MONKEYPOX

Monkeypox in Correctional Settings

National Commission on Correctional Healthcare

September 6, 2022

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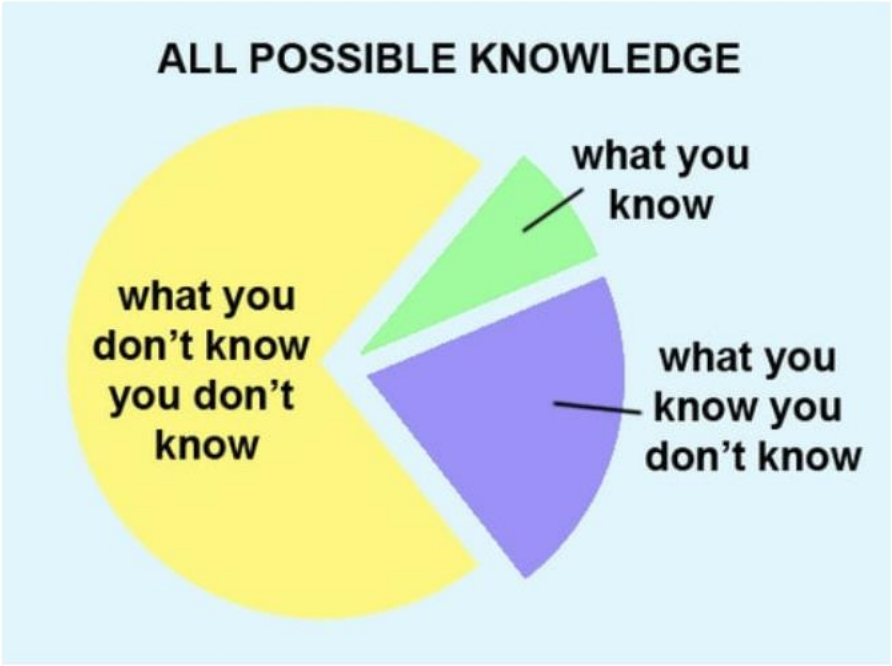
Agenda

- Monkeypox overview
  - Current trends
  - Signs & symptoms
  - Transmission
  - Vaccination, testing, treatment
  - Prevention
- Current CDC recommendations for responding to cases and exposures in congregate settings
- Emerging Data - Special Study with Cook County Jail

Disclaimer #1:

There are a lot of questions about monkeypox, and I do not have all of the answers today.

The answers I give today are my best read on the currently available information.



Disclaimer #2

We only have 1 hour so check out this website if you have questions.

Considerations for Reducing Monkeypox Transmission in Congregate Living Settings

Updated August 22, 2022 Español Print

https://www.cdc.gov/poxvirus/monkeypox/community/congregate.html

Monkeypox Overview

What is a “pock”?

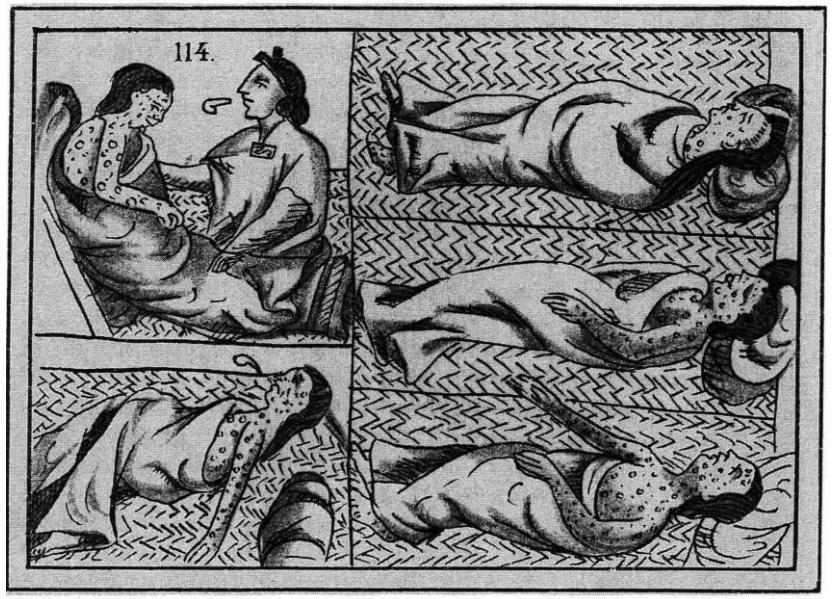
pock (n.)

"pustule raised on the surface of the body in an eruptive disease," Middle English *pok*, from Old English *pocc* "pustule, blister, ulcer," from Proto-Germanic **puh(h)-* "to swell up, blow up" (source also of Middle Dutch *pocke*, Dutch *pok*, East Frisian *pok*, Low German *poche*, dialectal German *Pfoche*), from PIE root **beu-* "to swell, to blow" (see **bull** (n.2)).

French *pocque* is from Germanic. The plural form, Middle English *pokkes* "disease characterized by pustules" (late 14c.) is the source of **pox**.

https://www.etymonline.com/search?q=pock

What is the history of pox-causing disease?



Orthopoxviruses

- Camelpox virus
- Cowpox virus
- Ectromelia virus
- Horsepox virus
- Monkeypox virus
- Raccoonpox virus
- Skunkpox virus
- Taterapox virus
- Uasin Gishu virus
- Vaccinia virus (smallpox vaccine)
- Variola (smallpox) virus
- Volepox virus

https://brockuhistory.ca/ebooks/hist2f90/media/fray-bernardino-de-sahagn-florentine-codex-1529;

What about Monkeypox?

- Zoonotic infection
- First case in monkeys 1958 and in humans 1970
- 2003 outbreak in U.S. traced to the Giant Gambian Rat
- Few cases outside African countries prior to 2022
  - Previous cases linked to travel or animals

Table 2. Cases of monkeypox in endemic countries between 15 December 2021 to 1 May 2022

Country	Time period	Cumulative cases	Cumulative deaths
Cameroon	15 December 2021 to 22 February 2022	25	<5
Central African Republic	4 March to 10 April 2022	6	<5
Democratic Republic of the Congo	1 January to 1 May 2022	1238	57
Nigeria	1 January 2022 to 30 April 2022	46	0

https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON385;
https://www.nytimes.com/2022/01/11/world/europe/magawa-landmine-hero-rat-dead.html

