


Understanding Monkeypox and the Risk of Zoonotic Threats



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hot topics in practice

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 FOR PUBLIC HEALTH PRACTICE

The Northwest Center for Public Health Practice acknowledges the land we occupy today as the traditional home of the Tulalip, Muckleshoot, Duwamish and Suquamish tribal nations.

Without them we would not have access to this working, teaching and learning environment. We humbly take the opportunity to thank the original caretakers of this land who are still here.

Question for the Viewers

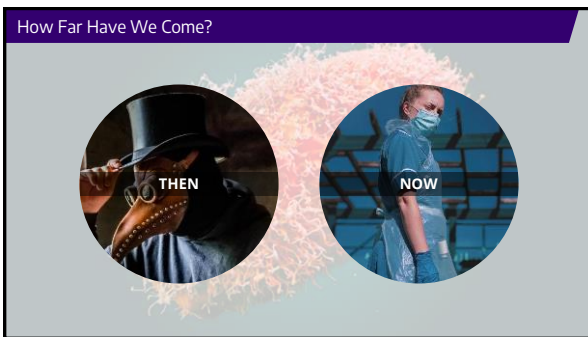
?

Describe your level of knowledge or experience with the current outbreak of monkeypox:

- A. A lot
- B. Some
- C. Little
- D. None







History of Pandemics



Societies shift to agrarian communities

- Scale and spread of diseases increases dramatically
- Death rates gradually reduce over time

What are the most significant contributors to epidemics globally?

- A. Increased contact with other populations (animal or human)
- B. Widespread trade (especially exotic trade routes) and travel
- C. Larger cities
- D. All of the above

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History of Pandemics

Widespread trade networks emerge

- New opportunities for human and animal interactions speed up epidemics (malaria, tuberculosis, leprosy, influenza, smallpox)
- Larger cities and new trade routes accelerate likelihood of pandemics



Increased Travel



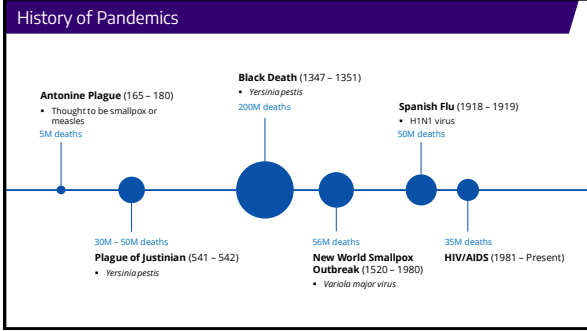
International travel is an inescapable part of today's world, and a major influencer of disease spread

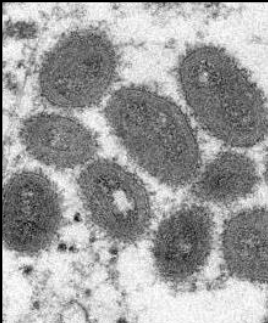
History of Pandemics



Societies move toward public health interventions

- Practice of quarantine begins in 14th century Venice
- Geography and statistical analysis used to solve cholera outbreak in mid-19th century London






Monkeypox Virus (MPV)

Genus *Orthopox* includes:

- Monkeypox
- *Variola virus* (smallpox)
- *Vaccinia virus* (smallpox vaccine)
- Cowpox
- Camelpox, horsepox, rabbitpox, raccoonpox, skunkpox, volepox

Two strains of monkeypox (with substrains)

- Central African
- West African



Monkeypox Epidemiology

Globe

- Identified 1958 during outbreaks in monkey research colonies
 - Major reservoir is likely rodents
- First human case 1970; outbreaks since
- Endemic cases and outbreaks in some central and western African countries
 - Outbreaks tend to die down ($R_0 < 1$)

United States

- Sporadic travel-related cases
- 2003 outbreak of 81 cases linked indirectly to imported exotic pets



Monkeypox Transmission

- Contact with lesions, lesion fluid, scabs, sexual fluids, saliva
 - Entry through skin, mucous membrane (eye, genitals)
- Transmission through fomites - dried scabs (e.g., bedding, clothing)
- Respiratory droplets if prolonged face-to-face contact (in theory)
- Transmission occurred in healthcare settings including through bedding



