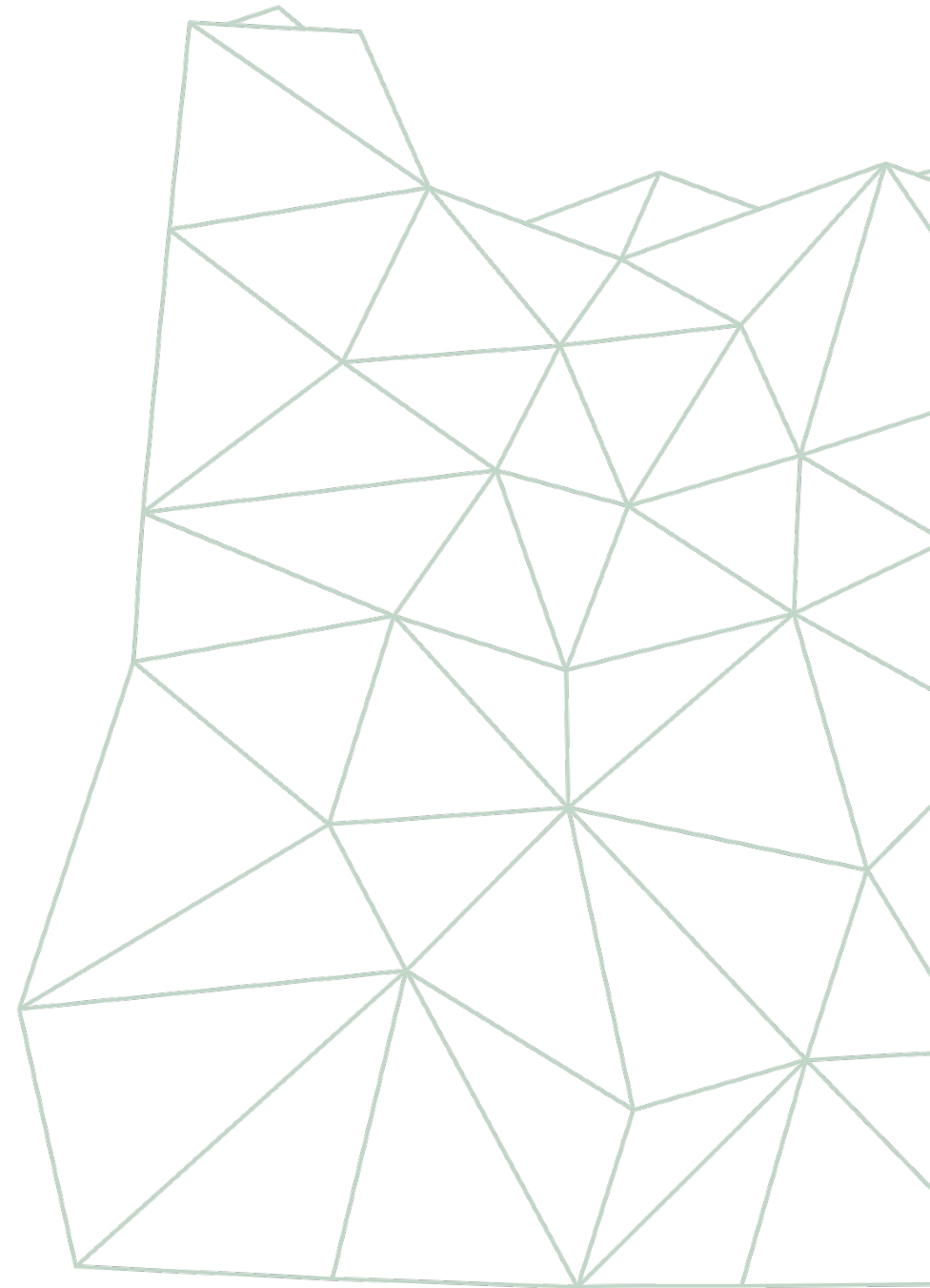




SPECIAL Part 2

**COVID-19 Response ECHO for
Oregon Clinicians**

Session 10 October 22, 2020



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 (must be completed 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 November 5.
- **Next COVID ECHO session is Thursday, November 12 and the topic is “COVID-19 Prevention/Infection Control in Ambulatory Care” presented by Craig McDougall MD, OHSU General Internal Medicine.**

Nursing Facility ECHO: A COVID-19 Response

- Partnership with ECHO Institute & Agency for Healthcare Research and Quality (AHRQ)
- Weekly 90-minute ECHO sessions for 16 weeks
- Target learners are clinicians and staff at skilled nursing facilities



Registration is Open!

<https://connect.oregonechonetwork.org/Series/Registration/1313>

Key Resources

Cheng A, Coruso D, and McDougall C. Outpatient Management of COVID-19: Rapid Evidence Review. *Am Family Physician*, 2020;102(8):478-486.

<https://www.aafp.org/afp/2020/1015/p478.html>

American Society of Hematology Guidelines on Use of Anticoagulation in Patients with COVID-19, <https://www.hematology.org/education/clinicians/guidelines-and-quality-care/clinical-practice-guidelines/venous-thromboembolism-guidelines/ash-guidelines-on-use-of-anticoagulation-in-patients-with-covid-19>

Resources for Healthcare Professionals' Mental Health & Well-Being

(Ideas shared with us by your fellow ECHO participants through the post-session evaluation)

- Oregon Wellness Program (OWP promotes the well-being of Oregon's Healthcare Professionals): <https://oregonwellnessprogram.org/>
- Mindful Medicine: <http://mindfulmedicinepdx.org/>
- Your affiliated organization's employee assistance program (EAP)
- Physician well-being index: <https://www.mededwebs.com/well-being-index?hsCtaTracking=c04ec002-e27f-4443-90b3-4f2f6caefb93%7C3076efc4-34e5-4106-833d-2896dd55bf5a>
- Free SAMHSA behavioral health disaster response mobile app: <https://www.samhsa.gov/node/669827>
- Tend Health - Mental Healthcare for Healthcare Professionals: <https://tend.health/>

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'

Today's Agenda

- **COVID-19 Update:**
 - Oregon Health Authority
 - Metro Public Health
- **Expert presentation:** “COVID-19 Hot Topics and Potential for Re-infection” Mark Slifka, PhD, Professor, OHSU Division of Neuroscience
- **Q & A**

