Maine CDC Clinician Update: Monkeypox

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DRAFT

October 11, 2022

STATE OF MAINE
Department of
Health and Human Services

Case presentation:

- Man in his 30's with known HIV, not on antiretroviral therapy (ART) for 6 months, previous CD4 <200
  - Reported recent sex with a man, after which he developed multiple penile and other scattered lesions consistent with monkeypox
  - Sought care at multiple facilities early July-Aug without diagnosis
  - Treated empirically for syphilis, GC/Ct and Herpes on multiple occasions in urgent care and ER without improvement
  - Restarted his ART about 2 weeks into illness
  - Developed phimosis and urinary retention – saw urology outpatient who directly admitted him to hospital

Originally presented by Alexandra Dretler, MD https://emergency.cdc.gov/coca/calls/2022/callinfo_100622.asp

- ID consulted for penile lesions
- Clinically diagnosed with monkeypox based on physical exam finding and swab sent
- Started on oral tecovirimat inpatient and discharged with 14-day course
- CD4 <20, 1%
- Discharged with oral tecovirimat, ART and Bactrim (prophylaxis)
- Foley placed by urology for urinary retention
- Followed by Dept of Health and plan for follow up in ID office

- Returned to clinic on day 13 of oral tecovirimat
  - No new lesions in 4-5 days
  - Lesions were coalescing and with central eschars
  - Penile lesions had coalesced and began crusting
  - Foley remained in place and patient had planned urology follow up
- 1 week later he called office reporting a few scattered new lesions but otherwise stable

- 10 days post treatment ID follow up appointment
  - New lesions in multiple locations on body and specifically extending up shaft of penis
  - Reported ongoing weight loss, poor appetite and significant malaise and weakness
  - New eyelid lesion
  - Suprapubic foley placed for urinary retention and indwelling foley removed
  - Severe and persistent pain, most prominent from penile lesions
- Concern for secondary infections secondary to necrotic lesions
- Decision made after consult with CDC team to re-admit to hospital

Upon presentation

13 days of oral tecovirimat

2nd Admission

- Admitted to the hospital
  - Escalated to IV tecovirimat
  - Treated with broad spectrum antibiotics
- Additional medical counter measures
  - VIGIV – discussed and ultimately given
  - Cidofovir- some concern for maintaining renal function
    - NOT given
  - Hydration (lactated ringers, based on % body surface area)
- Urology, Dermatology, Ophthalmology and Wound Care consulted

Upon presentation

13 days oral tecovirimat

2nd admission

- Other hospital complications:
  - Methicillin-resistant staph aureus bloodstream and secondary skin infections
- Atrial fibrillation with rapid ventricular response developed
- CT PE protocol revealed pulmonary nodules concerning for pulmonary involvement
- Fortunately remained hemodynamically stable
- New lesions continued to arise
- Did repeat VIGIV
- Discharged from hospital on oral tecovirimat after 14 days of IV with plan to continue potentially until immune reconstitution

Outline

- Epi overview
- Transmission
- Clinical presentation
- Testing
- Treatment
- Vaccination
- Resources

Epi overview

Globally:

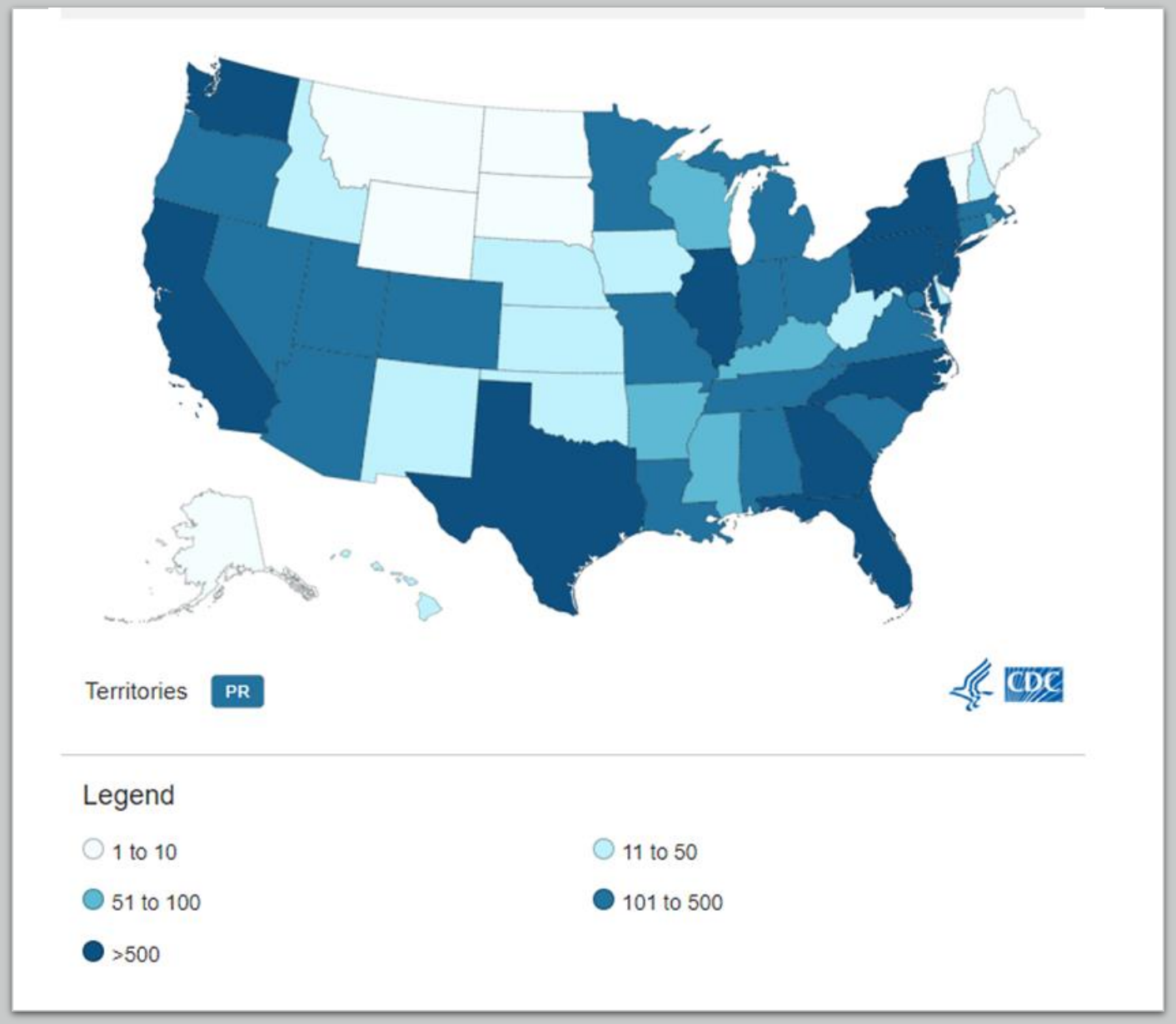
- >70k cases
  - in 107 locations, 100 that haven't historically reported MPX
- 27 deaths
- Highest incidence
  - U.S.
  - Brazil
  - Spain
  - France
  - United Kingdom

https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html

As of October 5, 2022 @ 5pm

Domestically:

