SPECIAL Part 2

COVID-19 Response ECHO for Oregon Clinicians

Session 6  August 27, 2020
Housekeeping

• We have added sessions to this ECHO.
  • Originally scheduled to wrap-up on September 24, the ECHO program will now end on December 10. The remaining sessions in 2020 will occur on:
    • August 27
    • September 10
    • September 24
    • October 8
    • October 22
    • November 12
    • December 10

• Please update your calendars

• For the most up-to-date information on CME and Maintenance of Certification credits, please go to the ECHO connect portal at www.oregonechonetwork.org.
Housekeeping

- Everyone is muted
- Use the Chat Box to submit questions/comments/share links & resources
  - We will strive to select questions directly relevant to the presentations for asking during the session, but will not be able to address all questions
  - Questions not directly answered will be collated and used in the planning of future sessions
- All sessions will be recorded and available for viewing after the session within 24 hours
- Resources and transcript of today’s chat box, PowerPoint slides, and video recording will be posted on our ECHO Network website at www.connect.oregonechonetwork.org (where you registered)
- PLEASE fill out the post-session survey that you’ll receive by email today
Part 2 COVID-19 ECHO Series Goals

1) Share the latest information on COVID-19 impact in Oregon and amplify the public health response;
2) Provide guidance on evidence-based management of COVID-19 and its clinical, behavioral & care delivery consequences;
3) Create a forum to share clinical, community, and system cases to improve quality and inform ‘best practice’
COVID-19 ECHO Part 2 Expert Presentation Topics

• Covid-19 Clinical Course and Prognostic Factors
• Social determinants of SARS-CoV2 infection and suboptimal outcomes in vulnerable populations
• Catching Up and Keeping Up on Routine Immunizations as COVID-19 Continues
• Proactive outreach for high risk populations/population-based care in the time of COVID
• Today’s Session: COVID-19 Diagnostics- Ellie Sukerman MD, OHSU Infectious Disease
• September 10: Vaccine Development Update- Mark Slifka PhD, Virologist, OHSU
Today’s Agenda

• COVID-19 Update:
  • Oregon Health Authority
• Expert presentation: “Covid-19 Testing Updates” - Ellie Sukerman MD, OHSU Infectious Disease
• Community Presentation: “Case Investigation and Contact Tracing” – David Cuevas, Disease Intervention Specialist, Multnomah County
• Q & A
The COVID-19 Pandemic Update in Oregon

As of August 26:
• 25,571 Total Cases
• 2,063 Hospitalized Cases
• 433 Deaths
The COVID-19 Pandemic Update in Oregon

For the week of **August 16-22***:

- 22,944 tests completed
- Of specimens collected, 5.1% were positive
- 1,233 new cases

*Numbers will change as additional test results from specimens collected during the time period are reported*

<table>
<thead>
<tr>
<th>Date</th>
<th>Positive</th>
<th>Negative</th>
<th>Total Results</th>
<th>% Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/4</td>
<td>1777</td>
<td>32424</td>
<td>34201</td>
<td>5.2</td>
</tr>
<tr>
<td>7/11</td>
<td>2297</td>
<td>37935</td>
<td>40232</td>
<td>5.7</td>
</tr>
<tr>
<td>7/18</td>
<td>2194</td>
<td>38706</td>
<td>40900</td>
<td>5.4</td>
</tr>
<tr>
<td>7/25</td>
<td>2048</td>
<td>33843</td>
<td>35891</td>
<td>5.7</td>
</tr>
<tr>
<td>8/1</td>
<td>2010</td>
<td>30390</td>
<td>32400</td>
<td>6.2</td>
</tr>
<tr>
<td>8/8</td>
<td>1810</td>
<td>32819</td>
<td>34629</td>
<td>5.2</td>
</tr>
<tr>
<td>8/15</td>
<td>1720</td>
<td>31289</td>
<td>33009</td>
<td>5.2</td>
</tr>
<tr>
<td>8/22</td>
<td>1233</td>
<td>22944</td>
<td>24177</td>
<td>5.1</td>
</tr>
<tr>
<td>Total to date</td>
<td>22234</td>
<td>467761</td>
<td>489995</td>
<td>4.5</td>
</tr>
</tbody>
</table>

*Numbers will change as additional test results from specimens collected during the time period are reported*
Epidemiologic Link of COVID-19 Cases: sporadic cases still leading
Latest Epidemic Projections – Oregon

