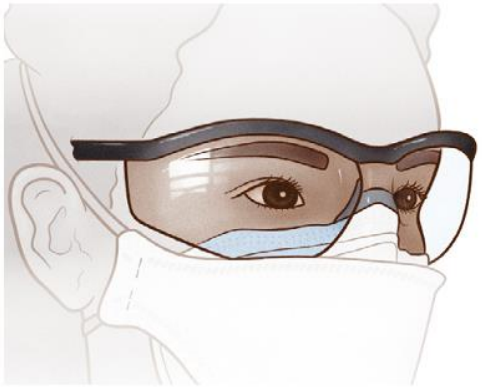
Personal protective equipment (PPE) to use

NOTE: Perform hand hygiene and then don PPE prior to entering patient room.

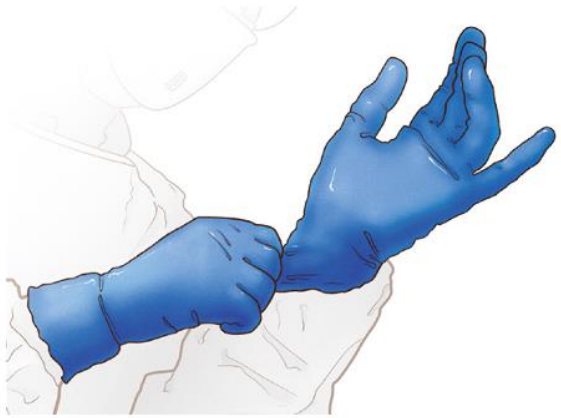
Full PPE



Fit tested NIOSH-approved respirator (equipped with a N95 filter or higher)



Eye protection (with coverage of front and sides of face)



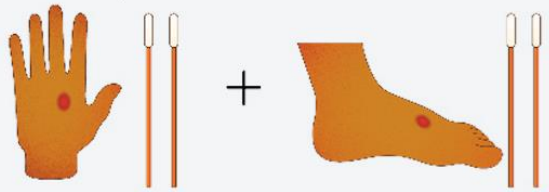
Gloves

Gown

https://www.std.uw.edu/page/clinical-guides/guides#mpox

OVERVIEW

Collect 2 specimens from at least 2 lesions



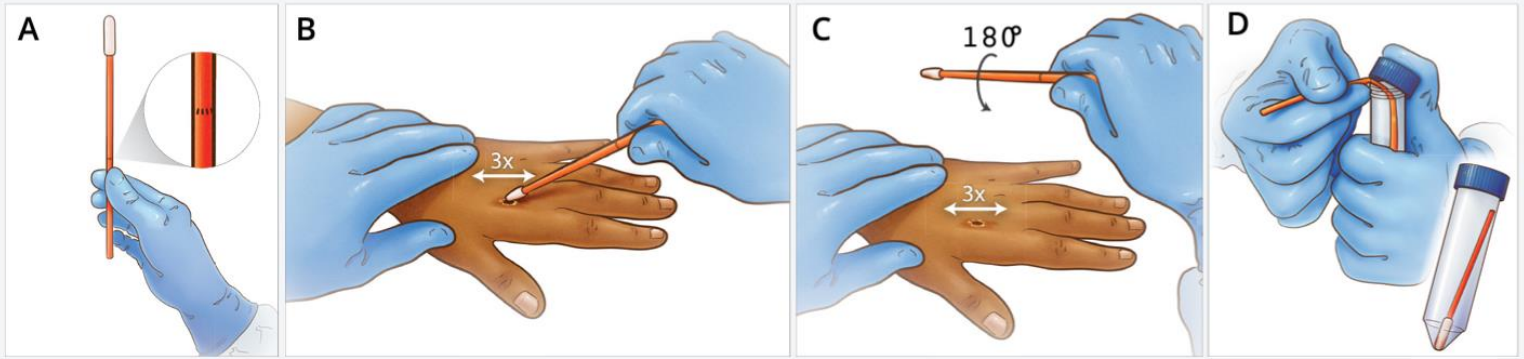
SUPPLY LIST

- At least 4 synthetic swabs
- Container for each swab*
- Specimen bags
- Patient labels
- Sterile gauze
- EPA-registered disinfectant wipes
- Any supplies needed for basic patient care

*The type of container, swab, and transport medium may differ per local laboratory guidelines; please ask your local testing site for preference.