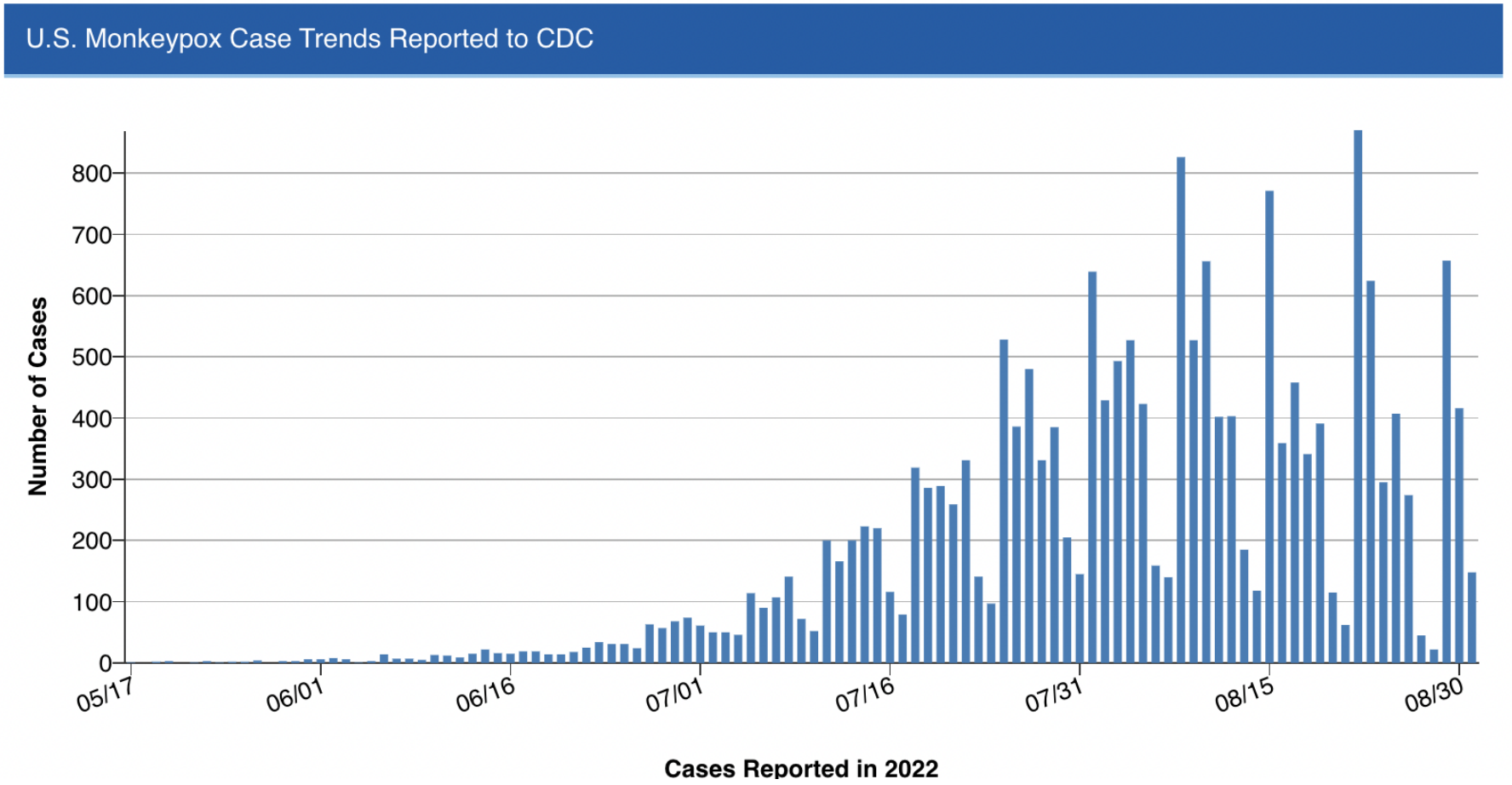
U.S. Monkeypox Case Trends Reported to CDC

As of August 31, 2022

May 6 2022:
Monkeypox in UK

July 23, 2022
World Health Organization declared Public Health Emergency of International Concern

Trends of monkeypox cases reported to CDC since May 17, 2022, the start of the response to the current outbreak in the United States. Data include cases with reporting date.*

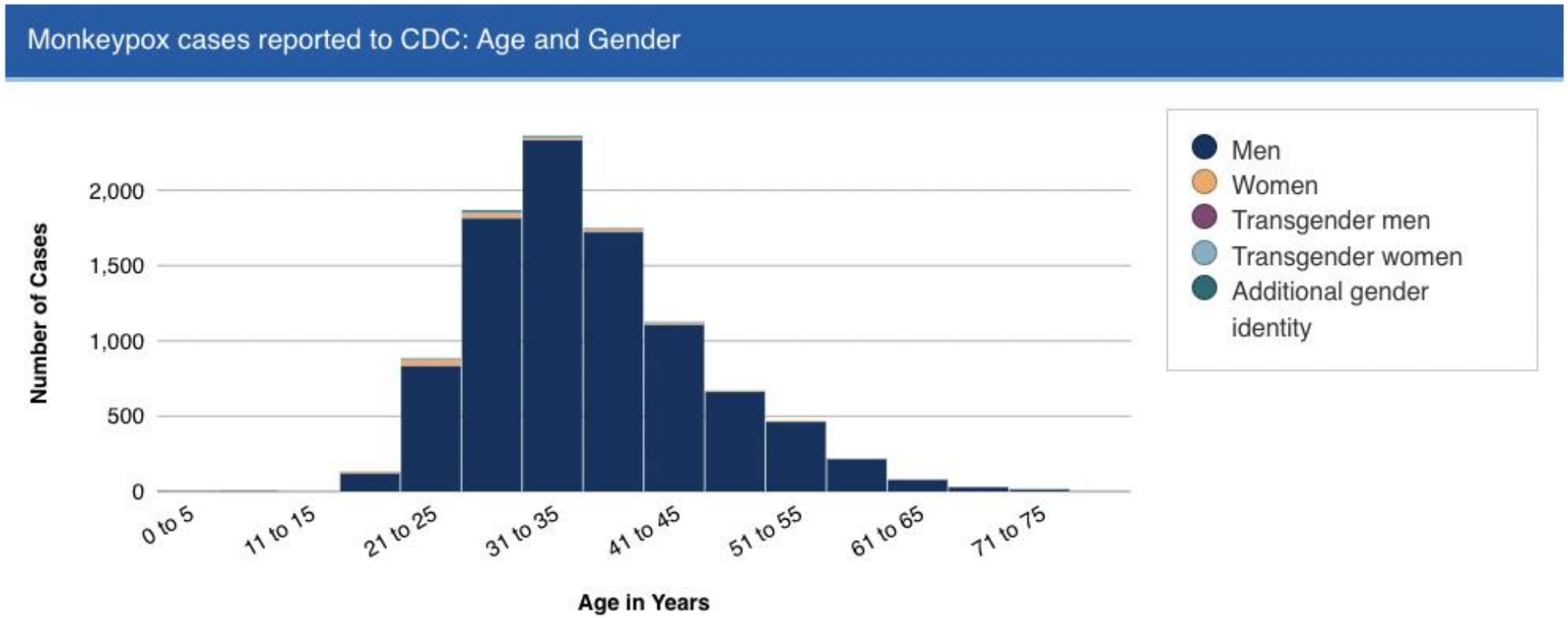


Available from https://www.cdc.gov/poxvirus/monkeypox/response/2022/mpx-trends.html