**Figure 2:** Model projections for the next 4 weeks, assuming that after August 13: 1) transmission does not change (red line), 2) transmission decreases by 10 percentage points (blue line), and 3) transmission increases by 10 percentage points (green line). The lighter shaded areas correspond to 80% forecast intervals (i.e., 10th and 90th percentiles of the projection).
Latest Epidemic Projections – Oregon

Figure 3: Projected effective reproduction number (Re) through September 8, assuming that starting August 14: 1) no change in transmission (red line), 2) transmission decreased by 10 percentage points (blue line), and 3) transmission increased by 10 percentage points (green line). The lighter shaded areas correspond to 80% forecast intervals (i.e., 10th and 90th percentiles of the projection). Re is the expected number of secondary cases that a single case generates.
School Readiness Metrics

Required for return to in-person instruction, or a hybrid model of onsite and online learning:

**State level**
COVID-19 test positivity ≤5% in the preceding 7 days for 3 weeks in a row

**County level**
≤10 COVID-19 cases per 100,000 population in the preceding 7 days
COVID-19 test positivity ≤5% in the preceding 7 days for 3 weeks in a row
www.oregon.gov/ode/ Planning for 2020–21 School Year > Metrics Explainer
## School Readiness Metrics

www.healthoregon.org/coronavirus

### School Health and Safety Metrics

<table>
<thead>
<tr>
<th>County</th>
<th>Week Start Date</th>
<th>Case Count</th>
<th>Case rate per 100,000</th>
<th>Test Positivity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon, statewide</td>
<td>7/5/2020</td>
<td>1,944</td>
<td>46</td>
<td>5.7%</td>
</tr>
<tr>
<td></td>
<td>7/12/2020</td>
<td>2,405</td>
<td>57</td>
<td>5.4%</td>
</tr>
<tr>
<td></td>
<td>7/19/2020</td>
<td>2,179</td>
<td>51</td>
<td>5.7%</td>
</tr>
<tr>
<td></td>
<td>7/26/2020</td>
<td>2,330</td>
<td>55</td>
<td>6.2%</td>
</tr>
<tr>
<td></td>
<td>8/2/2020</td>
<td>2,182</td>
<td>52</td>
<td>5.2%</td>
</tr>
<tr>
<td></td>
<td>8/9/2020</td>
<td>2,003</td>
<td>47</td>
<td>5.3%</td>
</tr>
<tr>
<td></td>
<td>8/16/2020</td>
<td>1,698</td>
<td>40</td>
<td>5.1%</td>
</tr>
<tr>
<td>Baker</td>
<td>7/5/2020</td>
<td>7</td>
<td>42</td>
<td>2.7%</td>
</tr>
<tr>
<td></td>
<td>7/12/2020</td>
<td>1</td>
<td>6</td>
<td>7.0%</td>
</tr>
<tr>
<td></td>
<td>7/19/2020</td>
<td>9</td>
<td>54</td>
<td>5.6%</td>
</tr>
<tr>
<td></td>
<td>7/26/2020</td>
<td>8</td>
<td>48</td>
<td>6.2%</td>
</tr>
<tr>
<td></td>
<td>8/2/2020</td>
<td>8</td>
<td>48</td>
<td>3.1%</td>
</tr>
<tr>
<td></td>
<td>8/9/2020</td>
<td>15</td>
<td>89</td>
<td>7.3%</td>
</tr>
<tr>
<td></td>
<td>8/16/2020</td>
<td>11</td>
<td>65</td>
<td>20.0%</td>
</tr>
</tbody>
</table>
School Readiness Metrics

Click to Select County:
Multnomah

<table>
<thead>
<tr>
<th>County / State</th>
<th>Date</th>
<th>Test Positivity (%)</th>
<th>Case rate per 100,000</th>
<th>Case Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon</td>
<td>August 2</td>
<td>5.2%</td>
<td>51.51</td>
<td>2182</td>
</tr>
<tr>
<td>Oregon</td>
<td>August 9</td>
<td>5.2%</td>
<td>47.28</td>
<td>2003</td>
</tr>
<tr>
<td>Oregon</td>
<td>August 16</td>
<td>5.1%</td>
<td>40.08</td>
<td>1698</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County / State</th>
<th>Date</th>
<th>Test Positivity (%)</th>
<th>Case rate per 100,000</th>
<th>Case Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multnomah</td>
<td>August 2</td>
<td>4.3%</td>
<td>56.34</td>
<td>463</td>
</tr>
<tr>
<td>Multnomah</td>
<td>August 9</td>
<td>5.4%</td>
<td>50.62</td>
<td>416</td>
</tr>
<tr>
<td>Multnomah</td>
<td>August 16</td>
<td>4.5%</td>
<td>41.25</td>
<td>339</td>
</tr>
</tbody>
</table>