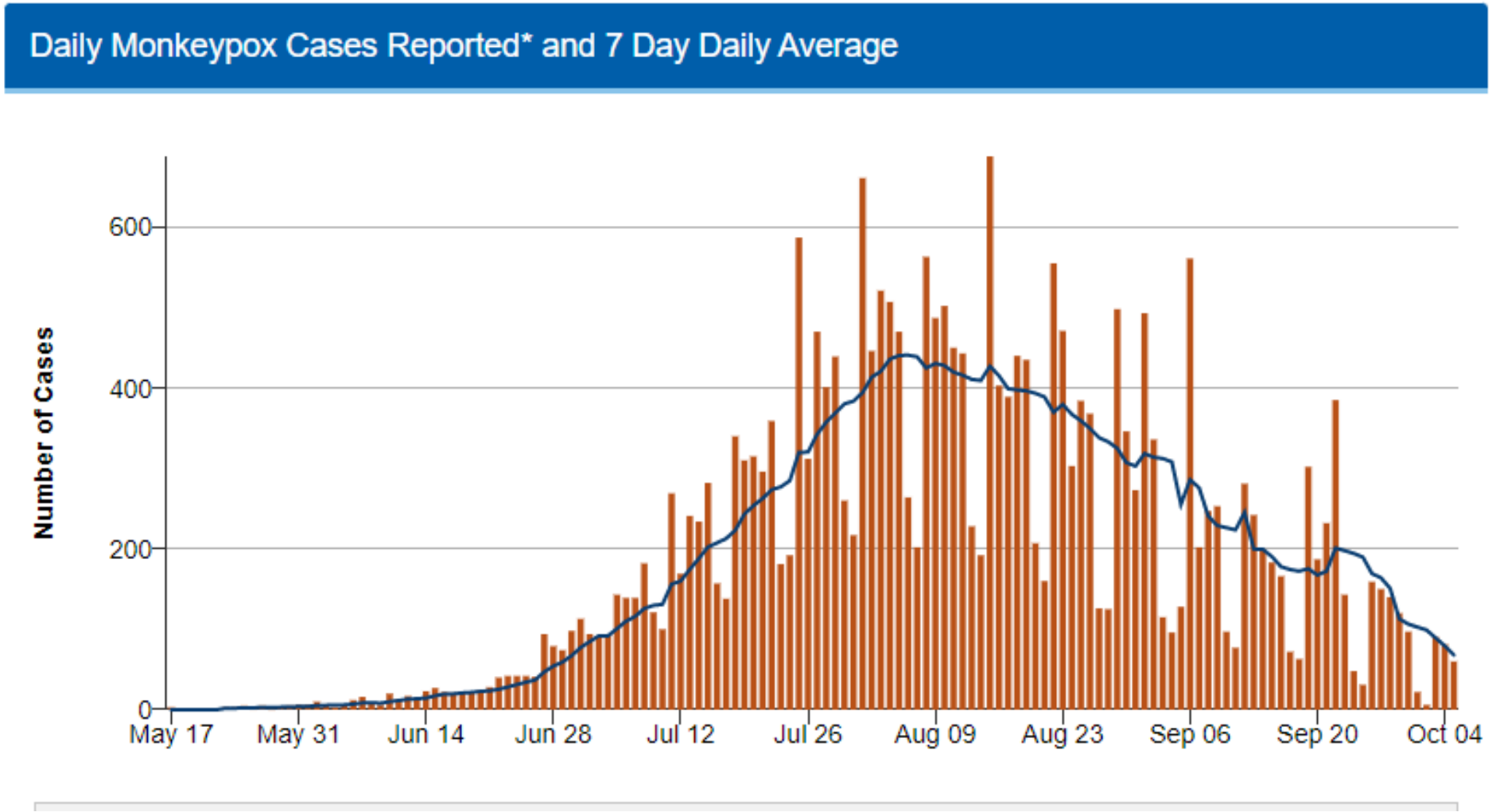
- >26K cases
- 2 deaths
- Highest Incidence:
  - California
  - New York
  - Florida
  - Texas
  - Georgia