Monkeypox Cases by Age and Gender, Race/Ethnicity, and Symptoms

Data as of 31 Aug 2022 2:00 PM EDT

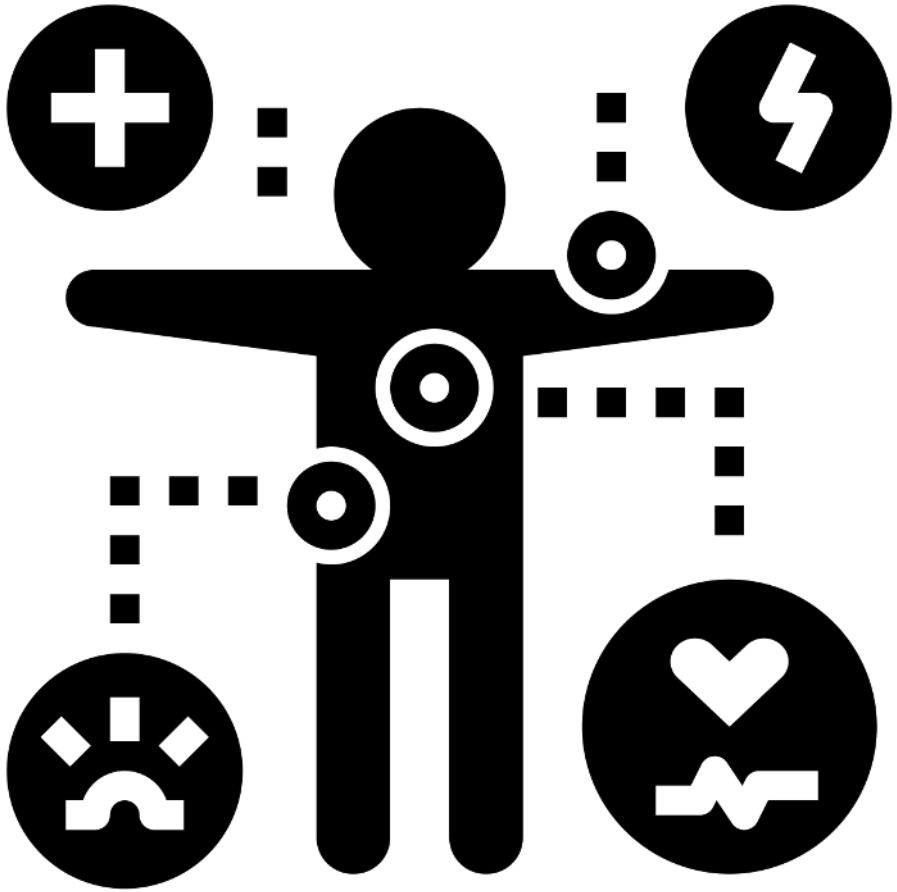
Print



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

Symptoms in people diagnosed & reported to CDC

- 98% rash
- 64% fever
- 61% chills
- 58% headache
- 57% enlarged lymph nodes
- 56% muscle aches
- 56% itching
- 43% rectal pain



This Is Not the Monkeypox That Doctors Thought They Knew

The patients turning up at clinics often have a range of symptoms that are not typical of the infection. Some of the infected seem to have no symptoms at all.

Monkeypox patients have turned up with what looked like mosquito bites, pimples or ingrown hairs, not the large pustules usually associated with the infection. Some did not even have visible lesions but felt excruciating pain when swallowing, urinating or emptying their bowels.

Mandavilli, NY Times Aug 26

Signs and Symptoms of Monkeypox

- Incubation period (3–17 days)
  - ↳ Early symptoms and rash
    - ↳ Rash progression (2–4 weeks)
- Severity of outcomes
  - Unlikely to cause death
  - Might be more severe among
    - People who are pregnant
    - People who are immunocompromised
    - People with atopic dermatitis or eczema
    - Young children (<8 years of age)

: https://www.cdc.gov/poxvirus/monkeypox/symptoms.html

Examples of Monkeypox Rashes

Photo credit: UK Health Security Agency

Key Characteristics of Monkeypox Rash

More Monkeypox Rash Photos

Photo Credit: NHS England High Consequence Infectious Diseases Network

The NEW ENGLAND JOURNAL of MEDICINE

RESEARCH SUMMARY

Monkeypox Virus Infection in Humans across 16 Countries — April–June 2022

Thornhill JP et al. DOI: 10.1056/NEJMoa2207323

Evolution of Cutaneous (Penile) Lesions

Day 6 PCR positive

Day 21 PCR positive

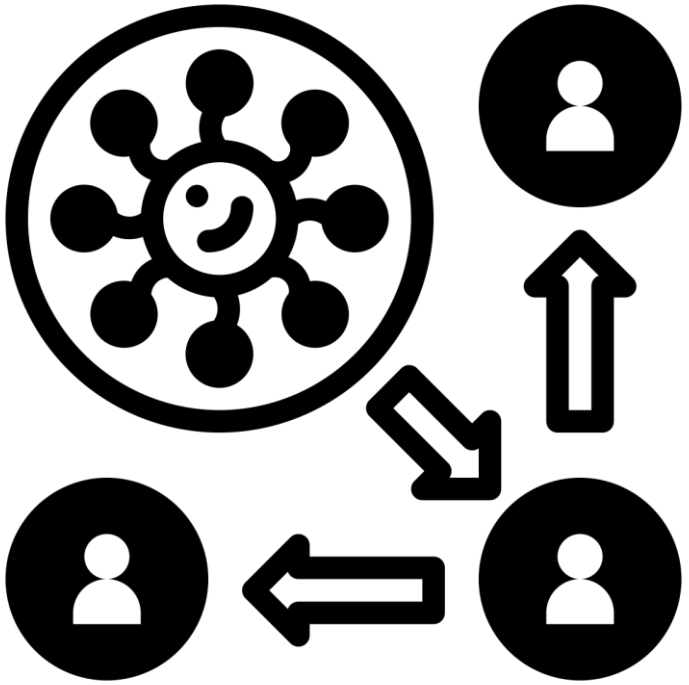
Day 28 PCR negative

Perioral and Oral Lesions

Perianal Lesions

Characteristic	All Persons (N=528)
Site of positive monkeypox viral PCR — no. (%)	
Skin or anogenital lesion	512 (97)
Nose or throat swab	138 (26)
Blood	35 (7)
Urine	14 (3)
Semen	29 (5)
Site of skin lesions — no. (%)	
Anogenital area	383 (73)
Face	134 (25)
Trunk or limbs	292 (55)
Palms or soles	51 (10)
Site of mucosal lesions — no./total no. (%)	
Anogenital only	148/217 (68)
Oropharyngeal only	50/217 (23)
Anogenital and oral	16/217 (7)
Nasal and eye	3/217 (1)

