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
Disease Trends and Landscape

Misinformation and Stigmatization

Preparing for What’s Next
Disease Trends and Landscape
How Far Have We Come?

THEN

NOW
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
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
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 14\textsuperscript{th} century Venice
- Geography and statistical analysis used to solve cholera outbreak in mid-19\textsuperscript{th} century London
History of Pandemics

- **Antonine Plague** (165 – 180)
  - Thought to be smallpox or measles
  - 5M deaths

- **Plague of Justinian** (541 – 542)
  - *Yersinia pestis*
  - 30M – 50M deaths

- **Black Death** (1347 – 1351)
  - *Yersinia pestis*
  - 200M deaths

- **New World Smallpox Outbreak** (1520 – 1980)
  - *Variola major virus*
  - 56M deaths

- **Spanish Flu** (1918 – 1919)
  - *H1N1 virus*
  - 50M deaths

- **HIV/AIDS** (1981 – Present)
  - 35M deaths
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
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
1,226 confirmed cases in 41 countries; west African (milder) (sub)strains only; results may reflect access to health care and to testing

Source: Our World in Data, https://ourworldindata.org/monkeypox
Initial Timeline - 2022

- First non-travel case reported in UK on May 13\textsuperscript{th}, 2022
- Awareness and testing resulted
- First US case identified on May 18\textsuperscript{th}
- 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/poxvirus/monkeypox/response/2022/index.html
2022 Monkeypox Virus in Washington State

Monkeypox surveillance data are updated when new information about a case is entered into our data systems, such as exposure information, change in address, or lab data from diagnostic and routine tests. Given the changing nature of Monkeypox surveillance data, data reported in the past may not match data reported here.

TOTAL CASES AS OF 11/13/2022 11:59PM PT

State Summary

633 TOTAL CASES
18 TOTAL HOSPITALIZATIONS
0 TOTAL DEATHS

TOTAL WEEKLY CASE COUNTS

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:

### MPV Immunization Data as of October 26, 2022

<table>
<thead>
<tr>
<th>County</th>
<th>No.</th>
<th>County</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>King</td>
<td>21,172</td>
<td>Jefferson</td>
<td>29</td>
</tr>
<tr>
<td>Pierce</td>
<td>1,395</td>
<td>Douglas</td>
<td>25</td>
</tr>
<tr>
<td>Spokane</td>
<td>639</td>
<td>Island</td>
<td>23</td>
</tr>
<tr>
<td>Clark</td>
<td>555</td>
<td>San Juan</td>
<td>17</td>
</tr>
<tr>
<td>Thurston</td>
<td>251</td>
<td>Chelan</td>
<td>14</td>
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<tr>
<td>Kitsap</td>
<td>169</td>
<td>Grays Harbor</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Whatcom</td>
<td>211</td>
<td>Pacific</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Snohomish</td>
<td>122</td>
<td>Cowlitz</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Yakima</td>
<td>114</td>
<td>Franklin</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Walla Walla</td>
<td>86</td>
<td>Grant</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Clallam</td>
<td>55</td>
<td>Kittitas</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Benton</td>
<td>51</td>
<td>Okanogan</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Skagit</td>
<td>43</td>
<td>OR State</td>
<td>55</td>
</tr>
<tr>
<td>Klickitat</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whitman</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>25,133</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hospitalizations, Deaths, Pediatric Cases, Older Adult Cases, Non-human Cases

<table>
<thead>
<tr>
<th>Category</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalizations</td>
<td>18</td>
</tr>
<tr>
<td>Deaths</td>
<td>0</td>
</tr>
<tr>
<td>Pediatric Cases</td>
<td>3</td>
</tr>
<tr>
<td>Older Adult Cases</td>
<td>5</td>
</tr>
<tr>
<td>Non-human Cases</td>
<td>0</td>
</tr>
</tbody>
</table>

### Confirmed and probable cases by race and ethnicity

<table>
<thead>
<tr>
<th>Race</th>
<th>Hispanic, Latino/a, Latinx</th>
<th>Non-Hispanic, Latino/a, Latinx</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>69</td>
<td>234</td>
<td>7</td>
<td>310</td>
</tr>
<tr>
<td>Black or African American</td>
<td>3</td>
<td>55</td>
<td>1</td>
<td>59</td>
</tr>
<tr>
<td>Asian</td>
<td>0</td>
<td>29</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Multiracial or Other Race</td>
<td>58</td>
<td>23</td>
<td>4</td>
<td>85</td>
</tr>
<tr>
<td>Unknown</td>
<td>18</td>
<td>37</td>
<td>71</td>
<td>126</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>389</strong></td>
<td><strong>84</strong></td>
<td><strong>625</strong></td>
</tr>
</tbody>
</table>
Monkeypox Messaging

**Messaging matters**

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

Source: Centers for Disease Control & Prevention, https://www.cdc.gov/poxvirus/monkeypox/resources/social-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 Kampalath, “Monkeypox is recapitulating the stigma and structural inequity of HIV, Ebola, and 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
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
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 Vinay 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 Organization