Monkeypox Clinical

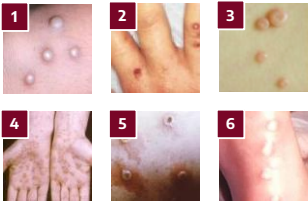
- Usual incubation: 7 - 14 days (range 5 - 21)
- Common early symptoms:
 - Fever, chills, headache, muscle aches, sore throat, cough, backache, swollen lymph nodes, exhaustion
- Rash: 1 - 3 days later, progresses
 - Macule (flat, red) to papule (raised) to vesicle (fluid) to pustule (pus) to scab (may scar)
 - Often starts on face, can be limited to anus/genitals
- Total duration: 2 - 4 weeks (contagious)
- Case fatality varies with strain, age, secondary infections

Identifying Monkeypox Rash

- Vesicles and pustules with well-circumscribed border
- Deep, may be dent in middle; often painful
 - Rash may start in mouth
 - May be on palms, soles
 - Any part of the body has lesions at the same stage usually but not always
 - Lesions can be only in genital area
 - May scar

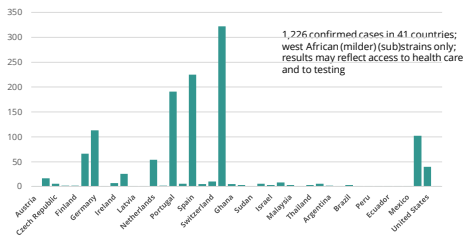


Similar Rashes



1. **Pox:** deep; one stage on a body site
2. **Chickenpox:** shallow, many stages on body site
3. **Molluscum contagiosum:** raised, may be dimpled
4. **Syphilis:** red, scaly, superficial
5. **Smallpox vaccine:** rash from wearing shirt of somebody with recent vaccine
6. **Herpes simplex:** superficial blisters

2022 Outbreak – Cases 6/9/2022



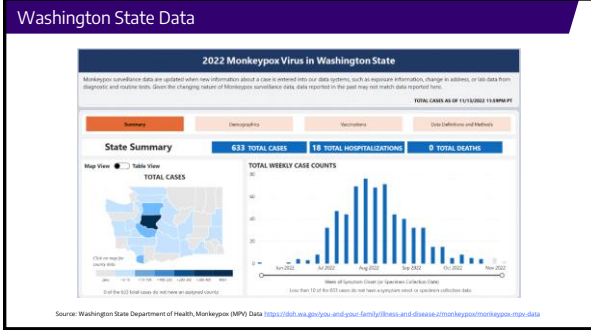
Source: Our World in Data, <https://ourworldindata.org/covid19cases>

Initial Timeline - 2022

- First non-travel case reported in UK on May 13th, 2022
- Awareness and testing resulted
- First US case identified on May 18th
- Currently reported in around 40 countries (all continents except Antarctica) and around 15 US states



Source: Centers for Disease Control & Prevention, <https://www.cdc.gov/epr/newsroom/updates/2022/06/09/index.html>



Monkeypox Therapeutics

- Vaccination to prevent
- Two antiviral agents theoretically active against the virus
 - Limited experience
 - Side effects
- Consider treatment for person:
 - With severe disease or complications
 - At high risk for severe disease (immunocompromised)
 - Aged <8 years
 - Pregnant or breastfeeding

Question for the Viewers

How would you assess the following statement?
"In my organization, we feel adequately prepared to respond to the next zoonotic disease outbreak."

- A. Agree
- B. Disagree
- C. I'm not sure



Racial and Economic Inequities

Monkeypox has not affected all Washingtonians equally:

	No.		No.
King	21,177	Jefferson	20
Spokane	13,366	Douglas	20
Snohomish	8,459	Island	22
Clark	300	San Juan	17
Thurston	253	Chelan	16
Strom	169	Spokane Harbor	150
Wahkiakum	211	Biaxle	140
Snohomish	122	Coville	140
Yakima	114	Franklin	140
Walla Walla	96	Grant	140
Columbia	25	Kittitas	140
Benjamin	21	Chelan	130
Shelton	14	DeWalla	30
Klickitat	13		
Whitman	12		
Total	24,143 *		