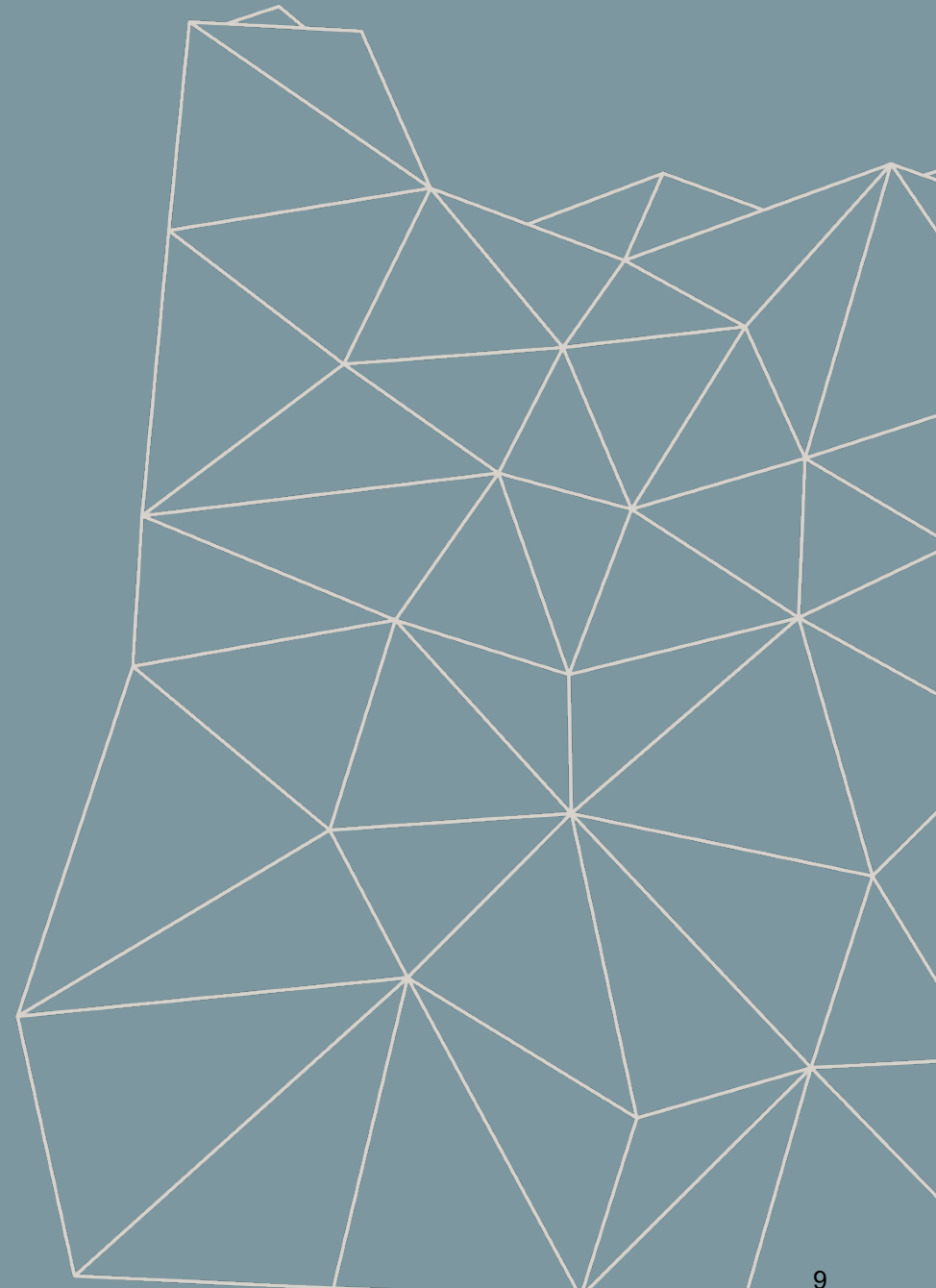


Oregon Health Authority

COVID-19 Update, October 22, 2020

Dana Hargunani, MD, MPH

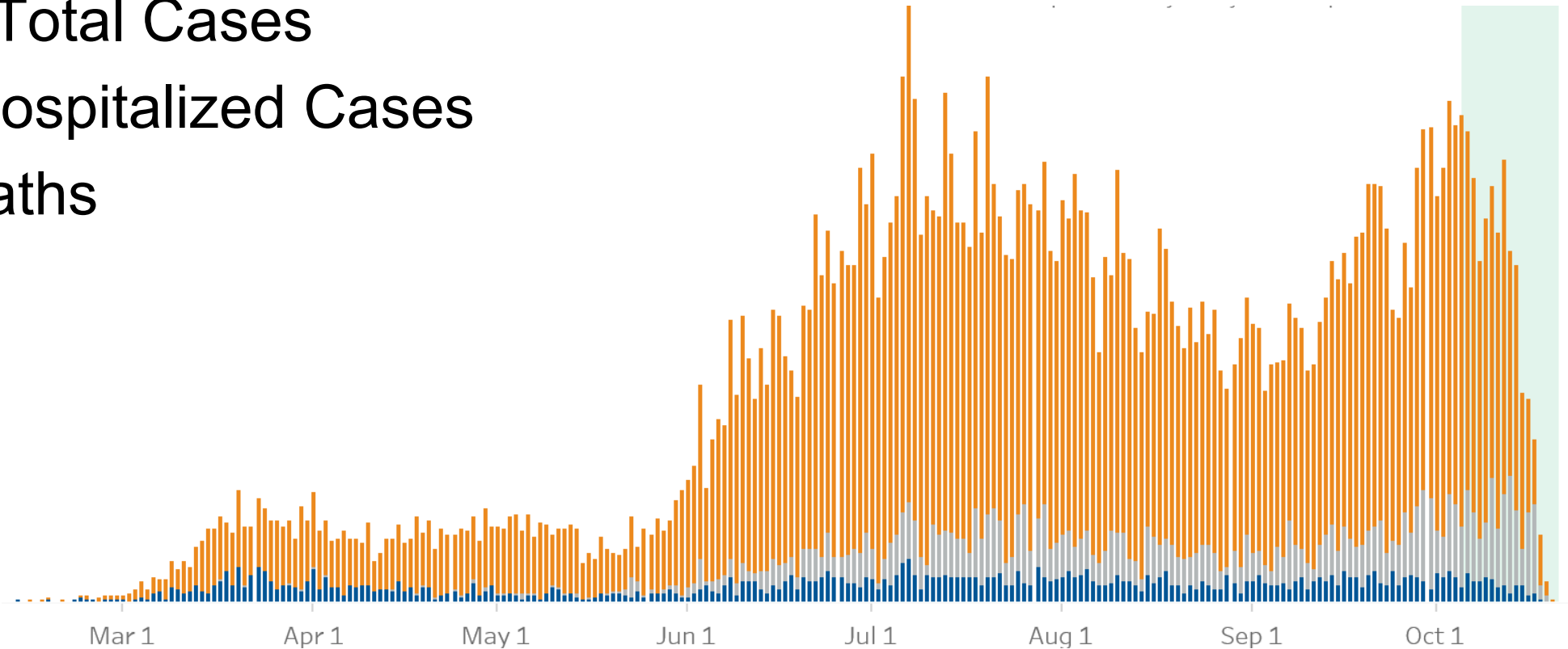
Tom Jeanne, MD, MPH



Ongoing COVID-19 Pandemic

*As of **October 21**:*

- 40,443 Total Cases
- 2,989 Hospitalized Cases
- 635 Deaths



Weekly COVID-19 Report

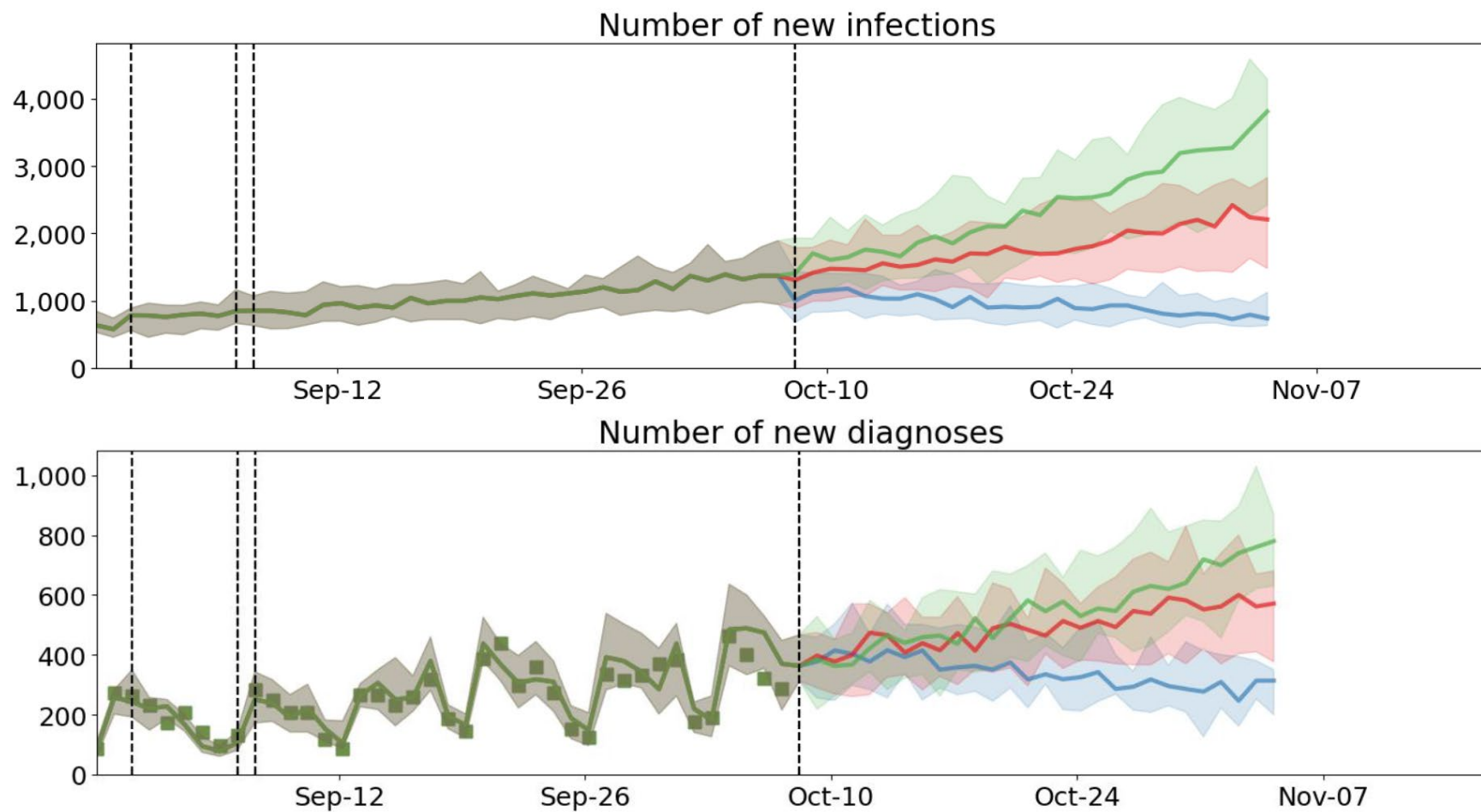
For the week of **10/12-10/18**:

- OHA recorded 2,327 new cases, down 4% from week prior
- Number of Oregonians newly tested rose another 1.6% (to 28,960)
- Percentage of positive tests rose slightly to 6.5%

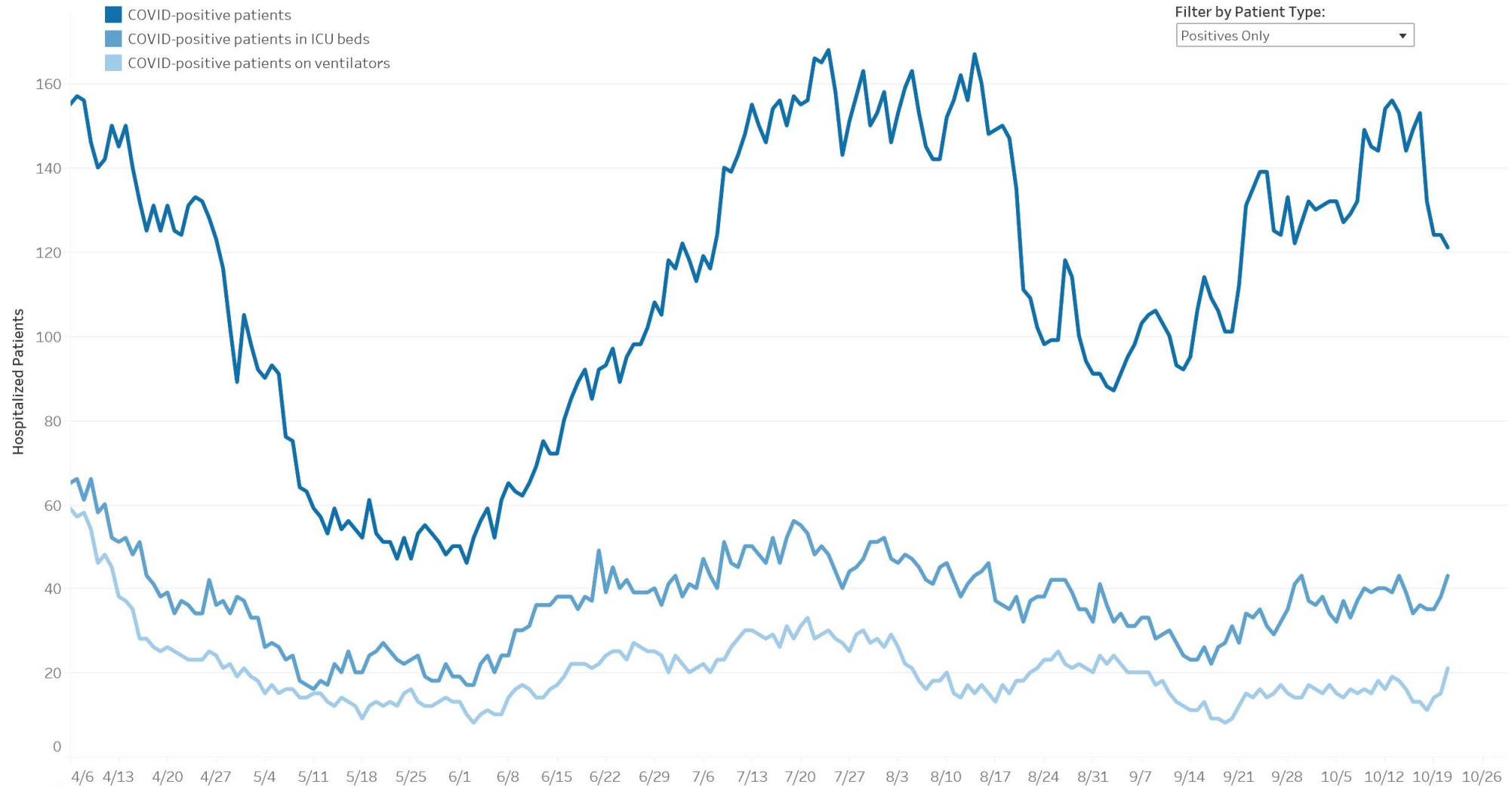
| Race | Cases | % of total cases | Cases per 100,000 ^b |
|-------------------------------|--------|------------------|--------------------------------|
| White | 17,191 | 43.2% | 480.7 |
| Black | 1,322 | 3.3% | 1637.5 |
| Asian | 1,114 | 2.8% | 615.1 |
| American Indian/Alaska Native | 969 | 2.4% | 1988.2 |
| Pacific Islander | 641 | 1.6% | 3858.7 |
| Other | 12,986 | 32.6% | n/a |
| >1 race | 789 | 2.0% | 392.6 |
| Not available | 4,782 | 12.0% | n/a |
| Total | 39,794 | 100.0% | 939.3 |

| Ethnicity | Case count | % of total cases | Cases per 100,000 ^a |
|---------------|------------|------------------|--------------------------------|
| Hispanic | 14,830 | 37.3% | 2727.2 |
| Non-Hispanic | 20,175 | 50.7% | 546.4 |
| Not available | 4,789 | 12.0% | n/a |
| Total | 39,794 | 100.0% | 939.3 |