https://www.cdc.gov/poxvirus/monkeypox/response/2022/us-map.html

As of October 5, 2022 @ 5pm

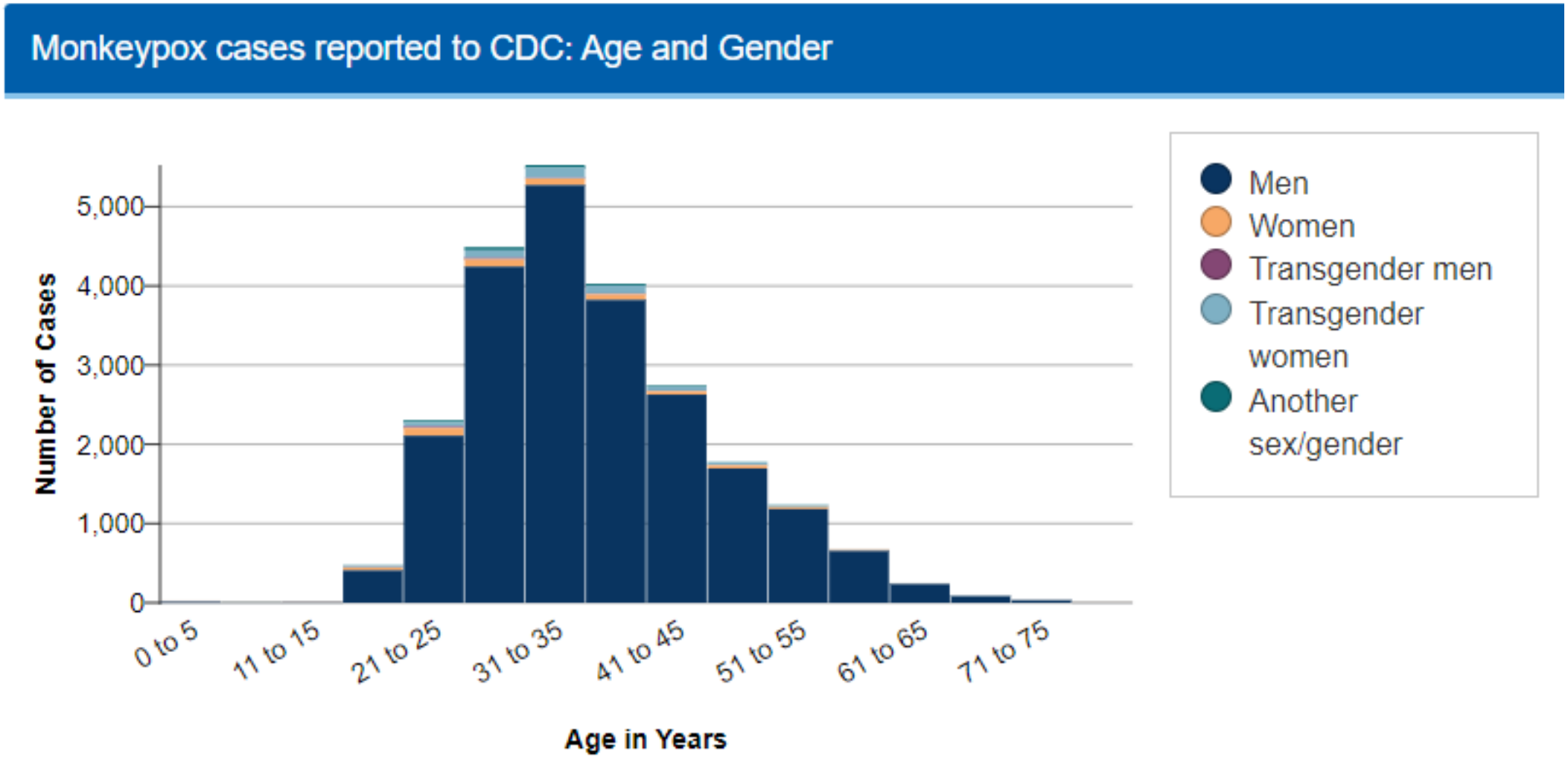
U.S. MPX Case Trends



https://www.cdc.gov/poxvirus/monkeypox/response/2022/mpx-trends.html

As of October 5, 2022 @ 2pm

U.S. MPX Cases by Age and Gender

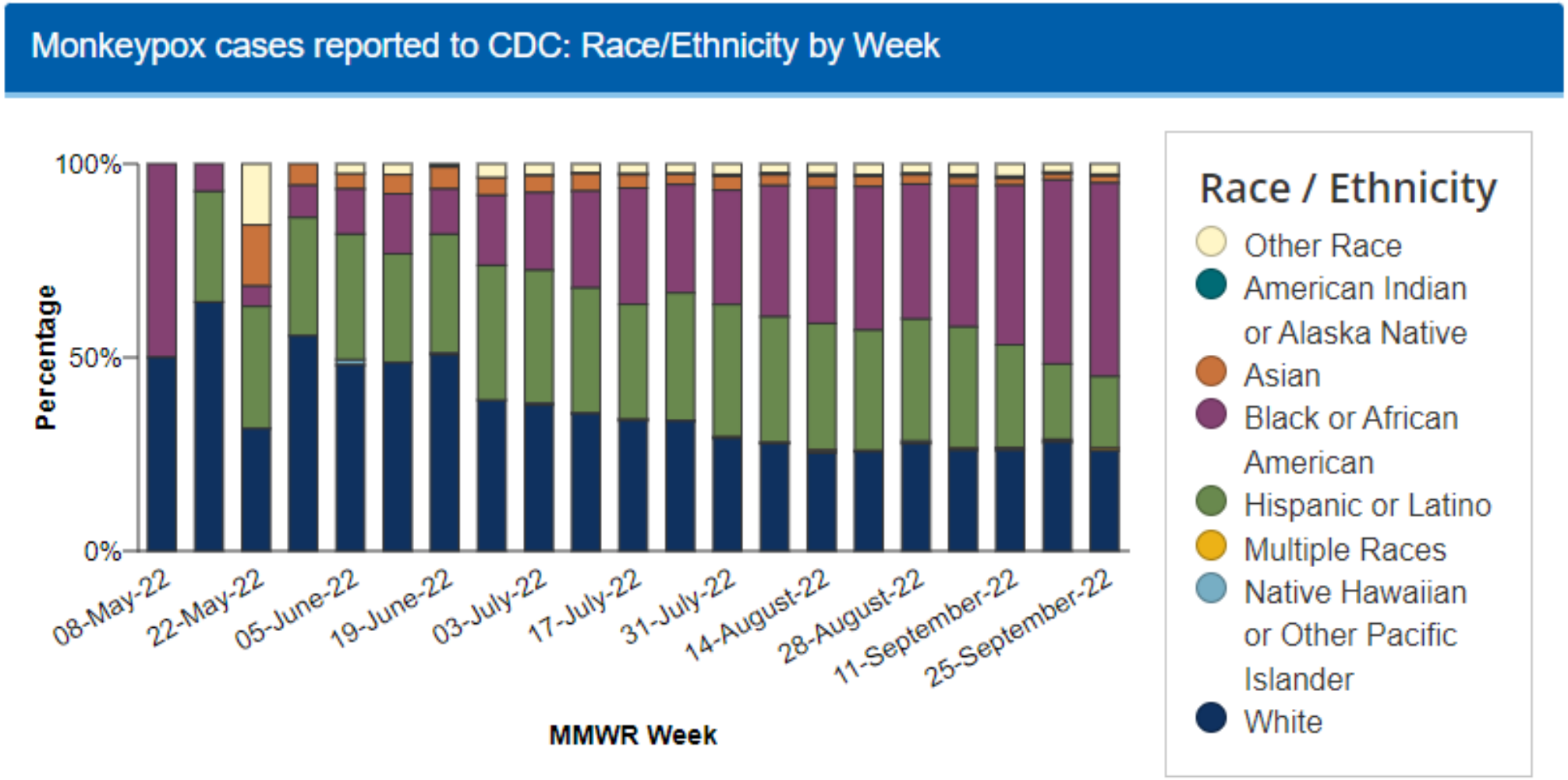


https://www.cdc.gov/poxvirus/monkeypox/response/2022/demographics.html

As of October 5, 2022 @ 2pm

U.S. MPX Cases by Race/Ethnicity:

A disproportionate number of cases are among Black or Hispanic persons



https://www.cdc.gov/poxvirus/monkeypox/response/2022/demographics.html

As of October 5, 2022 @ 2pm

U.S. MPX Cases by Symptoms

Most common:

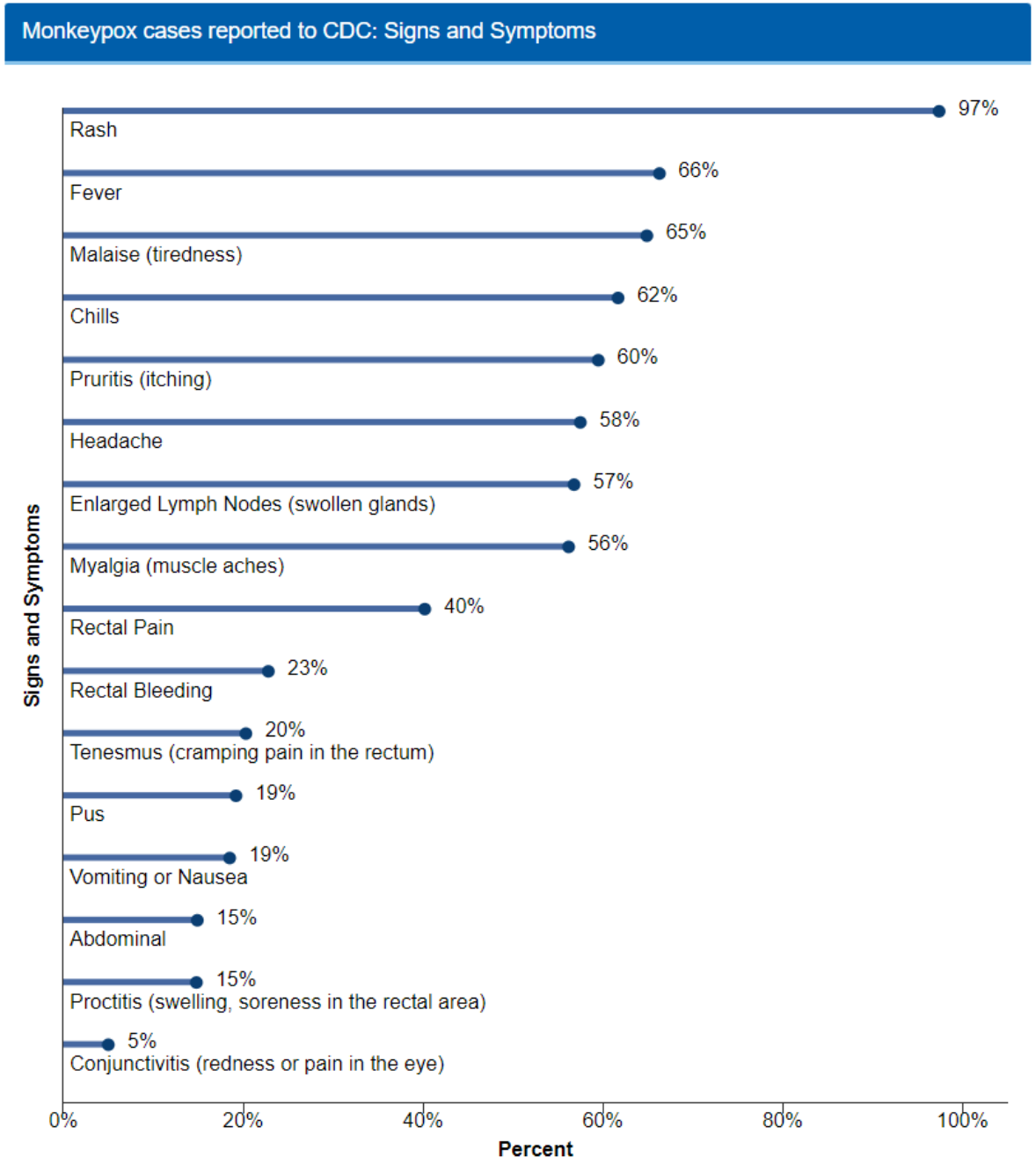
Rash (97%)

Fever (66%)

Malaise (65%)

Chills (62%)

Pruritis (60%)



https://www.cdc.gov/poxvirus/monkeypox/response/2022/demographics.html

As of October 5, 2022 @ 2pm

MPX Cases in Maine

Confirmed and Probable Monkeypox Cases in Maine (Updated 10/5/2022)	
County	**Number of Confirmed and Probable Cases***
Androscoggin	1
Aroostook	2
Cumberland	2
Hancock	1
Sagadahoc	1
York	3
Total	**10**

*Cases may be reassigned to other states upon investigation.

https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox.shtml

Transmission

Transmission

- Through close, personal, often skin-to-skin contact
- During pregnancy from the pregnant person to their fetus
- From infected animals, either by being scratched or bitten by the animal or by preparing or eating meat or using products from an infected animal

https://www.cdc.gov/poxvirus/monkeypox/if-sick/transmission.html

Transmission

- Incubation period:
  - 3-17 days
  - During this time, a person does not have symptoms, may feel fine, and is not contagious.
- The illness typically lasts:
  - 2-4 weeks
  - A person with monkeypox *may be* contagious during the prodrome and *is* contagious until after all the scabs on the skin have fallen off and a fresh layer of intact skin has formed.

https://www.cdc.gov/poxvirus/monkeypox/if-sick/transmission.html

Still researching:

- If the virus can be spread when someone is asymptomatic
- How often MPX is spread through respiratory secretions, or when a person with MPX symptoms might be more likely to spread the virus through respiratory secretions
- Whether MPX can be spread through semen, vaginal fluids, urine, or feces

https://www.cdc.gov/poxvirus/monkeypox/if-sick/transmission.html

Clinical Presentation

Key clinical characteristics

- Prodrome: Fever and other symptoms (e.g., chills, lymphadenopathy, malaise, myalgias, or headache)
- Respiratory symptoms
- Rectal symptoms (e.g., purulent or bloody stools, rectal pain, or rectal bleeding)

Lesions:

- Are firm or rubbery
- Well-circumscribed
- Deep-seated
- Often develop umbilication
- Often described as painful
- Typically develop simultaneously and evolve together on any given part of the body
- Progress through four stages before scabbing over and desquamation

https://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html

Stages of a lesion: Enanthem Through the Scab Stage

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.

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

https://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html#:~:text=Key%20Characteristics%20for%20Identifying%20Monkeypox&text=Lesions%20are%20firm%20or%20rubbery,areas%20or%20in%20the%20mouth.