1 Before swabbing: Perform hand hygiene and don PPE prior to entering patient room.

2 At first lesion site: Do NOT clean the lesion area with ethanol or other disinfectant prior to swabbing.



A: Grasp swab firmly. Avoid touching shaft at least an inch before the tip.

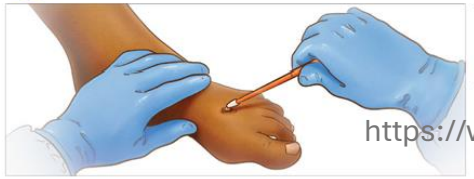
B: Vigorously rub the swab back and forth on lesion surface 3x. If lesion ruptures, ensure swab collects lesion fluid. Unroofing the lesion is not recommended and is unnecessary

C: Rotate the swab 180 degrees. Vigorously swab the lesion 3x again.

D: Place swab in appropriate container, breaking shaft if necessary. Wipe down with EPA-approved disinfectant.

REPEAT Step 2, A through D on the same lesion with a second swab.

3 At second lesion site: At second lesion site, repeat step 2, A through E.



The second lesion is ideally on a different part of the body and/or has a different appearance.

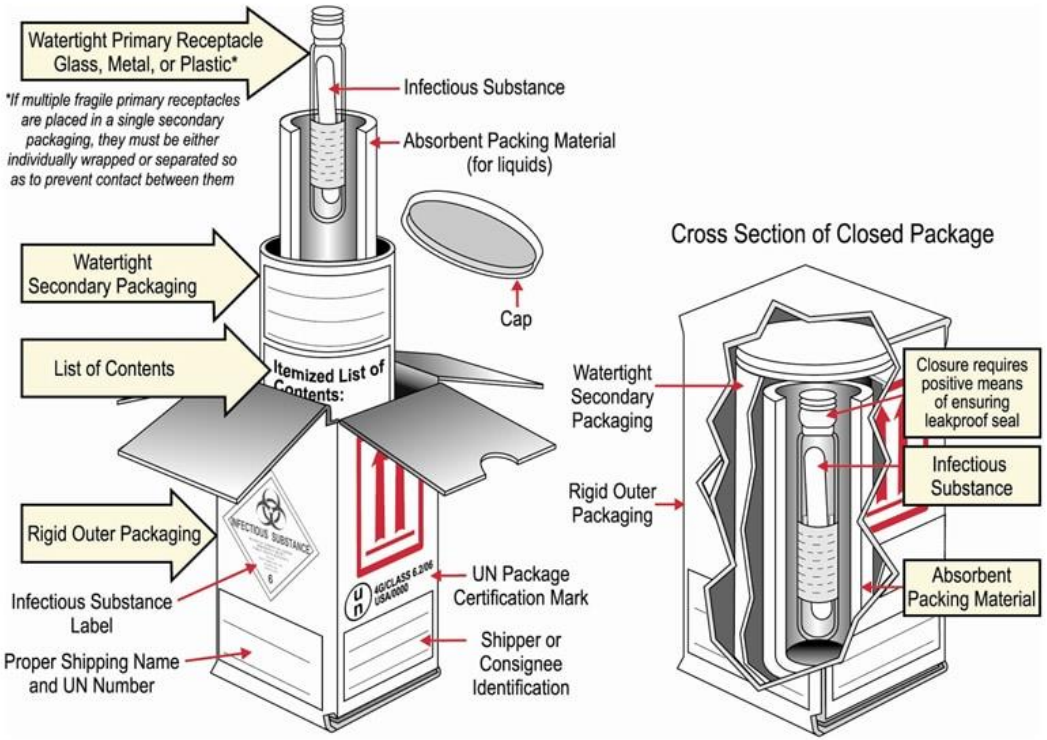
4 Label and package specimens:

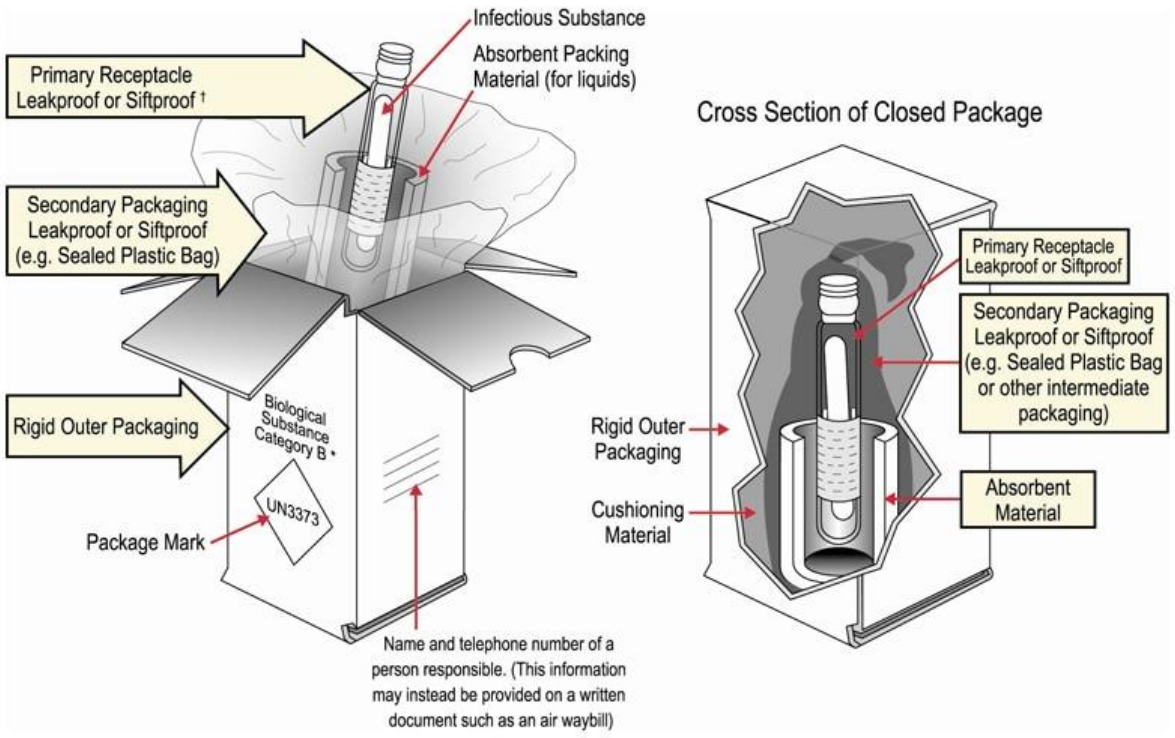
Label, package, store, and ship specimens following specifications put forth by testing laboratory.

https://www.std.uw.edu/page/clinical-guides/guides#mpox

Sample transport and Waste Management

- Most MPXV materials—including patient diagnostic samples and clinical waste—are appropriately classified for transportation as **Category B infectious substances**.
- Waste can be transported as “UN3291, Regulated medical waste, n.o.s., 6.2,” and patient diagnostic samples may be transported as “UN3373, Biological substance, Category B, 6.2.”





https://www.efbs.admin.ch/en/topics/transport/transport-sheets/infectious-substances-category-a/

Cleaning Patient Rooms

- Standard cleaning and disinfection procedures should be performed using an EPA-registered hospital-grade disinfectant with an emerging viral pathogen claim.
- List Q- https://www.epa.gov/pesticide-registration/disinfectants-emerging-viral-pathogens-evps-list-q
- Follow the manufacturer's directions for concentration, contact time, and care and handling.
- Soiled laundry (e.g., bedding, towels, personal clothing) should be handled in accordance with standard practices, avoiding contact with lesion material that may be present on the laundry. Soiled laundry should be gently and promptly contained in an appropriate laundry bag and never be shaken or handled in manner that may disperse infectious material.
- Activities such as dry dusting, sweeping, or vacuuming should be avoided. Wet cleaning methods are preferred.
- Management of food service items should also be performed in accordance with routine procedures.
- For patients with suspected or confirmed mpox infection in a healthcare setting:
  - Suspected mpox infection - isolation precautions for mpox maintained until mpox infection is ruled out.
  - Confirmed mpox infection- isolation precautions for mpox maintained until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath.
- Decisions regarding discontinuation of isolation precautions in a healthcare facility may need to be made in consultation with the local or state health department, depending on the jurisdiction.