Hospitalizations	Deaths	Probable Cases	Other Adult Cases	Non-human Cases
18	0	3	5	0

Confirmed and probable cases by race and ethnicity

Race	Hispanic, Latino/a, Latinx	Non-Hispanic, Latino/a, Latinx	Unknown	Total
White	69	234	7	310
Black or African American	3	10	1	14
Asian	0	20	1	21
American Indian or Alaska Native	3	8	0	11
Native Hawaiian or Other Pacific Islander	1	3	0	4
Multiracial or Other Race	16	21	4	41
Unknown	18	87	71	176
Total	150	369	64	583

Monkeypox Messaging

Messaging matters

- What are the messages?
- Who is the audience?
- How is the audience best reached?

www.cdc.gov/monkeypox

Source: Centers for Disease Control & Prevention, <https://www.cdc.gov/newsroom/stories/monkeypox-risk-behaviors-media.html>

“ *The world seems to be repeating a historical script of perpetuating stigma and structural inequity that has plagued responses to other outbreaks. HIV, for example, is recurrently portrayed as a disease of gay men and Africans, and early depictions of COVID-19 focused on Asians.*

— Vinay Kamalath, “Monkeypox is recapitulating the stigma and structural inequity of HIV, Ebola, and other diseases”


Source: STAT article by Vinay Kamalath, June 5, 2022, <https://www.statnews.com/2022/06/05/monkeypox-recapitulating-stigma-structural-inequity-of-hiv-ebola-other-diseases/>

What Diseases Create the Most Stigma?



- HIV/AIDS
- Tuberculosis
- Plague
- COVID-19
- Smallpox
- Monkeypox
- Obesity
- Diabetes
- Lung cancer
- Ebola
- HPV

Preparing for What's Next



Key Takeaways and Messaging for MPV

- ✓ **Anyone who has close contact** with a person with symptoms of MPV and/or an MPV-like rash can get MPV and be infected.
- ✓ While MPV is disproportionately impacting the LGBTQ+ community right now, anyone can get it, **regardless of sexual orientation or gender identity**.
- ✓ **Show compassion and support** for individuals and communities most closely impacted and anyone who might be sick.
- ✓ As the outbreak wanes, the next public health focus is **preventing additional cases**.
- ✓ People at high risk of infection or who have had a recent close contact with someone who had a rash that looks like MPV, or someone who was diagnosed with MPV, should **talk with a health care provider** about getting vaccinated.
- ✓ Those who received their first dose need to **come back for their second dose** so that they have more durable protection against MPV.

What Is My Biggest Concern?

- A novel infectious disease
 - Low community immunity
 - Little clinical experience with this agent
 - Media hype
- Respiratory spread
- High R_0
- Limited diagnostic capability
- No vaccine available
- No treatment beyond supportive care



A Chat with Scott Lindquist





Allene Mares



Scott Lindquist

QUESTIONS?



To ask a question, please click the  icon in the Zoom toolbar to open your Q&A Pod.

Resources

Monkeypox
Washington State Department of Health
<https://doh.wa.gov/you-and-your-family/illness-and-disease/z/monkeypox>

Monkeypox (MPV) Data
Washington State Department of Health
<https://doh.wa.gov/you-and-your-family/illness-and-disease/z/monkeypox/monkeypox-mpv-data>

Monkeypox is recapitulating the stigma and structural inequity of HIV, Ebola, and other diseases
STAT News article by Winy Kampalath
<https://www.statnews.com/2022/06/05/monkeypox-recapitulating-stigma-structural-inequity-of-hiv-ebola-other-diseases/>

Reducing Stigma in Monkeypox Communication and Community Engagement
Centers for Disease Control and Prevention
<https://www.cdc.gov/poxvirus/monkeypox/resources/reducing-stigma.html>

Toolkits for Community, Work, and School
Centers for Disease Control and Prevention
<https://www.cdc.gov/poxvirus/monkeypox/resources/reducing-stigma.html>

A guide to preventing and addressing social stigma associated with COVID-19
World Health Organisation
<https://www.who.int/publications/m/item/a-guide-to-preventing-and-addressing-social-stigma-associated-with-covid-19>