During the 2022 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

https://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html

MONKEYPOX

VISUAL EXAMPLES OF MONKEYPOX RASH

Photo Credit: UK Health Security Agency

CS328947-EK

https://www.cdc.gov/poxvirus/monkeypox/resources/graphics.html

MONKEYPOX

VISUAL EXAMPLES OF MONKEYPOX RASH




Photo Credit: NHS England High Consequence Infectious Diseases Network

CS328947-EK

https://www.cdc.gov/poxvirus/monkeypox/resources/graphics.html

Differential diagnosis may include

Infectious	Non-Infectious	Diffuse Rash	Proctitis
• Herpes Simplex Virus (HSV) • Syphillis • Chancroid • Lymphogranuloma venereum (LGV) • Granuloma inguinale • Scabies	• Recurrent apthous stomatitis • Behcet's Disease • Trauma • Squamous cell carcinoma (SCC) • Drug-induced • Allergic • Other	• Varicella • Disseminated fungal, herpes, or gonococcal Infection • Other poxviruses	• Gonorrhea (GC) • Chlamydia (CT) • HSV

https://www.cdc.gov/poxvirus/monkeypox/clinicians/people-with-HIV.html#:~:text=Differential%20Diagnosis,skin%20rashes%2C%20and%20drug%20eruptions.
https://emergency.cdc.gov/coca/ppt/2022/052422_slides.pdf

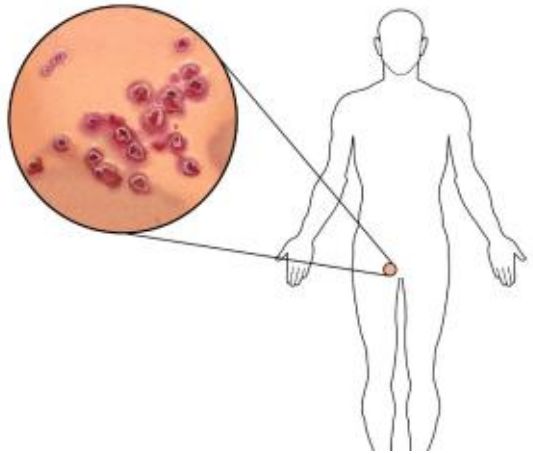
MONKEYPOX

What To Do If You Suspect Monkeypox

Early detection can help stop the spread of monkeypox.
Know what to look for and what to do if you suspect monkeypox.

Signs and Symptoms

- A new, maculo-papular rash that develops into vesicles and then pustules. Lesions may be deep-seated, firm, well-circumscribed and umbilicated. The rash may:
  - Appear anywhere on the body, including palms, soles and anogenital region
  - Be localized to a specific body site or diffuse
  - Be the only symptom people experience
  - Be painful, painless, or itchy
- Fever, headache, malaise, chills, and lymphadenopathy may occur.



https://www.cdc.gov/poxvirus/monkeypox/pdf/mpx-clinician-what-to-do.pdf

Maine Center for Disease Control and Prevention
11 State House Station
Augusta, Maine 04333-0011
Phone: (800) 821-5821 / Fax: (207) 287-7443

Maine Health Alert Network (HAN) System

PUBLIC HEALTH ADVISORY

To: All HAN Recipients

From: Dr. Isaac Benowitz, State Epidemiologist

Subject: **U.S. CDC: Severe Manifestations of Monkeypox among People who are Immunocompromised Due to HIV or Other Conditions**

Date / Time: Monday, October 3, 2022 at 1:45PM

Pages: 4

Priority: Normal

Message ID: 2022PHADV033

Please review this important information on people with monkeypox who are immunocompromised due to HIV or other conditions. For more information on monkeypox treatment and how to access TPOXX and other therapies in Maine, please visit Maine CDC's *Monkeypox Resources for Healthcare Providers* page at https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox-providers.shtml.

U.S. CDC: Severe Manifestations of Monkeypox among People who are

https://www.maine.gov/dhhs/mecdc/newhan.shtml

PPE should include:

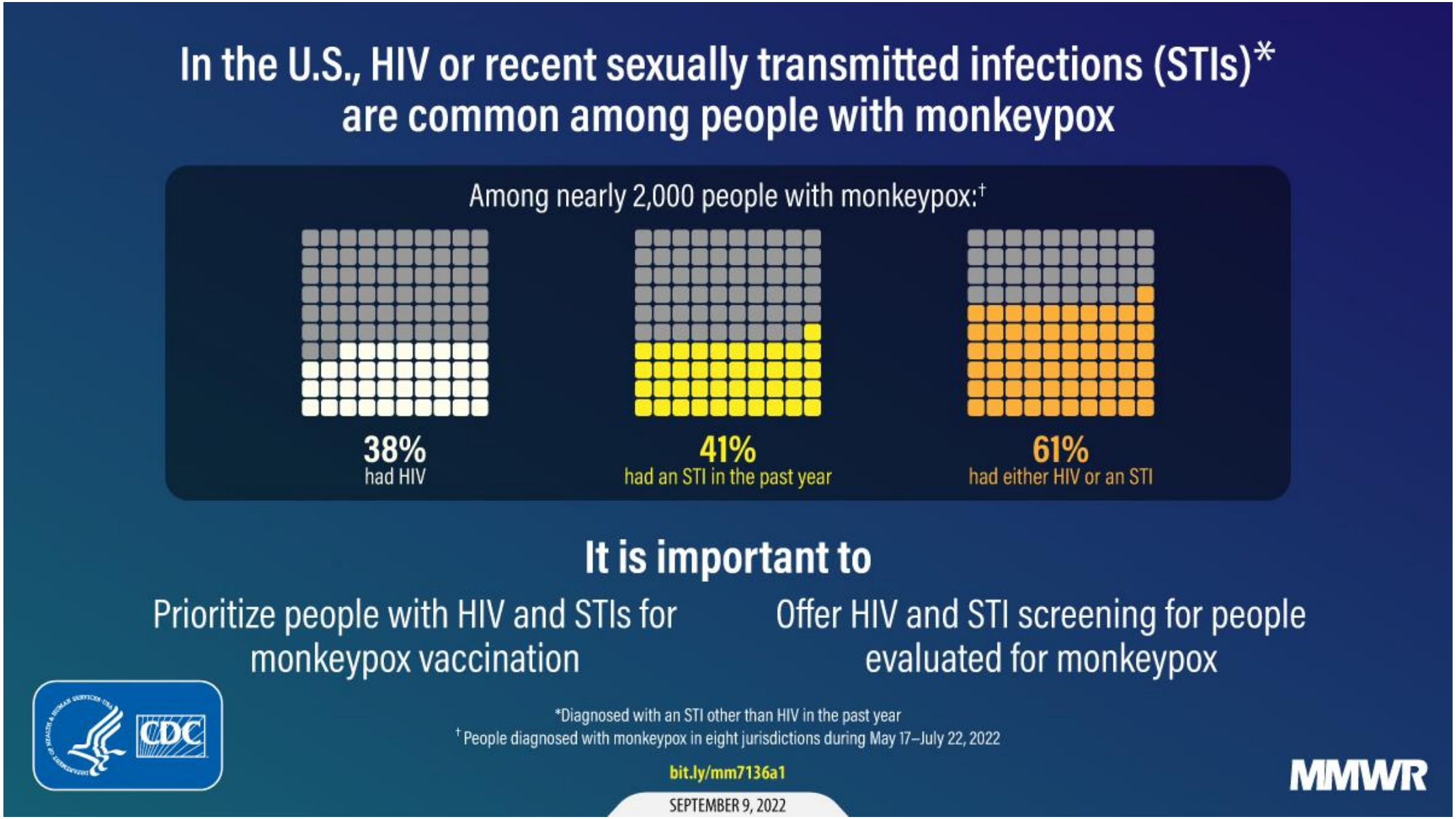
- Gown
- Gloves
- Eye protection (i.e., goggles or a face shield that covers the front and sides of the face)
- NIOSH-approved particulate respirator equipped with N95 filters or higher

https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html

Testing

Upon initial presentation of signs and symptoms consistent with MPX, test and assess for:

- MPX
- HIV
- STIs, such as syphilis, herpes, gonorrhea (GC), and chlamydia(CT)
  - Please take GC/CT samples from all anatomical locations where sexually activity has occurred
- Immunocompromising conditions
  - Such as advanced or poorly controlled human immunodeficiency virus (HIV), leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, or high-dose corticosteroids, being a recipient of a 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



https://www.cdc.gov/mmwr/volumes/71/wr/mm7136a1.htm#:~:text=***%20Since%20May%201%2C%202022,without%20HIV%20infection%20(37%25)

- Skin or mucosal lesion material, including swabs of lesion surface, exudate, or crusts are the recommended specimen types
  - Unroofing or aspiration of lesions before swabbing is **not necessary, nor recommended** due to the risk for sharps injury
- No saliva or blood tests are available at this time
- Specimens can be sent to commercial laboratories or to Maine's Health and Environmental Testing Laboratory (HETL). **Maine CDC encourages all healthcare providers and facilities to utilize commercial testing**
- The specimen type and handling instructions vary by laboratory

Treatment

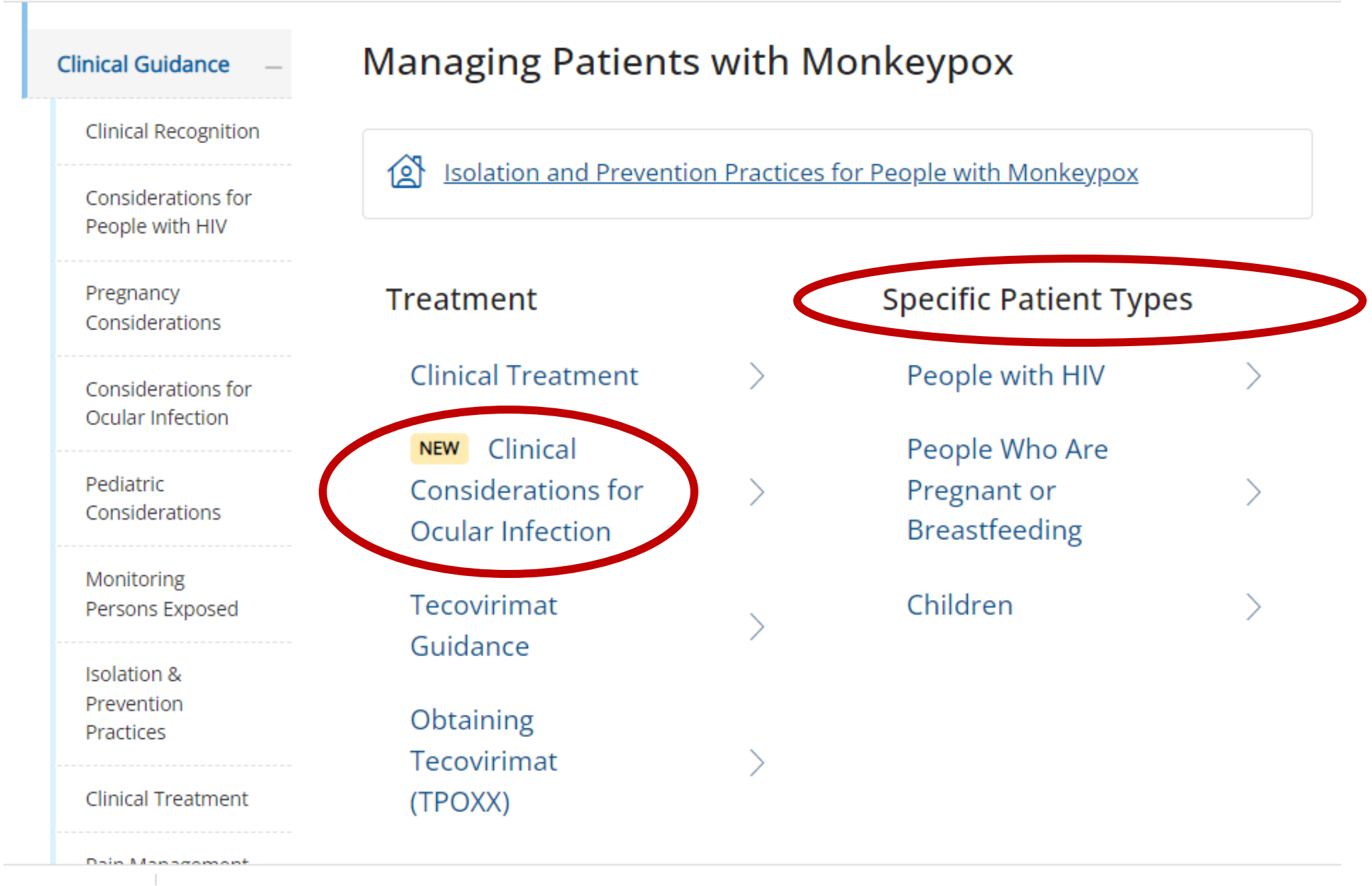
Most immunocompetent patients recover with pain management and other supportive care:

- OTC oral antihistamines
- Calamine lotion or petroleum jelly
- RX: Magic mouthwash
- OTC oral gels (e.g., Orajel)
- Sitz baths
- Topical pain-relief rectal creams (e.g., RectiCare)
- Stool softeners (i.e., docusate)
- Ibuprofen/acetaminophen
- Patients who use topical steroids for pre-existing skin conditions should avoid applying steroids to active lesions of monkeypox, unless directed to do so by their treating clinician
- Consider a short-term pain medication prescription, at the lowest effective dose (gabapentin, immediate-release opioids)

https://www.cdc.gov/poxvirus/monkeypox/clinicians/pain-management.html#general-considerations

- In a multinational report of patients with monkeypox
  - 13% of patients were admitted to the hospital
  - 30% of whom were admitted for pain management
  - Mucosal lesions were reported
    - >40% of patients, predominantly anogenital but also oropharyngeal, resulting in severe pain at these site

Thornhill JP, Barkati S, Walmsley S, et al. Monkeypox Virus Infection in Humans across 16 Countries – April-June 2022 [published online ahead of print, 2022 Jul 21]. *N Engl J Med*. 2022;10.1056/NEJMoa2207323.