Registration Number	Active Ingredient(s)	Product Name	Company	Contact time: Minutes	Formulation Type	Surface Type	For use on Tier 1 viruses?	For use on Tier 2 viruses?	For use on Tier 3 viruses?	Follow directions for the following pathogen(s)	Surface Type (Hospital; Industrial; Residential; Veternary; Animal housing)
95292-1	Hypochlorous acid	Ionpure 1650	Ionogen, LLC	1	Ready-to-use	Hard Nonporous (HN)	Yes	Yes	No	Rhinovirus type 16	Hospital; Institutional; Residential; Animal housing; Veterinary
95158-1	Ethanol	ProtecTeaV	Camellix, LLC	1	Ready-to-use	Hard Nonporous (HN)	Yes	Yes	No	Feline calicivirus (Norovirus)	Hospital; Institutional; Residential; Animal housing; Veterinary
9480-9	Quaternary ammonium	AF3 Germicidal Disposable Wipe	Professional Disposables International Inc	3	Wipe	Hard Nonporous (HN)	Yes	No	No	Adenovirus type 5; Rotavirus	Hospital; Institutional; Residential; Animal housing
9480-8	Sodium hypochlorite	Sani-Cloth Bleach Germicidal Disposable Wipe	Professional Disposables International Inc	1	Wipe	Hard Nonporous (HN)	Yes	Yes	Yes	Canine parvovirus; Hepatitis A virus; Poliovirus type 1; Rhinovirus type 37; Feline calicivirus (Norovirus)	Hospital; Institutional; Animal housing; Veterinary
9480-5	Quaternary ammonium	Sani-Cloth Germicidal Disposable Cloth	Professional Disposables International Inc	5	Wipe	Hard Nonporous (HN)	Yes	Yes	Yes	Feline calicivirus (Norovirus); Rhinovirus	Hospital; Institutional; Residential; Animal housing; Veterinary

Management of Patients with an Mpox Virus Exposure

- Asymptomatic:
  - Do not need to be isolated
  - Monitoring
    - Assessing the patient for signs and symptoms of mpox, including a thorough skin exam, at least daily, for 21 days after their last exposure.
- If a rash occurs, patients should:
  - Placed on empiric isolation precautions
  - Rash is evaluated
  - Testing is performed, if indicated, and the results of testing are available and are negative.
- If other symptoms of mpox infection are present, but there is no rash, patients should:
  - Be placed on empiric isolation precautions for mpox 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 and oral examination reveals no new rashes or lesions, isolation precautions for mpox can be discontinued.
  - 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, then the patient should be placed on empiric isolation precautions for mpox again, and a new 5-day isolation period should begin.

Testing

- Public health authorities (Laboratory Response Network – LRN)
- Commercial labs: Aegis Science, Labcorp, Mayo Clinic Laboratories, Quest Diagnostics and Sonic Healthcare.
- **Viral testing**
  - PCR testing for orthopoxvirus DNA should be performed on lesion samples.
  - In the United States, this testing can be done at a Laboratory Response Network site or certain commercial and clinical laboratories.
  - Includes real-time polymerase chain reaction or PCR testing for *Orthopoxvirus*, non-variola *Orthopoxvirus,* or *Mpox virus*.
- **Serologic testing**
  - Can be used to support a diagnosis of mpox and may be particularly helpful if viral testing is not able to be performed. The decision to obtain serologic testing is generally made in conjunction with public health officials.
  - Patients with mpox typically have detectable levels of antiorthopoxvirus IgM antibody during the period of 4 to 56 days after rash onset.
  - The CDC developed an IgM capture and an IgG enzyme-linked immunosorbent assay (ELISA) that demonstrated recent monkeypox virus infection.
  - Serum IgM and IgG antibodies were detected five and eight days after onset of rash, respectively.

Laboratory Biosafety

- **Vaccination:**
  - Employers should offer pre-exposure orthopoxvirus vaccination to workers at risk of occupational exposure.
  - Two vaccines may be used to prevent mpox disease, JYNNEOS and ACAM2000.
  - Individuals are considered fully vaccinated 14 days after the second dose of the JYNNEOS vaccine or four (4) weeks after the ACAM2000 vaccination.

- **Lab:** Perform routine diagnostic specimen processing in Biosafety Level 2 (BSL-2)laboratory facilities following standard and special practices. Additional precautions to reduce exposure risk may include, but are not limited to:
  - Solid-front gowns with cuffed sleeves
  - Double gloves
  - Eye protection (safety glasses, snugly fitting goggles) or face protection (face-shield)
  - NIOSH-approved particulate respirator equipped with N95 filters or higher
  - Limiting the number of laboratory personnel who work during specimen manipulation
  - Laboratory with directional airflow
- Manipulate diagnostic specimens in a certified Class II Biosafety Cabinet (BSC) or other containment devices, especially if there is a potential to generate aerosols (e.g., vortexing or sonication of specimens in an open tube). Do not work with open vessels on the bench top unless it is safe to do so based on site and activity-specific risk assessments (i.e., the specimen has been fully inactivated utilizing an approved inactivation method).