Oregon COVID-19 Modeling Report 10/14/2020: Scenario Projections



COVID-19 Hospitalized Patients- Census Trends by Acuity



Oregon Influenza Activity October 4 - October 10*

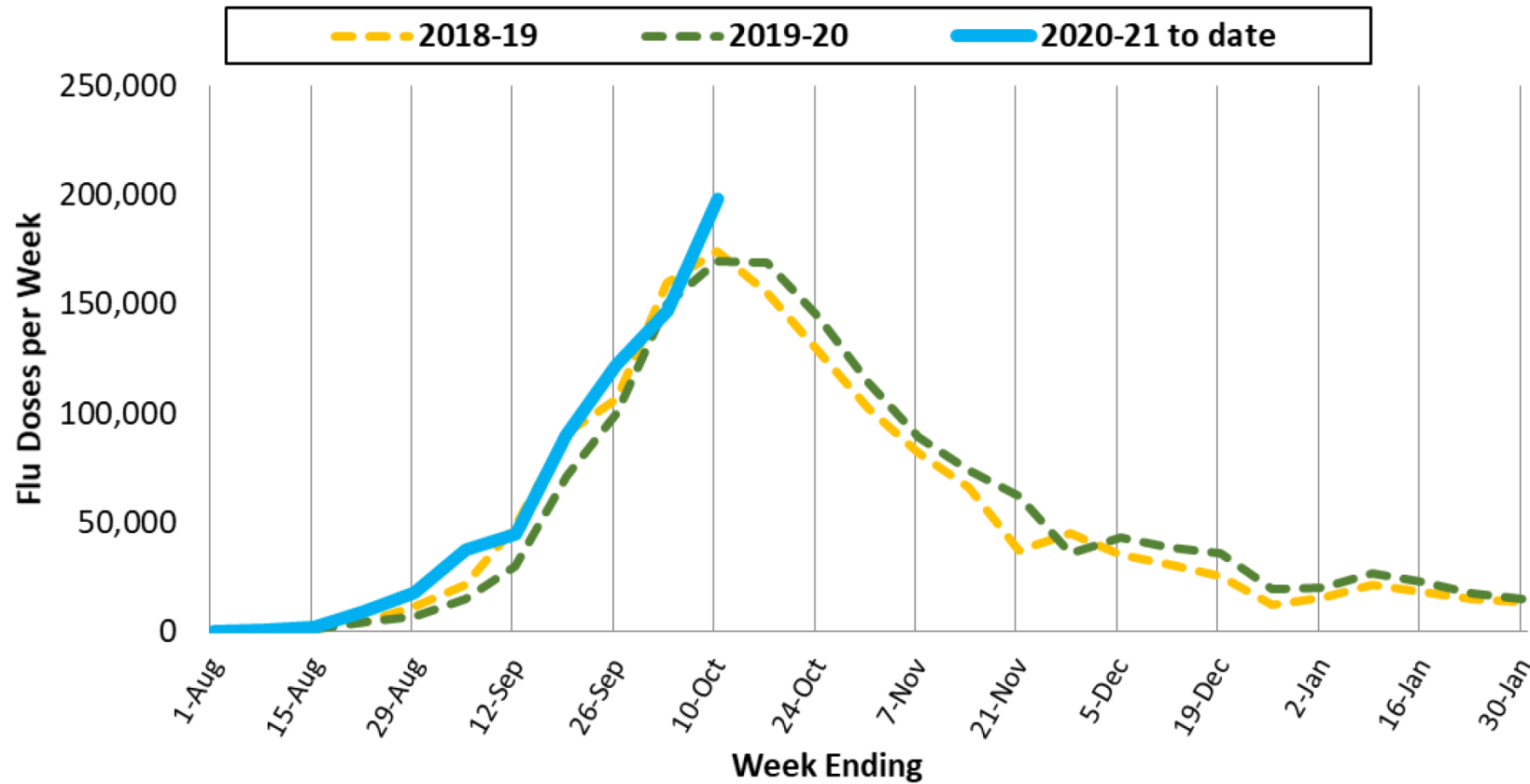
| Region | Total Tests | Positive | | Flu A | | Flu B | |
|--------------------|-------------|----------|-------------|----------|--------------|----------|--------------|
| | | No. | (%) | No. | (%) | No. | (%) |
| Portland Metro | 210 | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Southern Oregon | 141 | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Columbia Gorge | 29 | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Central Oregon | 57 | 1 | 1.8% | 0 | 0.0% | 1 | 0.0% |
| Willamette Valley | 55 | 2 | 3.6% | 1 | 0.0% | 1 | 0.0% |
| State Total | 492 | 3 | 0.6% | 1 | 33.3% | 2 | 66.7% |

**Flu Bites*: Oregon's Weekly Surveillance Report, Influenza & Respiratory Viruses

Subscribe at: https://public.govdelivery.com/accounts/ORDHS/subscriber/new?topic_id=ORDHS_375

Oregon Influenza Immunizations by Week 2020-2021 Season

Figure 7. 2020-21 Season Oregon Influenza Immunizations in ALERT IIS by Week



Flu Season Social Media Cards:

<https://www.oregon.gov/oha/ERD/Pages/media-resources.aspx>

La vacunación es la mejor protección

La vacuna contra la gripe es especialmente importante para las personas con enfermedades crónicas, los adultos mayores, las mujeres embarazadas, los trabajadores de la salud y los niños.



Para más información visite healthoregon.org/coronavirus o llame al 211



Ha sugin tallaalka

Tallaalka samboorka wuxuu qaadan karaa illaa labo isbuuc si ay wax uga tarto, marka helida xili hore ee xiliyeedka way ugu wanaagsantahay.



For more information visit healthoregon.org/coronavirus or call 211



Don't wait to vaccinate

Everyone 6 months and older should get a flu shot - especially during the COVID-19 pandemic.



For more information visit healthoregon.org/coronavirus or call 211



UPDATED Statewide Mask, Face Covering, Face Shield Guidance (10/19/20)

Applicability: This guidance applies statewide to:

- All businesses (as defined)
- All persons responsible for indoor spaces open to the public
- All persons responsible for outdoor spaces open to the public
- All public and private workplaces
- The general public when:
 - Visiting businesses as defined
 - Visiting indoor spaces open to the public
 - Visiting outdoor spaces open to the public
 - Visiting all public and private workplaces

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le2288K.pdf>

UPDATED Statewide Mask, Face Covering, Face Shield Guidance (10/19/20)

Oregon Health Authority Public Health Recommendations on Masks, Face Coverings and Face Shields:

- In general, it is recommended that people wear a mask or face covering, with or without a face shield, whenever they are within six (6) feet of people who do not live in the same household.
- ***It is not*** recommended that individuals wear a face shield instead of a mask or face covering. Face shields can be very good at blocking droplets that individuals release, but they are not as effective at limiting the release of aerosols that can go around the shield.
 - Use of a face shield alone should only be done on very limited basis. Wearing a face shield alone without a mask or face covering increases the potential for transmission of viruses to those in the same room as the individual without the mask or face covering.
 - It is recommended that wearing a face shield alone be limited to situations when wearing a mask or face covering is not feasible.