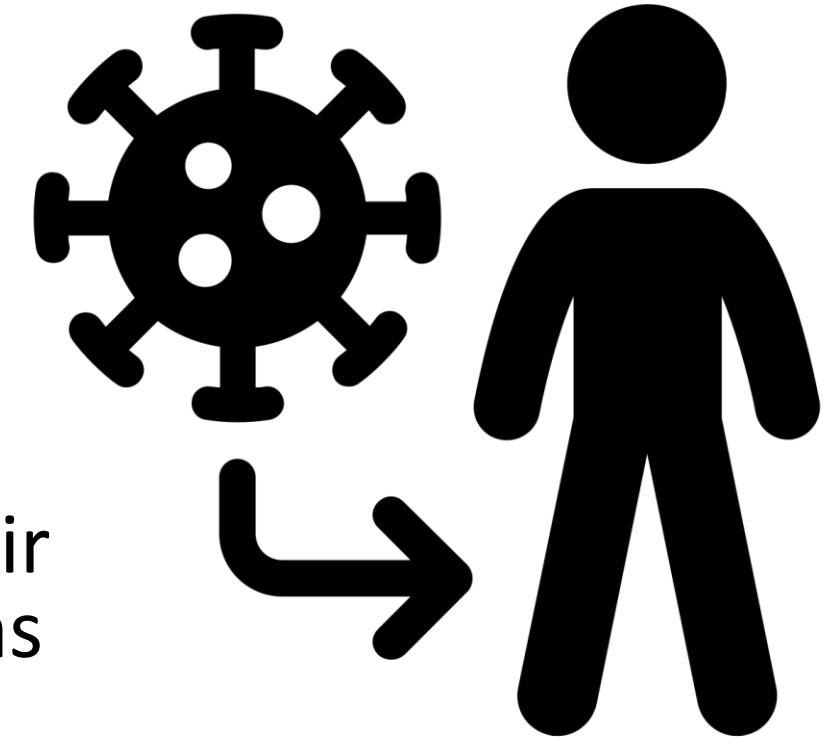
Transmission of Monkeypox



- Monkeypox can spread to anyone through
  - Direct contact with monkeypox rash or scabs
  - Contact with objects, fabrics (clothing, bedding, or towels), and surfaces that have been used by someone with monkeypox
  - Contact with respiratory secretions during prolonged, face-to-face contact
- Monkeypox can be spread during intimate contact, including
  - Oral, anal, and vaginal sex, or touching the genitals or anus of a person with monkeypox
  - Hugging, massage, or kissing
  - Touching things that were used by a person with monkeypox

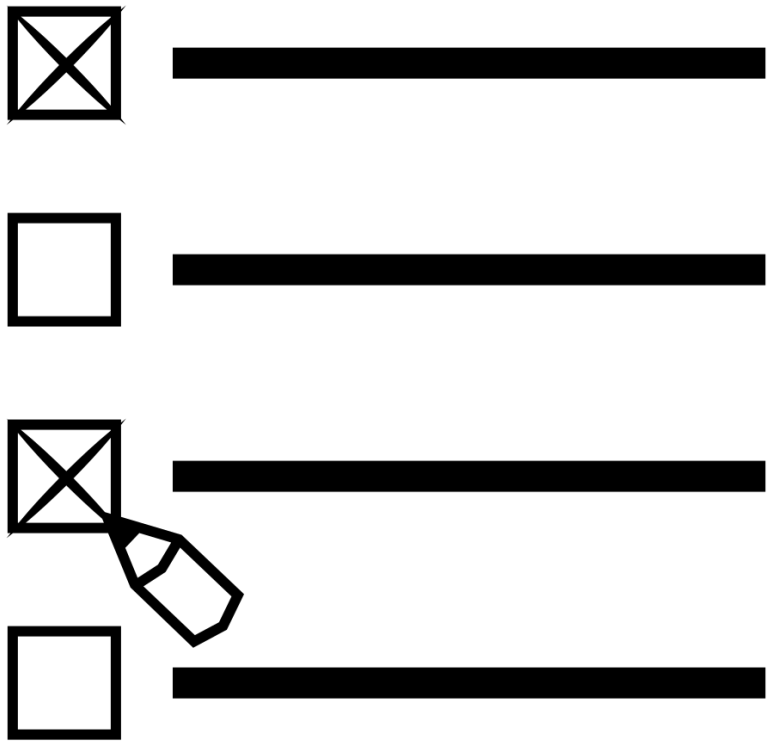
Who do we think is at increased risk?

- People who have been identified by public health officials as a contact of someone with monkeypox
- People who are aware that one of their sexual partners in the past 2 weeks has been diagnosed with monkeypox
- People who had multiple sexual partners in the past 2 weeks in an area with known monkeypox

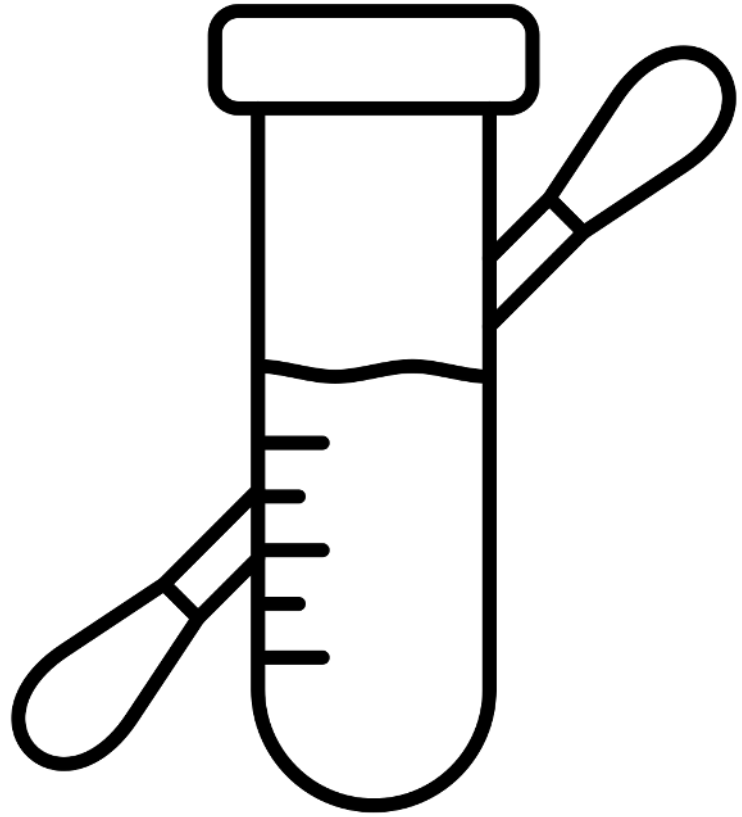


Is Monkeypox a sexually transmitted infection?