VACCINATION

What vaccine is used?

At this time, the preferred vaccine for mpox protection is JYNNEOS. The vaccine requires 2 doses spaced 4 weeks apart. The vaccine recommendations on this page are for the context of the 2022 mpox outbreak.

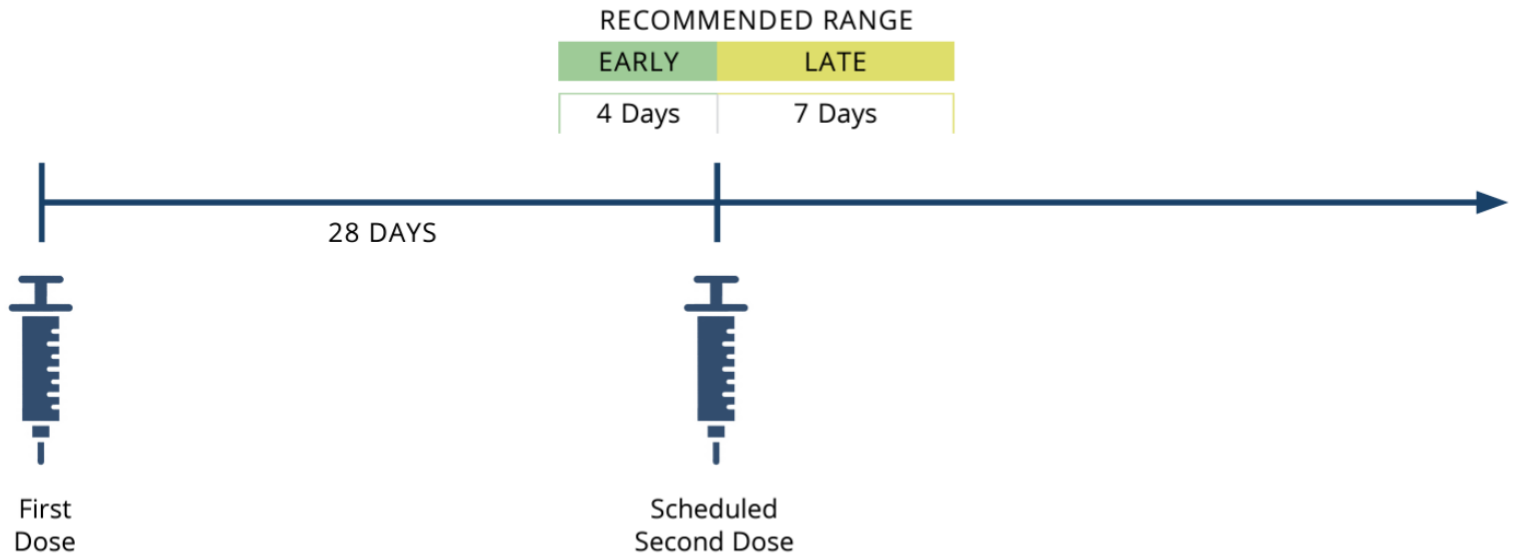
Who should be vaccinated?

Groups recommended for vaccination fall under two indications: (1) postexposure prophylaxis (PEP) for persons who have already been exposed to a person with mpox and (2) as prevention for persons who might be exposed in the future. The vaccine dosing and dosing schedule are the same regardless of the indication.

- **Postexposure prophylaxis (PEP):** JYNNEOS vaccine is indicated for persons who have recently had close contact with someone with mpox. Those receiving mpox PEP should ideally receive vaccination within 4 days of a known exposure to mpox. If more than 4 days have elapsed since the exposure, postexposure prophylaxis vaccination can be considered—if the exposure was within 14 days, but note that vaccination after day 4 is less likely to be effective than if given within 4 days of the exposure.
- **Prevention:** JYNNEOS vaccine is indicated as prevention for persons considered at risk for acquiring mpox. Persons considered at higher risk include gay, bisexual, or other men or transgender people who have sex with men and have multiple partners, have had recent prior sexually transmitted infections, and/or have recent attendance at or participation in group sex settings. People who should be considered for mpox prevention vaccination include those with the mpox exposure risks described above within the past 6 months or who anticipate experiencing those risks in the future.

https://www.std.uw.edu/page/clinical-guides/guides#mpox

Recommended Vaccination Timeline



The recommended time between vaccine doses is 28 days; the second dose may be given up to 4 days early and up to 7 days late. However, there is no recommendation to restart the vaccine series if the second dose is given earlier than day 24 or later than day 35.