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le2288K.pdf>

UPDATED Statewide Mask, Face Covering, Face Shield Guidance (10/19/20)

- Businesses and persons responsible for an indoor or outdoor space open to the public and persons responsible for public and private workplaces are required to:
 - Require employees, contractors, volunteers, students, customers and visitors to wear a mask, face covering or face shield. Some exceptions include
 - Not required while eating or drinking
 - Not required when engaged in an activity that makes wearing a mask, face covering, or face shield not feasible, such as when swimming
 - Provide masks, face coverings or face shields for employees
 - Provide for accommodations for employees, contractors, students, customers and visitors if such accommodations are required by:
 - State and federal disabilities laws, state or federal labor laws, state and federal public accommodations law, OHA public health guidance if applicable.
 - Post clear signs about the mask, face covering or face shield requirements

<https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le2288K.pdf>

New BinaxNOW Guidance

Provisional Guidance for BinaxNOW Point-of-care Antigen Testing (October 12)

- Recommends use of BinaxNOW in outpatient, urgent care or emergency department settings, in patients with symptoms consistent with COVID-19, close contacts of COVID-19 cases, or in outbreak investigations
- OHA does not recommend using the NAVICA app associated with the BinaxNOW
- OHA considers any person with a **positive molecular or POC antigen test** for COVID-19 a confirmed case of COVID-19, regardless of symptoms (no f/u testing needed)
- Both molecular and POC antigen tests may produce false negative results
- Consider retesting with a molecular test and testing for additional respiratory viruses in persons with a **negative POC antigen test and symptoms** consistent with COVID-19.

Guidance: <https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le3249a.pdf>

BinaxNOW Update

BinaxNOW tests Oregon has **received** from federal government

- Week One: 82,600
- Week Two: 62,690
- Week Three: 76,620
- Week Four: 54,080

Test distribution throughout Oregon; 87,940 tests so far to:

- 26 counties in every part of the state
- The Coquille Indian Tribe, Burns Paiute Tribe, Klamath Tribes, Cow Creek Tribe, Siletz Tribe, Yellowhawk Tribe, Confederated Tribes of Grand Ronde and Confederated Tribes of Warm Springs
- Winding Waters and NARA Clinics
- An additional 250 tests were sent to LTCFs that were evacuated due to wildfire and to respond to an outbreak at a shelter in Jackson County

BinaxNOW Update

- In addition to counties and tribes, OHA has sent tests to rural hospitals, FQHCs, university health centers and the Oregon State Hospital this week
- Reaching out to K-12 school-based health centers and higher education student health centers; plan to send tests directly to their clinics to assist with testing symptomatic students and staff
- Distribution plan also includes 33 FQHCs, one third in underserved urban areas, and 32 rural/critical access hospitals
- Anticipate adding correctional facilities soon



COVID-19 Vaccine Planning

- The CDC has asked all states to share how they plan to distribute COVID-19 once a safe and effective vaccine is ready. OHA has submitted a draft plan to CDC, but it is not final.
 - It is expected to evolve in the months ahead as more is learned about likely vaccines, including safety, effectiveness, side effects, storage, supply, distribution and administration.
- The plan is centered around equity, reflecting the state's values of recognizing historical and contemporary injustices toward communities of color and the disproportionate effects that COVID-19 has had on them.
 - OHA's plan is intended to understand Oregon's existing systems and structures for vaccine delivery. The next steps are to understand how those systems and structures need to be rebuilt to meet the needs of disproportionately impacted communities.
- OHA's plan will follow federal guidance for a phased approach. This means starting with vaccinations for critical groups, including people involved in the pandemic response and people at the highest risk for getting very sick. As more vaccine becomes available, there will be wider distribution to other high-risk groups and the general public.

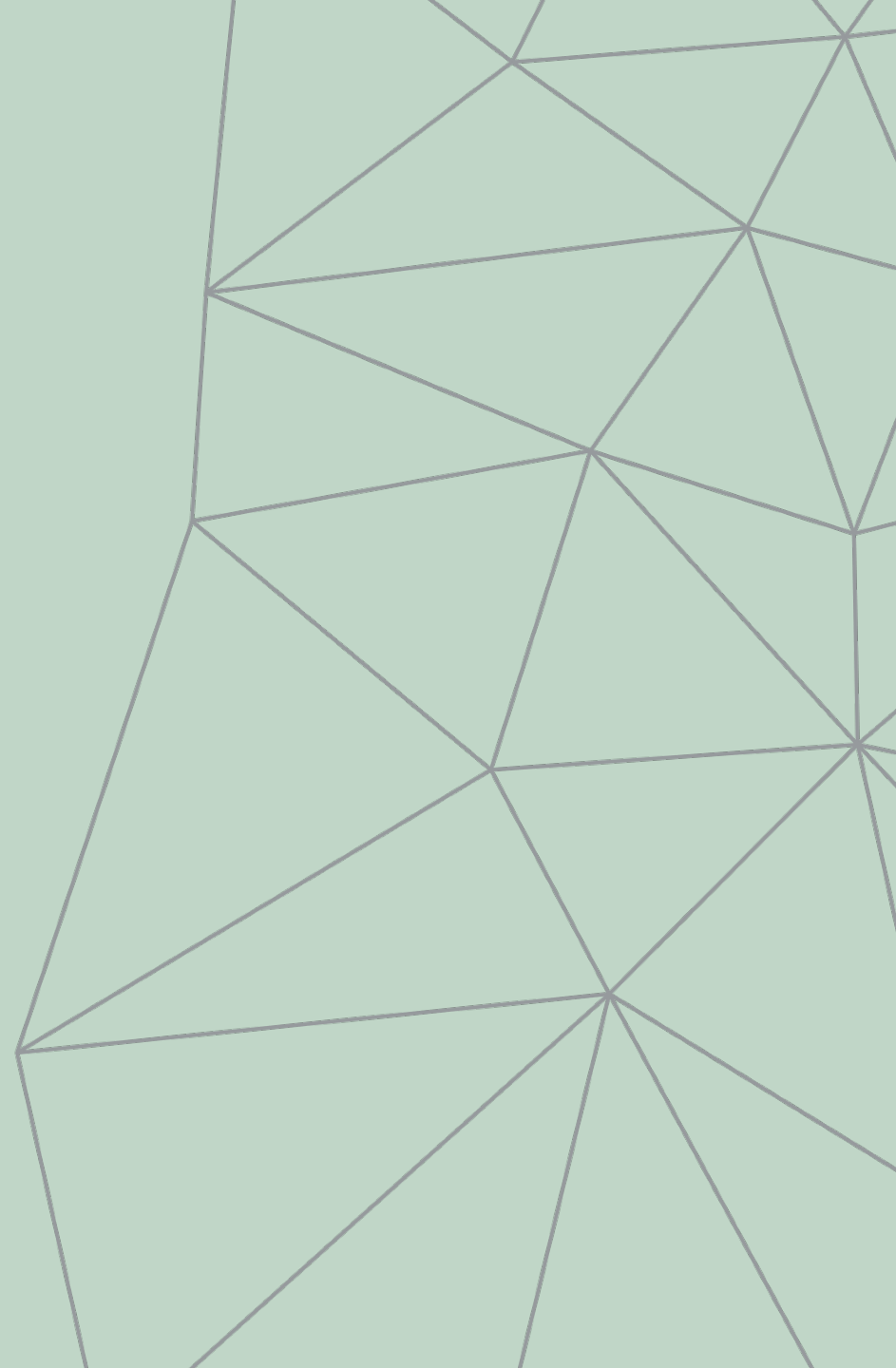
<https://www.oregon.gov/oha/covid19/Documents/COVID-19-Vaccination-Plan-Oregon.pdf>