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

Consider prescribing tecovirimat (TPOXX) for people:

- With the following clinical manifestations:
  - Severe disease
  - With involvement of anatomic areas which might result in serious sequelae that include scarring or strictures
  - Accidental implantation in eyes, mouth, or other anatomical areas where infection might constitute a special hazard (e.g., the genitals or anus).
- Who are at high risk of severe disease:
  - Pediatric populations, particularly patients younger than 8 years of age
  - Pregnant or breastfeeding people
  - People with a condition affecting skin integrity

TPOXX

- Is an FDA approved antiviral medication for the treatment of smallpox in adults and children
- Data are not available on the effectiveness of TPOXX in treating monkeypox infections in people
- A clinical trial focused on safety in healthy people without monkeypox virus showed the drug had an acceptable safety profile; the effectiveness of TPOXX was not studied in this trial.
- U.S. CDC holds an Expanded Access Investigational New Drug Protocol (EA-IND) for TPOXX that allows for the use of stockpiled TPOXX to treat monkeypox.
- Available as a pill or an injection for IV administration.

TPOXX

How to prescribe TPOXX:

- Treatment can begin **after** obtaining informed consent.
  - Forms requested under the EA-IND can all be returned to U.S. CDC **after** treatment begins.
  - Required forms:
    - https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox-providers.shtml#treatment

In patients with severe symptoms

- Oral or Intravenous (IV) TPOXX:
  - Continue > 14 days and up to 90 days
  - Decreases viral replication
- Optimize immune function among immunocompromised people with suspected for confirmed monkeypox
- Ensure persons with HIV are on effective antiretroviral therapy
- Cidofovir or Brincidofovir (soon to be available from Strategic National Stockpile)
- Vaccinia Immune Globulin Intravenous (VIGIV)
  - No data on effectiveness, use determined on case-by-case basis

In patients with severe symptoms

- Healthcare providers should consider consulting with:
  - Maine CDC (800-821-5821)
  - U.S. CDC (eocevent482@cdc.gov) or Emergency Operations Center (770) 488-7100)
- Clinicians seeking treatments for patients should work with Maine CDC and U.S. CDC to access appropriate treatments as soon as potential need becomes apparent.

TPOXX

- Available in Maine at:
  - hospitals
  - walk-in & urgent care clinics
  - pharmacies
  - For specific locations: https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox.shtml#treatment

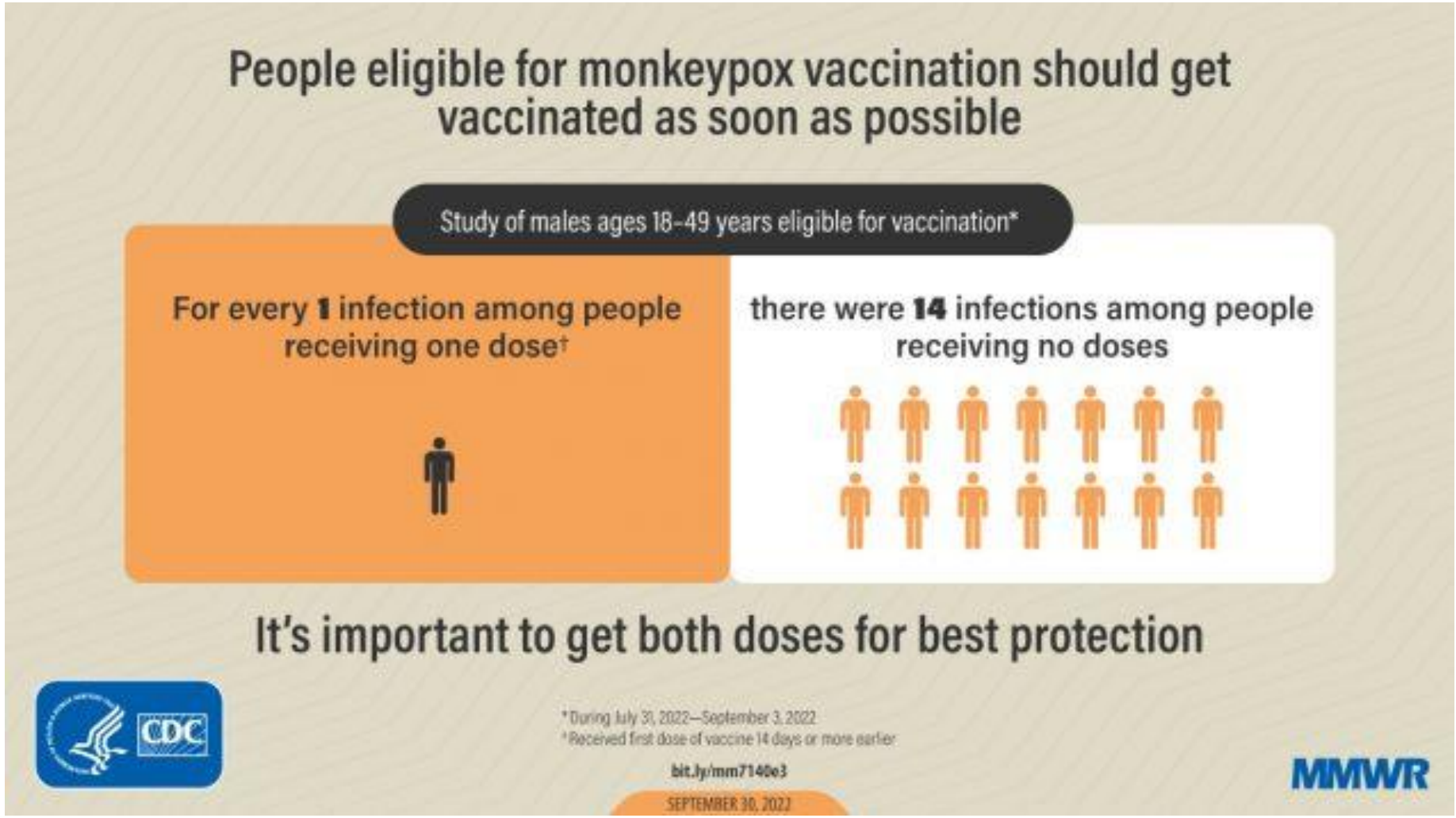
Vaccination

Jynneos

- Jynneos vaccine is approved for prevention of smallpox and monkeypox.
- No data are currently available on the clinical efficacy or effectiveness of for prevention of MPX
- Vaccination, after exposure to a person with monkeypox, may help prevent the disease or make it less severe.
  - U.S. CDC recommends initiating vaccination within 4 days following the date of exposure for the best chance to prevent onset of the disease.
  - If initiated between 4-14 days following exposure, vaccination might be less effective.
- Benefits might still outweigh risks when administering vaccine more than 14 days after exposure in some clinical situations (e.g., for a severely immunosupressed person with a recent sex partner confirmed to have monkeypox).
- Vaccination is not expected to provide benefit if it is given after onset of signs or symptoms of monkeypox begin.

https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/jynneos-vaccine.html#admin

Across 32 U.S. jurisdictions, among males aged 18–49 years eligible for JYNNEOS vaccination, monkeypox incidence was 14 times as high among unvaccinated males compared with those who had received a first vaccine dose ≥14 days earlier.