What are vaccine coadministration considerations?

Vaccine may be administered at the same time as any other vaccines, though ideally in different limbs.

Providers and patients may consider waiting 4 weeks after vaccination against COVID-19 (with Moderna, Pfizer, or Novavax vaccines) because of the rare side effects of myocarditis or pericarditis associated with both those vaccines and ACAM2000, a live smallpox vaccine. Recent data suggests the risk of myocarditis associated with JYNNEOS is extremely low.

We recommend vaccination against mpox in eligible groups regardless of prior smallpox vaccination status given the possibility of waning immunity.

What is the duration of protection?

Peak immunity is expected around two weeks after the second dose of the vaccine. The expected duration of immunity is unknown.

https://www.std.uw.edu/page/clinical-guides/guides#mpox

Treatment

Supportive management

Symptomatic

Pain control

Medical management

Tecovirimat (Tpoxx)

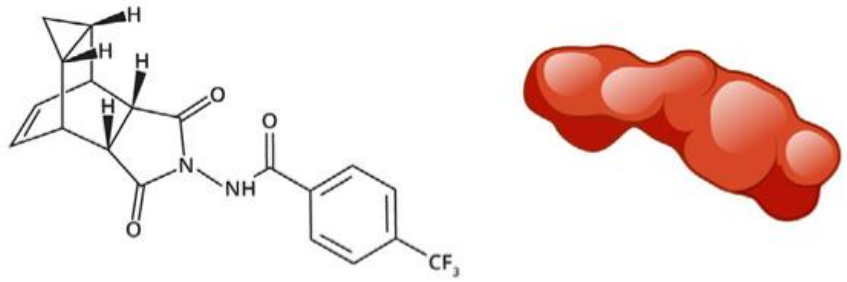
Cidofovir

Brincidofovir

Background

Tecovirimat (*Tpoxx,* ST-246) is an antiviral medication that inhibits an orthopoxvirus specific envelope wrapping protein (p37). Tecovirimat is FDA-approved for the treatment of smallpox. Animal studies have shown that it is effective in treating disease caused by orthopoxviruses, including mpox virus. It has been demonstrated to be safe in healthy adults, and is the focus of multiple ongoing human efficacy trials.