- Yes, but it is not just a sexually transmitted infection.



Testing for Monkeypox



- Wear mask, goggles and gloves
- Best to swab the ”pock” or the skin lesion
- If high concern and no lesions, can swab the place that is painful (***may need to send to specific laboratory for “blind swabs”)

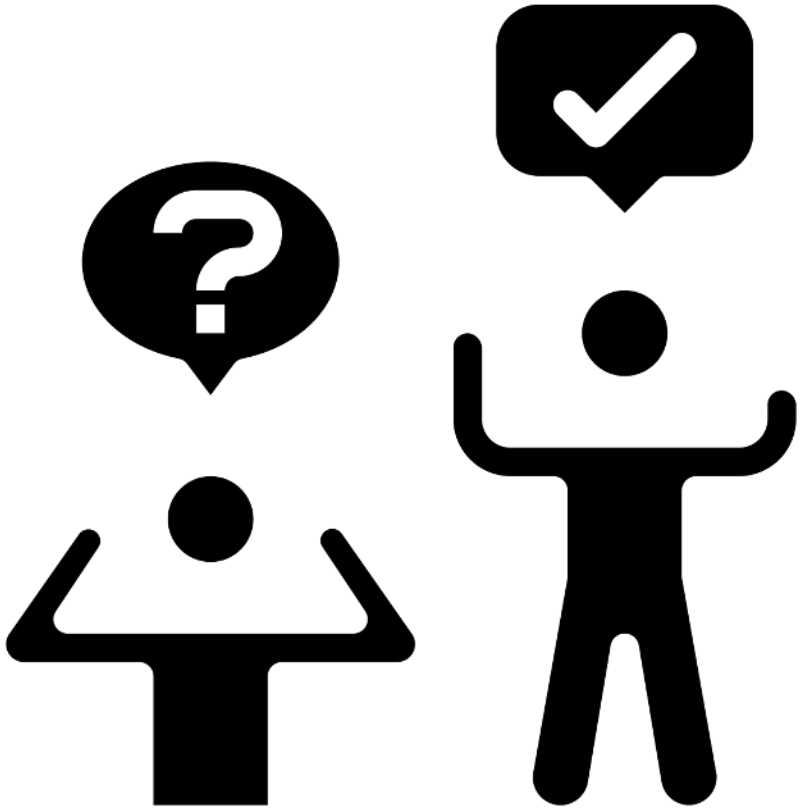
Materials needed:

- Sterile screw-capped plastic 15 mL tube or small O-ring (1.5-2ml) (black screw top tubes)
- Sterile, dry synthetic swab (including but not limited to polyester, nylon, rayon, or Dacron) with plastic shaft. Do not use cotton tipped, foam swabs, or wooden shaft swabs. **Use of swabs with flexible shafts (e.g. nasopharyngeal (NP) swabs) are not recommended and may yield Inconclusive results due to ineffective swabbing and require recollection.**
- Sterile scalpel or sterile 26-gauge needle (for scab removal only).

https://www.mass.gov/info-details/monkeypox-information-for-health-care-providers

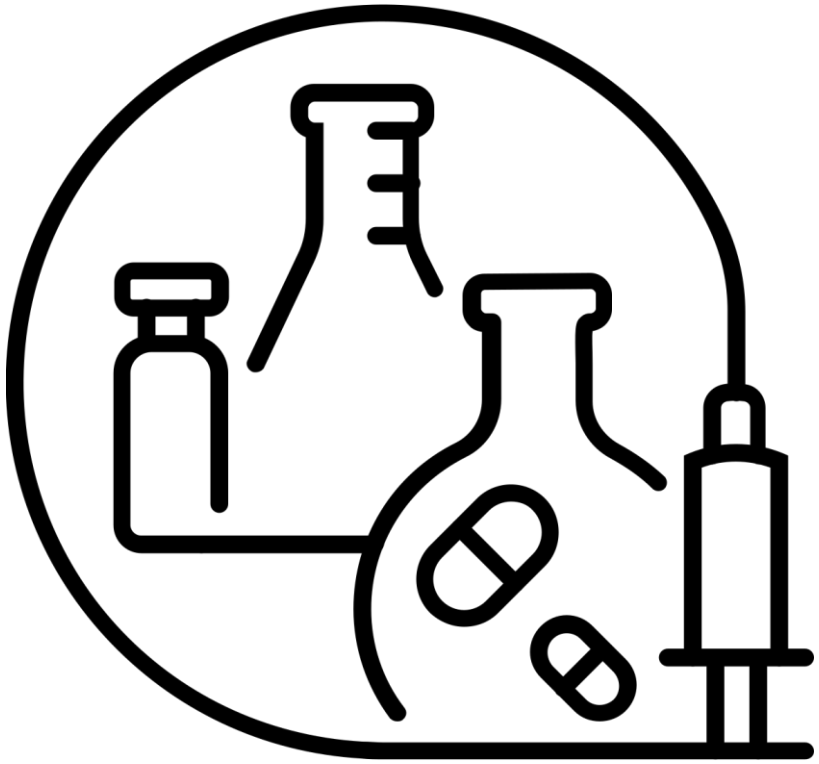
Testing Advice for the Correctional Setting

- <u>Low barrier to testing</u>
- We are learning more and more about this virus every day
- Better to do the test and find out that it is positive then have an outbreak