Criteria for In-Person Instruction (1)

- County and State meet the Standard to open In-Person Instruction

- If in-person, plan to transition to Comprehensive Distance Learning

- Required to initiate Comprehensive Distance Learning

Statewide Exceptions for In-Person (2)

- Allowance for limited in-person instruction for specific groups of students

- If 10-30 cases per 100,000 population: In-person education for K-3rd grade

- Districts with enrollment of <= 75 in total: In-person education for Small Schools

County Allowances for In-Person (3)

- Larger population counties (> 30,000 and > 6 people / square mile)

- Smaller population counties (<= 30,000 people)

- Low population-density counties (< 6 people / square mile)

Notes:

- A green check in this column indicates these conditions may apply to the selected county IF additional criteria are met (see link below). (1)(2)(3)

- A red X indicates the condition does not apply to this county. (1)(2)(3)

- A yellow exclamation point indicates the condition applies but data may be negatively trending in the last week. (1)

- A grey circle indicates the condition does not apply to the selected county (3), this condition is not available to the selected county because of the status of another condition (2), or the data for this county fall between criteria for conditions (1).

Additional criteria in ODE’s Following the Metrics guide can be found at: https://www.oregon.gov/ode/students-and-family/healthsafety/Documents/Following%20the%20Metrics%20Visual.pdf
COVID-19 Hospitalized Patients - Census Trends by Acuity
News

**CDC**

- Interim Guidance for Rapid Antigen Testing for SARS-CoV-2  
- Criteria for Return to Work for Healthcare Personnel with SARS-CoV-2 Infection (Interim Guidance), updated  

**OHA**

- Seroprevalence Estimates of SARS-CoV-2 Infection in Convenience Sample – Oregon  
  [http://dx.doi.org/10.15585/mmwr.mm6932a4external icon](http://dx.doi.org/10.15585/mmwr.mm6932a4external icon)
- Health Equity Grants to support communities hardest hit by COVID-19  
Questions
COVID Testing Updates

August 27, 2020  Ellie Sukerman, MD
Outline

• Diagnostic vs. screening testing

• Testing technologies, performance & availability
  – PCR, antigen, antibody
Diagnostic vs. Screening Testing

• **Diagnostic**
  – To identify current infection in those with signs/sxs consistent with COVID-19 OR
  – Asymptomatic but with known or suspected exposure

• **Screening**
  – Intended to identify infected, asymptomatic cases without known or suspected exposure

## Testing Technologies

<table>
<thead>
<tr>
<th></th>
<th>Molecular Tests</th>
<th>Antigen Tests</th>
<th>Antibody Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also referred to as:</td>
<td>• Diagnostic tests</td>
<td>• Rapid diagnostic test</td>
<td>• Serology testing</td>
</tr>
<tr>
<td></td>
<td>• Viral tests</td>
<td>• Note, some molecular tests are also rapid tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Nucleic acid amplification (NAAT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• RT-PCR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• LAMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site of collection</td>
<td>• NP, nasal or throat swab (most cases)</td>
<td>• Nasal or throat swab</td>
<td>• Finger stick or blood draw</td>
</tr>
<tr>
<td></td>
<td>• Saliva</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time to results</td>
<td>• Varies</td>
<td>• 1h or less</td>
<td>• Same day up to ~3d</td>
</tr>
<tr>
<td></td>
<td>• 1h for rapid tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Same day or up to 1 week+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NAAT Testing

• $\text{Sn}$ likely 70-98% -> false negatives up to ~30%

• Factors affecting false negative rate include timing of sample collection and quality of sampling

• $\text{Sp}$ high (~98-99%)
Testing Interpretation

• Take into account test characteristics and pre-test probability

• A ”positive” PCR test has more weight than a negative test due to the test’s high Sp but moderate Sn

• If high clinical suspicion for COVID-19 but the initial test is negative -> repeat testing
Timing of Testing

Before symptom onset | After symptom onset
---|---
Detection unlikely\textsuperscript{a} | PCR - Likely positive | PCR - Likely negative\textsuperscript{b}

Antibody detection

SARS-CoV-2 exposure

Symptom onset

Week -2 | Week -1 | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6
---|---|---|---|---|---|---|---
Nasopharyngeal swab PCR | Bronchoalveolar lavage/sputum PCR | IgM antibody | IgG antibody
Virus isolation from respiratory tract | Stool PCR

\textsuperscript{a}Detection unlikely before symptom onset.
\textsuperscript{b}PCR - Likely negative indicates a negative result from a PCR test.