- **Note:** the Advisory Committee on Immunization Practices (ACIP) meets publicly on October 28-30; topics will include COVID-19 vaccines. ACIP meeting information is available at: <https://www.cdc.gov/vaccines/acip/meetings/index.html>



Questions



Portland Metro Updates

After-testing Guide

<https://multco.us/after-testing-guide>

<https://multco.us/novel-coronavirus-covid-19/if-you-test-positive-covid-19>




COVID-19 AFTER YOU GET TESTED



- 04/ INTRODUCTION
- 05/ ISOLATION
- 06/ QUARANTINE
- 07/ WHEN TO START AND END QUARANTINE
- 09/ WHAT I CAN AND CAN'T DO
- 11/ ISOLATION AND QUARANTINE HELP
- 12/ TELLING CLOSE CONTACTS
- 14/ TELLING YOUR EMPLOYER
- 16/ WHERE TO GET TESTED?
- 17/ 10 WAYS TO MANAGE RESPIRATORY SYMPTOMS AT HOME
- 18/ STOP THE SPREAD OF GERMS
- 19/ HOW TO USE A CLOTH FACE COVERING
- 20/ HOW TO USE HAND SANITIZER
- QUESTIONS?

Portland Metro Updates: Testing


- Multnomah County opened a [new testing site](#) at Latino Network in Rockwood
 - Saturdays, 9am-3:45pm. 503-988-8939
 - No-cost testing is available by appointment for anyone with [symptoms](#) or [close contact](#).
 - A third site is opening at Mid-county Health Center in November
- Organizations representing BIPOC (Black, Indigenous, and People of Color) communities who are interested in partnering with OHSU on a COVID testing event can contact Michael Harrison at harmicha@ohsu.edu.
- Clackamas flu clinics with Covid testing by Medical Teams International: <https://www.clackamas.us/publichealth/immunizations.html>
- Washington County testing sites and flu vaccines sites: www.co.washington.or.us/HHS/CommunicableDiseases/COVID-19/testing-sites.cfm



Free Flu Vaccinations

Flu shots are more important than ever before.
Here's why:

- To protect yourself and those around you
- To prevent flu in communities most at-risk for influenza and COVID-19
- To protect our healthcare system, reserving resources for those who become ill with COVID-19



For more information
www.clackamas.us/publichealth
Proud partners with Vaccinate Clackamas

Schedule of drive through events

| Dates | Time | Locations |
|-------------------|------------------------|--|
| Oct. 21 | 3:30 p.m. to 6:30 p.m. | Clackamas HS 14486 SE 122nd Ave. Clackamas, OR 97015 <small>* Free COVID-19 testing available</small> |
| Oct. 22 | 3:30 p.m. to 6:30 p.m. | Molalla HS 357 E. Francis Street Molalla, OR 97038 <small>* Free COVID-19 testing available</small> |
| Oct. 28 | 2:30 p.m. to 5:30 p.m. | Clackamas Town Center 12000 SE 82nd Ave. Happy Valley, OR 97086 |
| Nov. 4 Nov. 18 | 3:30 p.m. to 6:30 p.m. | Canby Fairgrounds 694 NE 4th Ave. Canby, OR 97013 <small>* Free COVID-19 testing available</small> |
| Dec. 2 Dec. 9 | 3 p.m. to 6 p.m. | Boring Fire Station 28655 SE Hwy 212, Boring, OR 97009 <small>* Free COVID-19 testing available</small> |

Supplies are limited and please leave pets at home.
Masks are required at all events.
Please stay home if you are sick.



BinaxNow rapid antigen tests

Have been distributed to...(and more to come)

- 1000 to every rural hospital, 7 tribes, many county public health departments
- 280 LTCFs (31 Multnomah, 22 Clackamas, 14 Washington)

The benefit of plentiful rapid tests,
and the argument for frequency over
sensitivity or specificity

Larremore DB, Wilder B, Lester E, et al. Test sensitivity is secondary to frequency and turnaround time for COVID-19 surveillance.

Preprint. *medRxiv*. 2020;2020.06.22.20136309. Published 2020 Jun 27.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7325181/>

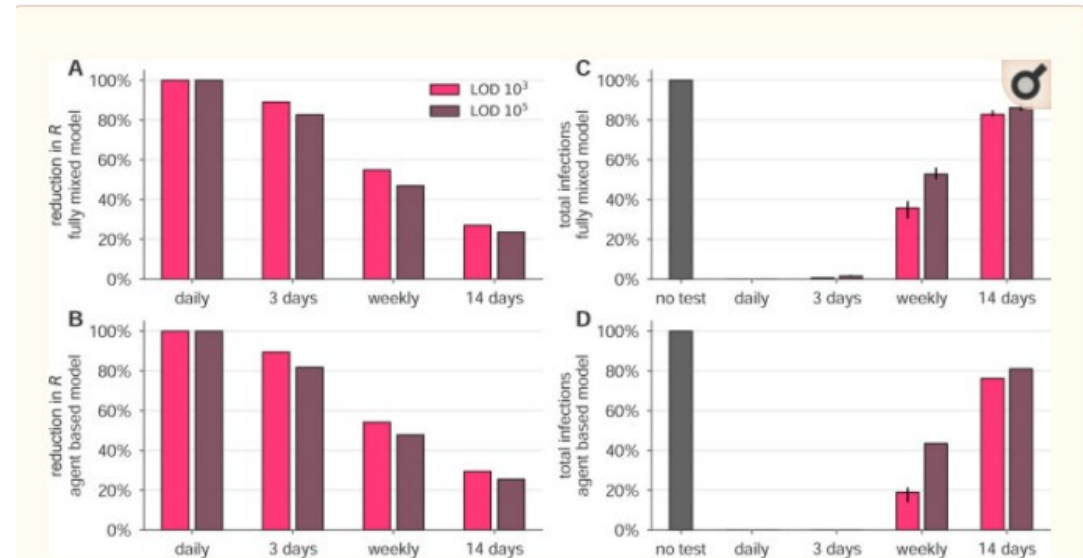


Figure 2:

Surveillance testing affects disease dynamics.

Both the fully-mixed compartmental model (top row) and agent based model (bottom row) are affected by surveillance programs. (A, B) More frequent testing reduces the effective reproductive number R , shown as the percentage by which R_0 is reduced, $100 \times (R_0 - R)/R_0$. Values of R were estimated from 50 independent simulations of dynamics (see [Methods](#)). (C, D) Relative to no testing (grey bars), surveillance suppresses the total number of infections in both models when testing every day or every three days, but only partially mitigates total cases for weekly or bi-weekly testing. Error bars indicate inner 95% quantiles of 50 independent simulations each.