Treatment for Monkeypox

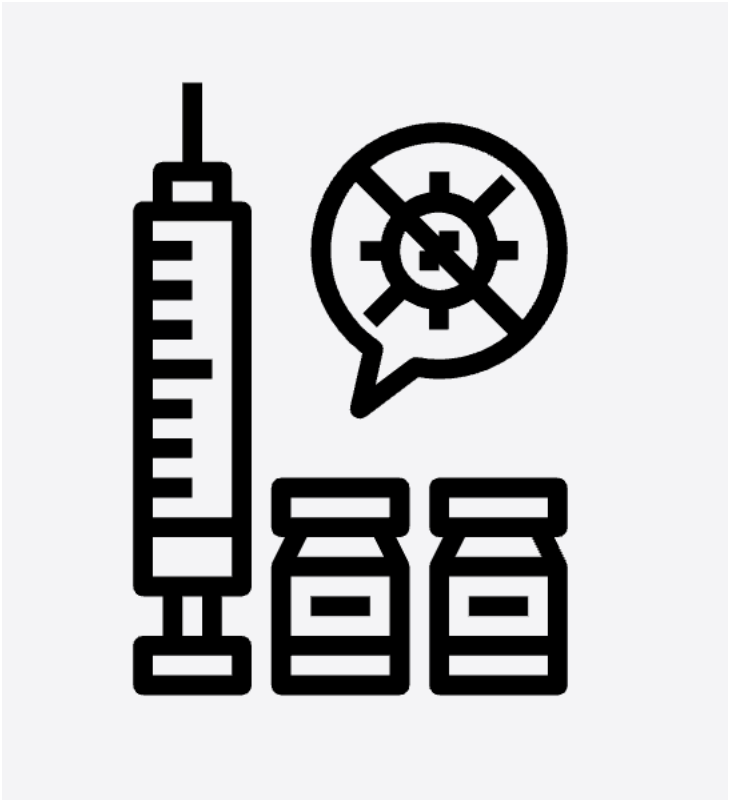
- There are no treatments specifically for monkeypox
- Treatments for smallpox, like tecovirimat (TPOXX), may be used to prevent and treat monkeypox
- Oral and IV formulations
- Treatment for people with severe disease or at risk for severe disease
- There is a a consent form for treatment



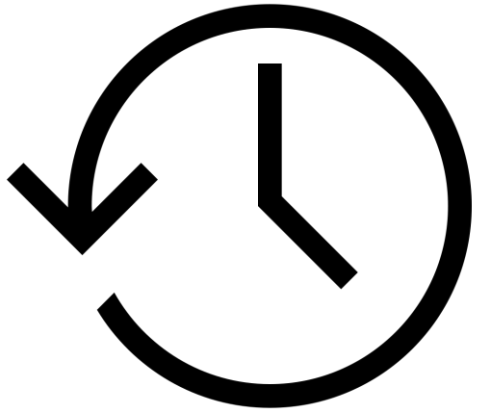
https://www.cdc.gov/poxvirus/monkeypox/clinicians/obtaining-tecovirimat.html

Vaccines for Monkeypox

- JYNNEOS, Imvamune and Imvanex
- Live, attenuated, non-replicating modified vaccinia Ankara
- Development started in 1953 in Turkey; First used in Germany in 1977
- Approved in 2019 for prevention of smallpox and monkeypox for people >18
- 2 doses, 28 days apart, subcutaneous
- August 9: approved as lower dose (1/5 dose) intradermal, 28 days apart



Vaccine Use



(1) Pre-exposure (what we typically think about for most vaccines)

(2) Post-exposure:

> “CDC recommends that the vaccine be given within 4 days from the date of exposure in order to prevent onset of the disease. If given between 4–14 days after the date of exposure, vaccination may reduce the symptoms of disease, but may not prevent the disease.”

How long does someone with monkeypox need to isolate

- Isolation for 2-4 weeks, depending on how quickly feel better and state of the scabs
- Should not be around other people until all of the pox are scabbed over/crusted over.
- If you have a case in your jail/prison, should work closely with specialists to determine when the person can come out of isolation.

Enanthem Through the Scab Stage

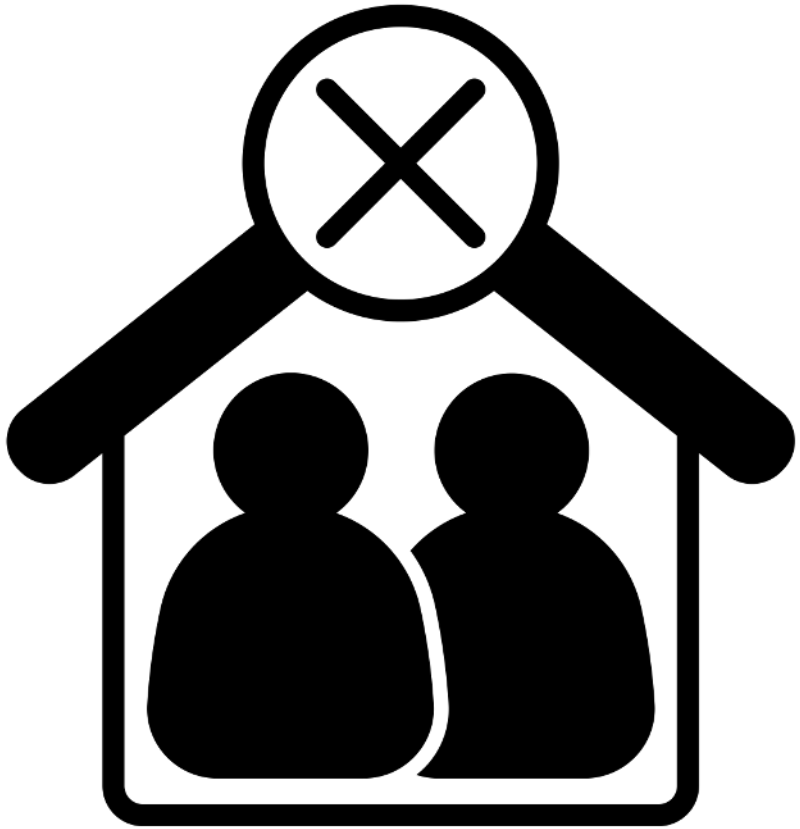
Stage	Stage Duration	Characteristics
Enanthem		• Sometimes, lesions first form on the tongue and in the mouth.
Macules	1–2 days	• Macular lesions appear.
Papules	1–2 days	• Lesions typically progress from macular (flat) to papular (raised).
Vesicles	1–2 days	• Lesions then typically become vesicular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

Quarantine (different than COVID!)