28
# Site of Sampling

<table>
<thead>
<tr>
<th>Specimens and values</th>
<th>Bronchoalveolar lavage fluid (n = 15)</th>
<th>Fibrobronchoscope brush biopsy (n = 13)</th>
<th>Sputum (n = 104)</th>
<th>Nasal swabs (n = 8)</th>
<th>Pharyngeal swabs (n = 398)</th>
<th>Feces (n = 153)</th>
<th>Blood (n = 307)</th>
<th>Urine (n = 72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive test result, No. (%)</td>
<td>14 (93)</td>
<td>6 (46)</td>
<td>75 (72)</td>
<td>5 (63)</td>
<td>126 (32)</td>
<td>44 (29)</td>
<td>3 (1)</td>
<td>0</td>
</tr>
<tr>
<td>Cycle threshold, mean (SD)</td>
<td>31.1 (3.0)</td>
<td>33.8 (3.9)</td>
<td>31.1 (5.2)</td>
<td>24.3 (8.6)</td>
<td>32.1 (4.2)</td>
<td>31.4 (5.1)</td>
<td>34.6 (0.7)</td>
<td>ND</td>
</tr>
<tr>
<td>Range</td>
<td>26.4-36.2</td>
<td>26.9-36.8</td>
<td>18.4-38.8</td>
<td>16.9-38.4</td>
<td>20.8-38.6</td>
<td>22.3-38.4</td>
<td>34.1-35.4</td>
<td></td>
</tr>
<tr>
<td>95% CI</td>
<td>28.9-33.2</td>
<td>29.8-37.9</td>
<td>29.3-33.0</td>
<td>13.7-35.0</td>
<td>31.2-33.1</td>
<td>29.4-33.5</td>
<td>0.0-36.4</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviation: ND, no data.
NP vs. Nasal Swab

Comparison of nasopharyngeal versus nasal sampling for SARS-CoV-2 detection by molecular biology

<table>
<thead>
<tr>
<th>Nasopharyngeal sample/nasal sample results</th>
<th>No. of samples (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concordant results</td>
<td></td>
</tr>
<tr>
<td>Positive/positive</td>
<td>33 (75.0)</td>
</tr>
<tr>
<td>Negative/negative</td>
<td>7 (15.9)</td>
</tr>
<tr>
<td>Discordant results</td>
<td></td>
</tr>
<tr>
<td>Positive/negative*</td>
<td>4 (9.1)</td>
</tr>
<tr>
<td>Total</td>
<td>44 (100.0)</td>
</tr>
</tbody>
</table>

*a Of the four samples with discordant results, two samples had very low viral loads (C<sub>T</sub> of 38 on the N gene.

Saliva Testing

NP Swab vs. Saliva

- 622 patients
  - All had NP PCR
  - 522 had saliva PCR
  - 39 pts had +NP PCR
  - 33/39 (84.6%) also had +saliva

Pros vs. Cons of Nasal Swab or Saliva

- Decreased Sn compared to NP swabs
- May be a good alternative in face of limited resources (swabs, personnel), decreased discomfort
The persistent positive PCR problem

- Test-based strategy for discontinuation of transmission-based precautions or isolation no longer recommended

- Resulted in prolonged isolation or delayed return to work for those who continue to shed virus but are no longer infectious
Antigen Tests

• **Pros:** inexpensive, rapid results

• **Cons:** less sensitive than PCR (~84-97%) so needs to be interpreted in clinical context

• Performed on nasal or NP specimens
Potential Role of Antigen Tests

• Diagnostic testing
  – Early in course of infection when viral loads high and people are most infectious
  – Persons with known exposure

• Screening testing
  – High-risk congregate settings where repeat testing could quickly identify infection leading to rapid infection prevention and control intervention

Rapid Tests vs PCR

Which type of test is better for routine monitoring?

A rapid test that detects the virus here?

Or an expensive, supply-chain constrained PCR test that detects the virus here...