Tecovirimat Structure



Mechanism of Action Overview

https://www.std.uw.edu/page/clinical-guides/guides#mpox

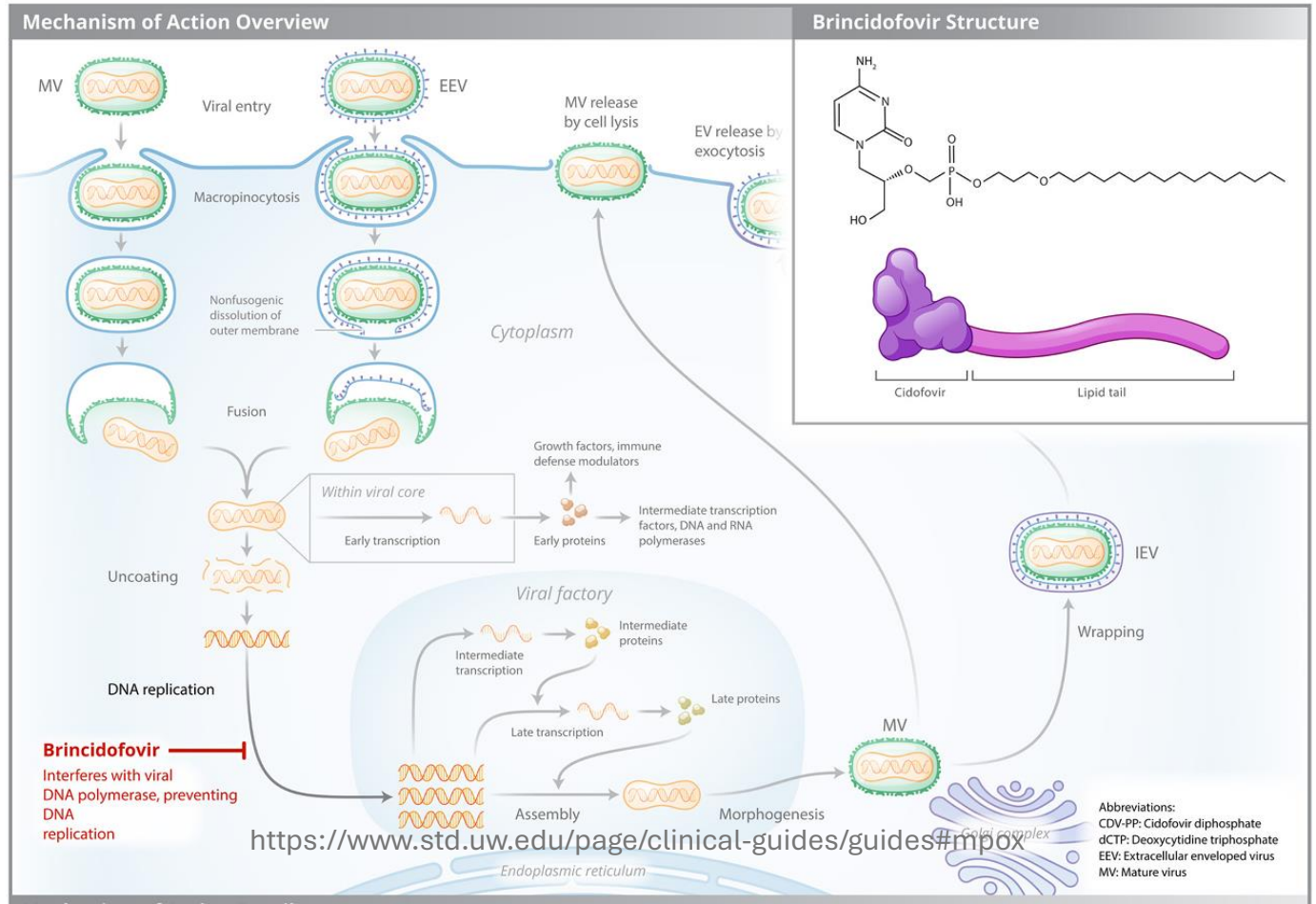
Tecovirimat

- Should be considered for use in the following situations:
  - Severe mpox disease:
    - Hemorrhagic disease
    - Large number of lesions
    - Ocular or periorbital infection
    - Sepsis
    - Encephalitis
    - Other manifestation that requires hospital admission
    - Mpox involvement of anatomic areas that may result in serious adverse sequelae, including scarring or strictures
    - People who are at high risk of developing severe mpox-related disease, including immunocompromised individuals, children (especially those younger than 8 years of age), pregnant or breastfeeding people, and people who have a medical condition that affects skin integrity.
- Access: Through (1) the STOMP Clinical Study (stomptpoxx.org) or (2) from the Strategic National Stockpile through the CDC Investigational New Drug (IND) protocol.

BRINCIDOFOVIR

Background

Brincidofovir (*Tembexa*), a prodrug of cidofovir, is a nucleotide analog DNA polymerase inhibitor. Brincidofovir has activity against orthopoxviruses and it is FDA-approved for the treatment of smallpox in adults and pediatric patients. Animal and in vitro studies have shown it is effective in treating disease caused by orthopoxviruses, including monkeypox virus. Brincidofovir contains a large lipophilic side chain that facilitates penetration across the host lipid membrane. Inside the cell, brincidofovir is converted to cidofovir, with the cleavage of the lipid ester linkage of the lipophilic side chain. Cidofovir is then phosphorylated to cidofovir diphosphate, which is the active antiviral moiety that inhibits DNA polymerase when cidofovir is incorporated into the growing viral DNA chain and subsequently slows further viral DNA chain extension.