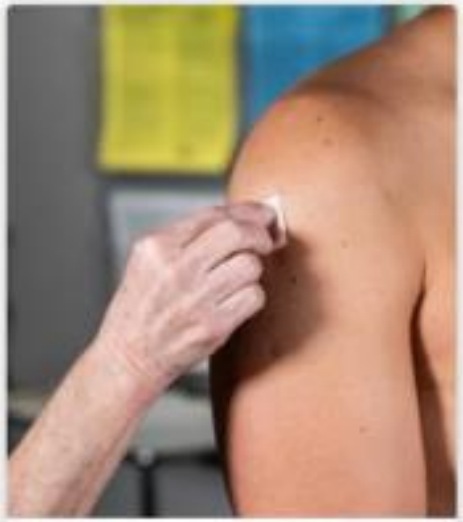
https://www.cdc.gov/mmwr/volumes/71/wr/mm7140e3.htm?s_cid=mm7140e3_w

Vaccine eligibility in Maine

1. Gay, bisexual, or other men who have sex with men
2. Transgender, gender non-conforming, or non-binary individuals who have sex with men
3. Any individual who has or who anticipates having:
    1. multiple sexual partners, or
    2. anonymous sexual partners, or
    3. sexual partners from an app.
4. Any individual who is or anticipates being a sexual partner of a person in categories 1, 2, or 3.
5. Individuals exposed to someone with monkeypox in the past 14 days who were notified of the exposure by a:
    1. public health agency, or
    2. person with monkeypox

https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox.shtml#vaccine

Additional body sites for intradermal administration of Jynneos



Example of locating and cleaning the site for intradermal administration at the deltoid.

Example of intradermal administration at the deltoid.

Example of locating and cleaning the site for intradermal administration at the upper back below the scapula.

Example of intradermal administration at the upper back below the scapula.

https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/jynneos-vaccine.html#admin

Side effects

- Not everyone experiences side effects
- The most common side effects are
  - Prolonged redness, itching, swelling at injection site
  - Headache
  - Tiredness
  - Nausea
  - Chills
  - Muscle aches
- A person who presents for their second vaccine dose who is still experiencing erythema or induration at the site of intradermal administration of the first vaccine dose (e.g., the forearm) should have the second dose administered intradermally in the contralateral forearm or if that is not an option, in the upper back below the scapula, or at the deltoid

https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/jynneos-vaccine.html

Vaccine availability in Maine

Monkeypox Vaccine Locations in Maine			
County	**Healthcare Provider**	**Address**	**Phone Number to Schedule**
Androscoggin	Maine Family Planning	179 Lisbon St. Lewiston, ME 04240	(207) 922-3222
Cumberland	City of Portland STD Clinic	39 Forest Ave. Portland, ME 04101	(207) 756-8067
Cumberland	Gilman Street Clinic	48 Gilman St. Portland, ME 04102	(207) 661-4400
Cumberland	Greater Portland Health	100 Brickhill Ave. Suite 301 South Portland, ME 04106	(207) 874-2141
Kennebec	Maine Family Planning	43 Gabriel Dr. Augusta, ME 04330	(207) 922-3222
Penobscot	Maine Family Planning	68 Mount Hope Ave. Bangor, ME 04401	(207) 922-3222
Penobscot	Northern Light Pharmacy - Westgate	917 Union St., Suite 7, Bangor, ME 04401	(207) 973-6788 Appointments available Mondays. Schedule your appointment here
York	Local Roots Health Care	12 Depot St. Kennebunk, ME 04043	(207) 569-2021 Schedule your appointment here
York	York County EMA's Sanford Vaccine Clinic	1364 Main Street, Suite 7, Sanford, ME 04073 (at Shaw's Plaza)	Walk-in appointments available Tuesdays and Thursdays 1 pm to 6 pm AND Saturdays 10am to 3:30 pm

https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox.shtml#vaccine

Summary

- >70K cases globally, >26K cases domestically
- U.S. cases are trending down
- U.S. cases are mostly in men, 20-50 years old, and disproportionally among Black and Hispanic persons
- Transmission primarily occurs through close, personal, often skin-to-skin contact
- Most common symptoms are rash, fever, malaise, chills and pruritis
- Given co-infection is common, when testing for MPX, also test/assess for STIs, HIV and immunocompromising conditions
- Most immunocompetent patients recover from MPX with pain management and other supportive care
- Consider prescribing TPOXX, which is available in many locations in Maine, for people with or at high risk for severe disease. Consult with Maine CDC for U.S. CDC as needed.
- In a recent study, MPX incidence was 14x as high among unvaccinated males compared with those who had received a first vaccine dose ≥14 days earlier
- Jynneos is available as PEP and PrEP in many locations in Maine

Resources

Follow-up questions
- 1-800-821-5821
- Disease.reporting@maine.gov
- MeCDC.HAI@maine.gov

U.S. CDC Resources
- https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html
- https://www.cdc.gov/poxvirus/monkeypox/clinicians/monitoring.html
- https://www.cdc.gov/poxvirus/monkeypox/transmission.html
- https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html
- https://www.cdc.gov/poxvirus/monkeypox/response/2022/us-map.html
- https://www.cdc.gov/poxvirus/monkeypox/response/2022/mpx-trends.html
- https://www.cdc.gov/poxvirus/monkeypox/response/2022/demographics.html
- https://www.cdc.gov/poxvirus/monkeypox/response/2022/2022-lab-test.html
- https://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html
- https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/jynneos-vaccine.html
- https://www.cdc.gov/std/treatment-guidelines/default.htm
- https://www.cdc.gov/poxvirus/monkeypox/clinicians/people-with-HIV.html

Maine CDC Resources
- https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox.shtml
- https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/zoonotic/monkeypox-providers.shtml

Next webinar: Tuesday, November 8, at 12pm

Maine CDC Clinician Update: COVID-19 and Monkeypox
Please join us to learn more about COVID-19 in Maine and current vaccines and therapies
(2nd Tuesday of the month from 12–1pm)

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