BinaxNow rapid antigen tests

- They need to be done in a lab that has at least a CLIA waiver or under the direction of a CLIA waived lab director.
- These tests were validated on symptomatic adults
- The site that does these tests need to be able to collect a PCR.
 - Requires appropriate PPE and hazard mitigation to ensure testers are safe
- This test does need to be done by or with oversight of a medical professional.
 - Requires either healthcare providers, or lab approved trained people to administer test
- Agree to meet all of the [required reporting requirements](#).

[OHA BinaxNOW guidance](#)

BinaxNow rapid antigen tests: County Distribution

- Places who will see and evaluate a higher volume of symptomatic people; or
- High yield locations where early identification of COVID positive people will allow the Public Health actions such as quarantine, isolation, and contact tracing to stop the spread to larger groups of people when identified.
 - ✓ FQHCs
 - ✓ SBHCs
 - ✓ Other medical clinics servicing vulnerable populations
 - ✓ Student health clinics of higher education
 - ✓ Urgent care and primary care offices in areas with low testing capacity or slow turnaround time
 - ✓ Jail Medical
 - ✓ Consider congregate care settings under medical care by a sponsor

Hot topics in COVID-19 & potential for *reinfection*

Mark K. Slifka, PhD

Professor

Division of Neuroscience

Oregon National Primate Research Center

Oregon Health & Science University

Beaverton, OR 97006

Email slifkam@ohsu.edu

Twitter [@MarkSlifka](https://twitter.com/MarkSlifka)

Overview

- Can people be reinfected with SARS-CoV-2?
 - The apparent loss of immunity among asymptomatic COVID-19 cases and re-evaluation of the evidence
 - The case of the healthy international traveler with sequencing data confirming reinfection w/ new virus
 - The case of a lethal re-infection and its implications for the broader population
 - An encouraging story based on a COVID-19 outbreak on a Seattle fishing boat

Can people be reinfected with SARS-CoV-2?



Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections

Quan-Xin Long^{1,8}, Xiao-Jun Tang^{2,8}, Qiu-Lin Shi^{2,8}, Qin Li^{3,8}, Hai-Jun Deng^{1,8}, Jun Yuan¹, Jie-Li Hu¹, Wei Xu², Yong Zhang^{1,2}, Fa-Jin Lv⁴, Kun Su³, Fan Zhang⁵, Jiang Gong⁵, Bo Wu⁶, Xia-Mao Liu⁷, Jin-Jing Li⁷, Jing-Fu Qiu^{1,2}✉, Juan Chen¹✉ and Ai-Long Huang¹✉

The clinical features and immune responses of asymptomatic individuals infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have not been well described. We studied 37 asymptomatic individuals in the Wanzhou District who were diagnosed with RT-PCR-confirmed SARS-CoV-2 infections but without any relevant clinical symptoms in the preceding 14 d and during hospitalization. Asymptomatic individuals were admitted to the government-designated Wanzhou People's Hospital for centralized isolation in accordance with policy¹. The median duration of viral shedding in the asymptomatic group was 19 d (interquartile range (IQR), 15–26 d). The asymptomatic group had a significantly longer duration of viral shedding than the symptomatic group (log-rank $P=0.028$). The virus-specific IgG levels in the asymptomatic group (median S/CO, 3.4; IQR, 1.6–10.7) were significantly lower ($P=0.005$) relative to the symptomatic group (median S/CO, 20.5; IQR, 5.8–39.2) in the acute phase. Of asymptomatic individuals, 97.3% (28/30) and 81.1% (30/37) had reduction in IgG and neutralizing antibody levels, respectively, during the early convalescent phase, as compared to 96.8% (30/31) and 62.2% (23/37) of symptomatic patients. Forty percent of asymptomatic individuals became seronegative and 12.9% of the symptomatic group became negative for IgG in the early convalescent phase. In addition, asymptomatic individuals exhibited lower levels of 18 pro- and anti-inflammatory cytokines. These data suggest that asymptomatic individuals had a weaker immune response to SARS-CoV-2 infection. The reduction in IgG and neutralizing antibody levels in the early convalescent phase might have implications for immunity strategy and serological surveys.