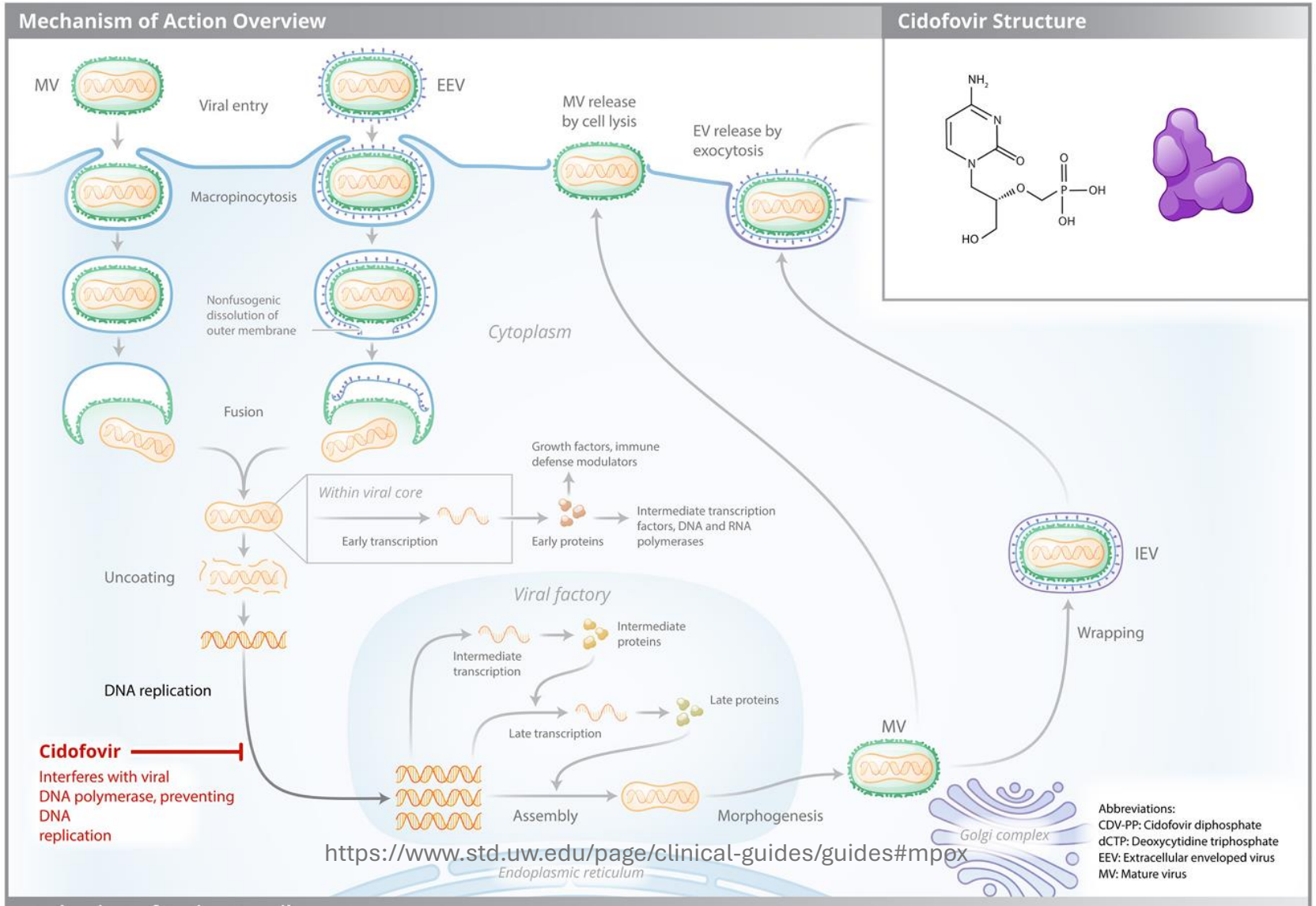
Brincidofovir

- Consider use in the following situations:
  - Patients with severe mpox disease OR are at high risk for progression to severe mpox disease AND meet either of the following:
    - Experience clinically significant mpox disease progressio n while receiving tecovirimat or who develop recrudescence (initial improvement followed by worsening) of mpox disease after an initial period of improvement on tecovirimat, **OR**
    - Are otherwise ineligible or have a contraindication for oral or intravenous tecovirimat

CIDOFOVIR

Background

Cidofovir (*Vistide*) is a DNA polymerase inhibitor with activity against orthopoxviruses, as described in the previous brincidofovir section. Cidofovir is FDA-approved for treatment of CMV retinitis.



https://www.std.uw.edu/page/clinical-guides/guides#mpox

Cidofovir

- Considered in instances of severe mpox infection refractory to tecovirimat treatment or in persons who cannot tolerate tecovirimat and brincidofovir may not be readily available.
- Contraindicated in those with history of clinically severe hypersensitivity to probenecid or other sulfa drugs, those with serum creatinine >1.5 mg/dL, or CrCl ≤55 mL/minute. It should not be used with other nephrotoxic agents.
- Access: Commercially available

NHMA
National Hispanic Medical Association

Post Test

National Hispanic Medical Association

Additional Resources

Mpox

- CDC Mpox
- CDC Mpox Infection Control
- CDC Mpox Information for Healthcare Professionals

Project Firstline

- https://www.cdc.gov/project-firstline/media/pdfs/Micro-Learns-Rash-508.pdf
- https://www.cdc.gov/project-firstline/hcp/training/index.html

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Thank you!

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