...and gives you results 4 days later after you have infected everyone else? 🙅‍♀️ ⚠️ ⚠️

Viral load estimates and test sensitivities from Larremore, 2020

https://www.medrxiv.org/content/10.1101/2020.06.22.20136309v2.full.pdf
Availability of Rapid Antigen Tests

- 3 assays with FDA EUA approval as of 8/25/20

- Use of these tests for diagnostic or screening testing requires FDA EUA
Antibody (Ab) Testing

• Not recommended for dx or exclusion of infection

• Should not be used to determine immunity or inform decisions to discontinue physical distancing or PPE
Ab Testing

Before symptom onset

Detection unlikely

After symptom onset

PCR - Likely positive

PCR - Likely negative

Antibody detection

SARS-CoV-2 exposure

Week – 2 | Week – 1 | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6

Symptom onset

Nasopharyngeal swab PCR
Bronchoalveolar lavage/sputum PCR
Virus isolation from respiratory tract
Stool PCR
IgM antibody
IgG antibody

Timing of Ab Testing

- Consider IgG testing if high clinical suspicion with repeatedly negative PCR results

- Best sensitivity at 3-4 weeks after sx onset

IDSA Ab Testing Guidelines

• For pediatric pts with multisystem inflammatory syndrome, suggest using IgG and PCR to provide evidence of current or past COVID-19 infection

• Suggest against IgG/IgM combination tests to detect evidence of past infection
  – Reactive IgM alone would be considered positive

**Ab Test Performance**

- False positives possible, PPV ranging 50-100%*
  - With low seroprevalence, PPV decreases so a false positive may be more likely than a true positive

- False negatives may occur if testing is performed early in illness

*assumes 5% seroprevalence

Availability of Ab Tests

• Increasingly available
  – 39 assays have FDA EUA as of 8/25/20

• Variety of technologies, IgG vs. IgM vs. combo, and targets (spike protein, nucleocapsid, combo)

Take-Away

- PCR testing sensitivity is not perfect so keep clinical context/pre-test probability in mind

- Molecular testing by NP swab is current mainstay for diagnostic testing but alternative sites of collection (nasal swab, saliva) may be useful

- Antigen testing less sensitive than PCR but cheap, fast and may be critical to increasing testing and decreasing transmission in certain settings

- Antibody testing increasingly available; should not be used as sole test for dx or to exclude infection; consider in MSIS or possibly as adjunct to PCR testing
Thank You
# All Antibody Tests are Not Equal

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Time to results</th>
<th>What it tells us</th>
<th>What it cannot tell us</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid diagnostic test (RDT)</td>
<td>10-30 minutes</td>
<td>The presence or absence (qualitative) of antibodies against the virus present in patient serum.</td>
<td>The quantifiable amount of antibodies in the patient serum, or if these antibodies are able to protect against future infection</td>
</tr>
<tr>
<td>Enzyme linked immunosorbent assay (ELISA)</td>
<td>1-5 hours</td>
<td>The presence or absence (quantitative) of antibodies against the virus present in patient serum.</td>
<td>If the antibodies are able to protect against future infection.</td>
</tr>
<tr>
<td>Neutralization assay</td>
<td>3-5 days</td>
<td>The presence of active antibodies in patient serum that are able to inhibit virus growth ex vivo, in a cell culture system. Indicates if the patient is protected against future infection.</td>
<td>It may miss antibodies to viral proteins that are not involved in replication.</td>
</tr>
</tbody>
</table>

Lateral Flow Assay

Blood sample and buffer are added to the test well. Any antibodies contained in the sample will start to flow down the strip.

- **Sample pad**: Antigen tagged with gold for detection purposes. Pre-set on conjugate pad. Gold-tagged control antibody. Pre-set on conjugate pad.
- **Conjugate pad**: Pre-attached antibody to detect antibodies of interest in blood sample.
- **Absorption pad**: Control antibodies bind to the control line to show that all portions of the test worked correctly.

Antibodies from the blood sample that are specific to the antigen of interest are caught on the test line. Excess antibodies, tagged antigen, buffer, and blood platelets finally reach absorption pad.

Positive Result: Control, Test

Negative Result: Control, Test

Inconclusive Result: Control, Test

Inconclusive Result: Control, Test

ELISA

Neutralization Assay

Serial dilutions are made from patient serum and mixed with viral suspension. Concentration of the viral suspension remains constant.

Virus and antibody-containing serum is allowed to incubate before being plated on monolayer host cells.