- People who are exposed to monkeypox do not need to quarantine
- Consider vaccination (pre-exposure prophylaxis)
- Monitor closely for symptoms



Centers for Disease Control and Prevention

Monkeypox Considerations for Congregate Settings

https://www.cdc.gov/poxvirus/monkeypox/specific-settings/congregate.html

Identifying and Responding to Cases in Correctional and Detention Facilities

What we Know about MPX in Corrections

- **In all settings, the primary mode of transmission has been close, skin-to-skin contact with someone who has monkeypox**

- **To date, only individual, un-linked cases in corrections have been reported to CDC**
  - Most have been identified at intake
  - CDC has not received reports of transmission/outbreaks *inside* a correctional or detention facility

- **Based on available data, respiratory transmission *without* close contact is not a primary concern**

Monkeypox is different from COVID

What to Expect as Data Accumulate

- Considerations reflect *current data available now*
- Current monkeypox outbreaks have different transmission patterns than previous outbreaks – data are still accumulating
- If new data indicate changes in transmission patterns, considerations from CDC may shift in the future

Infection Control for Monkeypox

Everyday Operations

- Continue normal operations for infection prevention
  - Encourage staff to stay home when sick
  - Provide and replenish handwashing supplies at no cost
  - Clean and disinfect regularly
  - Identify space to isolate residents who have monkeypox
  - Ensure personal protective equipment (PPE) is available

Preventing Monkeypox

- Offer **vaccination** to people who are at higher risk
  - People identified as a contact of someone with monkeypox
  - People aware that one of their sexual partners in the past 2 weeks has been diagnosed with monkeypox
  - People who had multiple sexual partners in the past 2 weeks in an area with known monkeypox

- Provide information to staff and residents:
  - **Avoid close, skin-to-skin contact** with people who have a rash that looks like monkeypox
  - Avoid contact with **objects and materials** that a person with monkeypox has used
  - **Wash hands** often

Managing Monkeypox Cases

Medically isolate	- Place the person in medical isolation (or restrict from work if staff) - End isolation when scabs have fallen off and fresh layer of healthy skin has formed *(typically 2-4 weeks after symptoms begin)* - Arrange access to virtual visitation & programming, when possible
Clean & disinfect	- Clean and disinfect areas where the person with monkeypox spent time - Place laundry & linen in separate bag (disposable or fabric); do not shake; wash with detergent using standard procedures
Alert public health	Alert the public health department
Communicate	Communicate with staff and residents about potential exposure, monitoring, and PEP *Keep messages fact-based to avoid introducing stigma*
PPE (residents & staff)	- Entering the isolation space – *N95, gown, gloves, eye protection* - Handling laundry – *mask or respirator, gown, gloves, eye protection (before wash cycle)* - Cleaning and disinfecting – *mask or respirator, gown, gloves, eye protection*

Managing Exposures

- Continue routine activities if no signs or symptoms (quarantine not necessary)
- Monitor for symptoms for 21 days
- If someone who was exposed develops symptoms, follow isolation guidelines

- CDC **Exposure Risk Assessment Tool** for Community Settings
  - Classifies degree of risk for different types of exposures
  - Provides recommendations for PEP and symptom monitoring based on degree of risk
- Work with your health department to determine whether someone is eligible for PEP

Monitoring: https://www.cdc.gov/poxvirus/monkeypox/clinicians/monitoring.html

Exposure Risk Assessment: https://www.cdc.gov/poxvirus/monkeypox/clinicians/monitoring.html#anchor_1660156583078

Emerging Data in Corrections

Monkeypox Case in the Cook County Jail – Chicago, IL

What We Know about MPX in Corrections

Cook County Jail Study – July-August 2022

Monkeypox Case Identified in Cook County Jail – Chicago, July 22, 2022

28-year-old male, MSM, HIV+, previously unstably housed

7/12 Booked in Jail → 7/13 Symptom onset → 7/19 Clinically evaluated; isolated → 7/22 Confirmed; CDC team requested → 7/26 Chicago DPH offered PEP → 7/29 – 8/5 CDC team deployed

Environmental Sampling	▪ **Evaluate potential role of fomite transmission** (54 samples from surfaces in 2 dorms, 13-18 days after patient last occupied them)
Serologic Testing	▪ **Identify possible undetected secondary cases** (specimens from 14/58 detained persons who shared a dorm with patient)
In-depth Interviews	▪ **Identify contact patterns among persons sharing dormitory** ▪ **Understand baseline monkeypox knowledge and preferred modes of communication** (16/19 detained persons who shared a dorm with patient, 13 staff)

Cook County Jail Study – July-August 2022

Preliminary Findings

Potentially Exposed Cohort (n=58)

- Patient was housed in two dorm-style housing units while he had a rash
- Communal bathrooms, meals and group activities inside unit (quarantined out of caution, limited data)
- 20/58 discharged before exposure notification, PEP

Preliminary Findings

Environmental samples (n=54)

- 1 tested positive by PCR (culture pending)

Serologic samples (n=14)

- 0 tested IgM-positive
- 3 tested IgG-positive
  (consistent with historic exposure or vaccination)

PEP

- 13/38 persons who were offered PEP accepted

Cook County Jail Study – July-August 2022

Preliminary Findings

Possible Exposure Risks Disclosed in Interviews

- Washing laundry in communal sinks or buckets
- Sharing eating utensils and personal care items
- Sitting on others' beds
- No sexual contact reported

Communication

- PEP uptake higher in dorm where education was provided in small groups
  - Fear and stigma – safety & privacy concerns in dorm setting
- Broad desire for more information (staff and residents)

Limitations

- Loss to follow-up (potentially exposed residents)
  - 20/58 discharged before notification, PEP offer
  - 4 discharged after notification but before 21-monitoring period ended
- Serologic testing – only 14/58 (24%) were available and participated

Cook County Jail Study – July-August 2022

Conclusions & Public Health Implications for Corrections

- After a symptomatic monkeypox patient lived in a communal dorm for 7 days, no secondary cases were identified through symptom screening or serologic testing of potentially exposed residents.
- However, residents did disclose contact patterns that could lead to exposure, and one surface in the patient's personal space in the shared dorm tested positive for monkeypox virus.

- Ensure timely, thorough cleaning and disinfection of spaces where people with monkeypox infection have spent time.
- Provide education about common interactions to avoid to prevent exposure.
- When offering PEP, provide education and vaccination in a private space to reduce fear of stigma and increase uptake

What to Expect as Data Accumulate

- Considerations reflect *current data available now*
- Current monkeypox outbreaks have different transmission patterns than previous outbreaks – data are still accumulating
- If new data indicate changes in transmission patterns, considerations from CDC may shift in the future

Corrections-specific Considerations from CDC

- Publication of Cook County Jail data in *MMWR* ~end of September – will contain data-driven corrections-specific considerations
- Corrections landing page on CDC monkeypox website is currently in progress – will have links to resources and limited corrections-specific content
- CDC is working with external corrections partners to develop corrections-specific communications materials – will distribute through NCCHC and other partners when complete

Thank You!