Cell monolayer + viral suspension + serum is covered with agar and incubated for several days.

Dilution at which antibody concentration is able to reduce plaque formation by 50% is known as the PRNT_{50}. Indicates that antibodies exist in the patient that are able to neutralize further viral activity.

Questions
Multnomah County
Health Department

Case Investigation and
Contact Tracing

David Cuevas
Disease Intervention Specialist
Multnomah County

Case Investigation and Contact Tracing

Mitigation vs. Containment
Multnomah County

Adaptive Response

Cases over time

Disease control

Early detection (lab testing, alert clinical systems) and case isolation (home, hospital, other facilities)

Extensive testing

Contact tracing

Extensive testing

Contact tracing

Health care infection prevention and control

Appropriate clinical care including staff surge when needed

Non-Pharmaceutical interventions (NPIs)

Community engagement with clear communication, assessment of community acceptance leading to adjustment of approach

Everyday personal NPIs (wash hands, cover coughs, stay home if ill)

Environmental NPIs (clean surfaces, increase ventilation)

Personal NPIs (household quarantine, mask in community if ill)

Supporting society

Address ongoing health care needs including supply chain management and increased telemedicine

Support continued social and economic activity including learning, emergency services, essential activities

Protect vulnerable populations

Pharmaceutical interventions

Containment  Mitigation  Suppression  Prevention

Version 2.0, 20 March 2020
Multnomah County

Contact Investigation / Contact Tracing

- To identify persons with COVID-19, prevent transmission to others, improve health outcomes and better understand the epidemiology of this disease
- To identify those with significant exposure to COVID-19, and to monitor them for signs of infection
What’s the difference between quarantine and isolation?

If you might have been exposed to COVID-19, you should stay home. This is called quarantine.

cdc.gov/coronavirus
What’s the difference between quarantine and isolation?

Isolation separates people who are infected with the virus from others, even in their home.

cdc.gov/coronavirus
Multnomah County

2-14 day exposure period
Multnomah County

Name
Phone Number
Multnomah County
Multnomah County

Health Equity Considerations and Racial and Ethnic Minority Groups

Cases by race/ethnicity and population proportions
Percent of COVID-19 Cases Compared to Multnomah County Population Proportions

<table>
<thead>
<tr>
<th>Race</th>
<th>Percent of COVID-19 cases</th>
<th>Population Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaskan Native</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Asian</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Black</td>
<td>9%</td>
<td>0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11%</td>
<td>0%</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Other/Multi-racial</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>White</td>
<td>34%</td>
<td>70%</td>
</tr>
<tr>
<td>Unknown/Refused</td>
<td>9%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Multnomah County

Health Equity Considerations and Racial and Ethnic Minority Groups

- **Discrimination:** Unfortunately, discrimination exists in systems meant to protect well-being or health. Examples of such systems include health care, housing, education, criminal justice, and finance. Discrimination, which includes racism, can lead to chronic and toxic stress and shapes social and economic factors that put some people from racial and ethnic minority groups at increased risk for COVID-19.

- **Healthcare access and utilization:** People from some racial and ethnic minority groups are more likely to be uninsured than non-Hispanic whites.
Multnomah County

- **Housing:** Some people from racial and ethnic minority groups live in crowded conditions that make it more challenging to follow prevention strategies.

- **Educational, income, and wealth gaps:** Inequities in access to high-quality education

- **Occupation:** People from some racial and ethnic minority groups are disproportionately represented in essential work settings.
Multnomah County

Contact Investigation / Contact Tracing

Thank you
• Please complete the post-session survey in order to receive CME

• 1st and 3rd Thursdays, 12-1 p.m.: Oregon Health Authority COVID-19 Informational Session for All Providers: next OHA session is September 3

• 2nd and 4th Thursdays, June 11-December 10, 12-1:15 p.m.: Project ECHO COVID-19 Response for Oregon Clinicians - Part 2

• Next COVID ECHO session is Thursday September 10th and the topic is *Coronavirus Vaccine Development Update*- Mark Slifka PhD, Virologist, OHSU
“All Teach, All Learn”

• Clinicians learn from specialists
• Clinicians learn from each other
• Specialists learn from practicing clinicians
Welcome to the Oregon ECHO Network

Connect and Learn

ECHO is an interactive educational and community-building experience that allows healthcare professionals throughout the state of Oregon to create a case-based learning environment through the convenience of video connection.

Click for Oregon ECHO Network's current programs or scroll down to learn more.