NCCHC

Cook County Jail

Chicago Department of Public Health

Illinois Department of Public Health

CDC laboratory and STLT partners

Q&A

Supplemental

Degree of Exposure: **Higher**

Recommendations

- Monitoring: Yes
- PEP¶: Recommended

Exposure Characteristics

- Contact between an exposed individual's broken skin or mucous membranes with the skin lesions or bodily fluids from a person with monkeypox -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 monkeypox -OR-
- Contact between an exposed individual's broken skin or mucous membranes with materials (e.g., linens, clothing, objects, sex toys) that have contacted the skin lesions or bodily fluids of a person with monkeypox (e.g., sharing food, handling or sharing of linens used by a person with monkeypox without having been disinfected† or laundered)

Degree of Exposure: **Intermediate**

Recommendations

- Monitoring: Yes
- PEP¶: Informed clinical decision making recommended on an individual basis to determine if the benefits of PEP outweigh the risks

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Exposure Characteristics

- Being within 6 feet for a total of 3 hours or more (cumulative) of an unmasked person with monkeypox without wearing a surgical mask or respirator -OR-
- Contact between an exposed individual's intact skin with the skin lesions or bodily fluids from a person with monkeypox -OR-
- Contact between an exposed individual's intact skin with materials (e.g., linens, clothing, sex toys) that have contacted the skin lesions or bodily fluids from a person with monkeypox without having been disinfected† or laundered -OR-
- Contact between an exposed individual's clothing with the person with monkeypox's skin lesions or bodily fluids, or their soiled linens or dressings (e.g., during turning, bathing, or assisting with transfer)

Degree of Exposure: **Lower**

Recommendations

- Monitoring: Yes
- PEP¶: None

Exposure Characteristics

- Entry into the living space of a person with monkeypox (regardless of whether the person with monkeypox is present), and in the absence of any exposures above

Degree of Exposure: **No Risk**

Recommendations

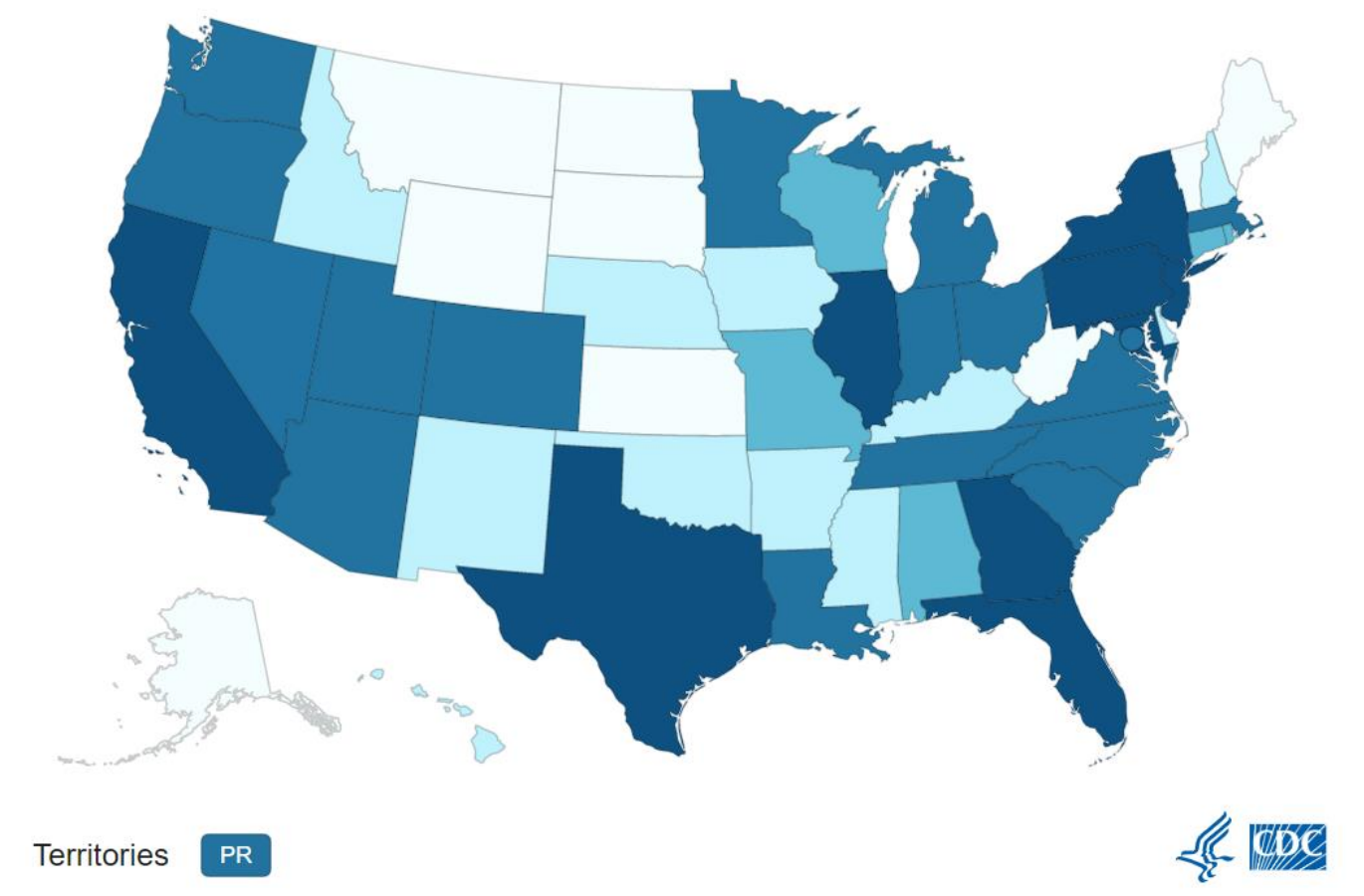
- Monitoring: No
- PEP¶: None

Exposure Characteristics

- No contact with the person with monkeypox, their potentially infectious contaminated materials, nor entry into their living space

2022 U.S. Map Total Cases

As of September 2, 2022



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

Treatment Consideration

Tecovirimat may be considered for treatment in people infected with *Monkeypox virus*:

- 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 (e.g., HIV/AIDS, 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)
  - Pediatric populations, particularly patients younger than 8 years of age
  - Pregnant or breastfeeding women
  - People with a history or presence of atopic dermatitis, people with other active exfoliative skin conditions (e.g., eczema, burns, impetigo, varicella zoster virus infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease [keratosis follicularis])
  - People with one or more complication (e.g., secondary bacterial skin infection; gastroenteritis with severe nausea/vomiting, diarrhea, or dehydration; bronchopneumonia; concurrent disease or other comorbidities)
- With aberrant infections involving accidental implantation in eyes, mouth, or other anatomic areas where *Monkeypox virus* infection might constitute a special hazard (e.g., the genitals or anus)