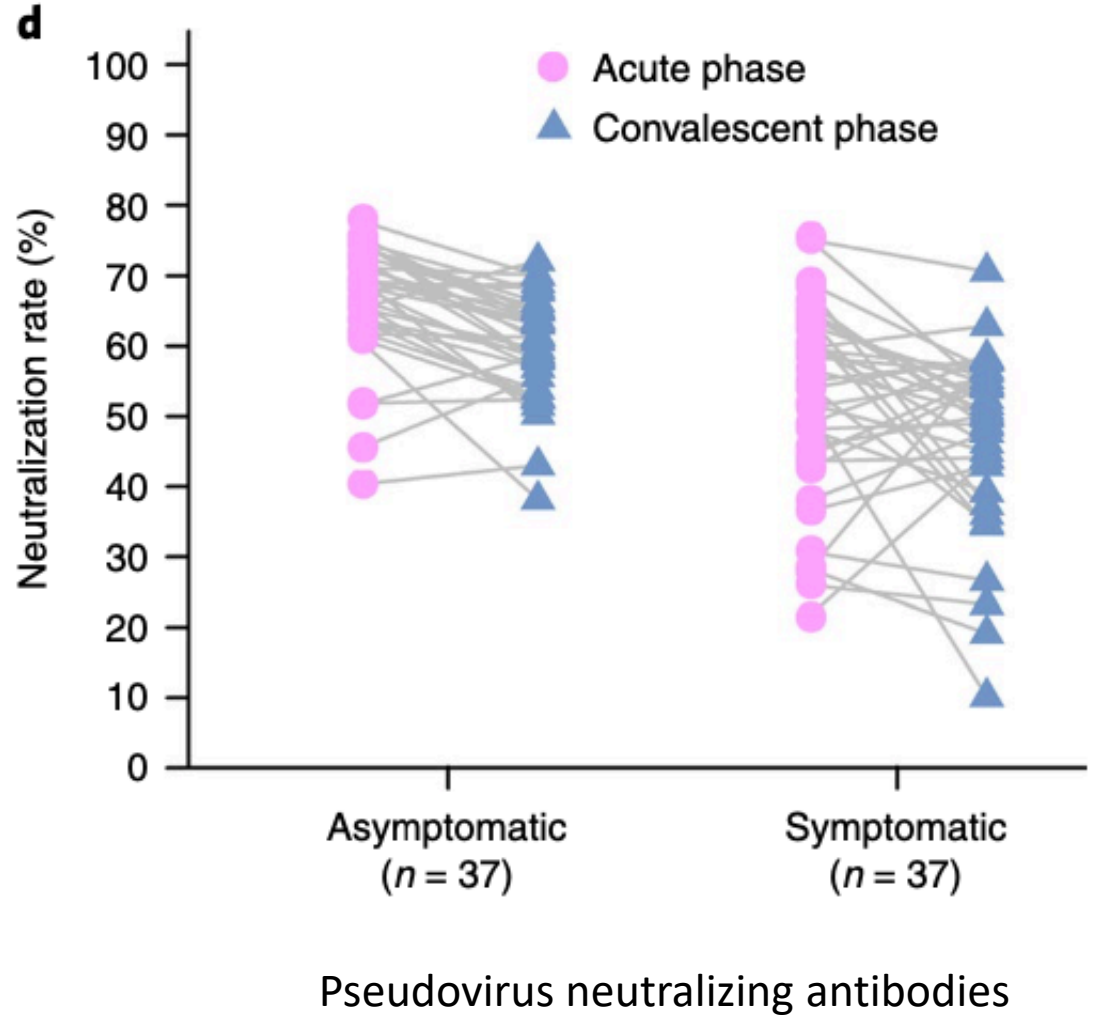
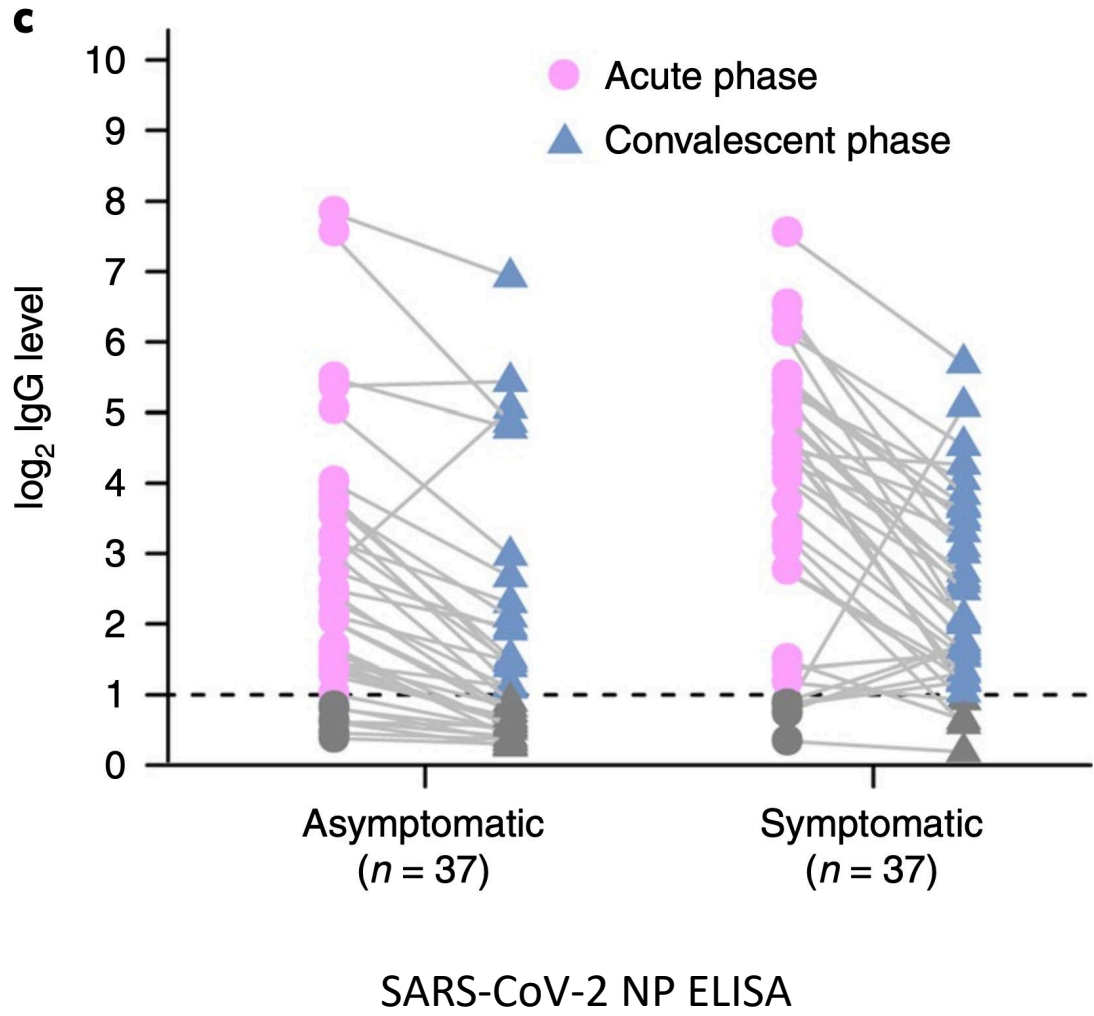
understanding of the clinical features and immune responses of asymptomatic individuals with SARS-CoV-2 infection is limited. Here we describe the epidemiological and clinical characteristics, virus levels and immune responses in 37 asymptomatic individuals.

Results

Demographic characteristics. On February 6, 2020, the National Health Commission of China updated the COVID-19 Prevention and Control Plan (4th edition) for the management of close contacts, emphasizing identification and quarantine of asymptomatic individuals¹. To identify asymptomatic individuals, the Wanzhou District Centers for Disease Control and Prevention (CDC) then conducted extensive RT-PCR screening for 2,088 close contacts under quarantine. Individuals with positive RT-PCR results then were screened by point prevalence surveys carried out by the local CDC and symptoms assessments reported by clinicians. Of these, 60 individuals claimed no symptoms in the preceding 14 d, according to local CDC records, and were transferred to a government-designated hospital for centralized isolation. On admission, 17 individuals were excluded for mild or atypical symptoms based on symptoms assessments reported by clinicians; six individuals who developed symptoms 4–17 d after admission were also excluded. Finally, 37 asymptomatic cases, defined as individuals with a positive nucleic acid test result but without any relevant clinical symptoms in the preceding 14 d and during hospitalization, were included in this study. A total of 178 patients with confirmed SARS-CoV-2 infections were identified in the Wanzhou District before April 10, 2020, as tracked by CDC surveillance systems. In this study, the proportion of patients with asymptomatic infections was 20.8% (37/178).

patients. Forty percent of asymptomatic individuals became seronegative and 12.9% of the symptomatic group became negative for IgG in the early convalescent phase. In addition, asymptomatic individuals exhibited lower levels of 18 pro- and anti-inflammatory cytokines. These data suggest that asymptomatic individuals had a weaker immune response to SARS-CoV-2 infection. The reduction in IgG and neutralizing antibody levels in the early convalescent phase might have implications for immunity strategy and serological surveys.

Loss of immunity in 40% of asymptomatic COVID-19 cases appears to be an artifact of the ELISA (NP) and is refuted by data showing maintained neutralizing antibodies



**COVID-19 re-infection by a phylogenetically distinct SARS-coronavirus-2 strain
confirmed by whole genome sequencing**

Authors: Kelvin Kai-Wang To^{1,2*}, Ivan Fan-Ngai Hung^{3*}, Jonathan Daniel Ip¹, Allen Wing-Ho Chu¹, Wan-Mui Chan¹, Anthony Raymond Tam³, Carol Ho-Yan Fong¹, Shuofeng Yuan¹, Hoi-Wah Tsoi¹, Anthony Chin-Ki Ng¹, Larry Lap-Yip Lee⁴, Polk Wan⁵, Eugene Tso⁶, Wing-Kin To⁷, Dominic Tsang⁸, Kwok-Hung Chan¹, Jian-Dong Huang⁹, Kin-Hang Kok¹, Vincent Chi-Chung Cheng^{1,2}, Kwok-Yung Yuen^{1,2#}

Key points:

Primary infection: 33 yr Male, with cough, sputum, sore throat, fever and headache for 3 days (sequenced the virus)

Secondary infection: 142 days after 1st infection tested at airport re-entry, normal chest x-rays, ***asymptomatic***
Despite infection with a different SARS-CoV-2 virus with 4 amino acid mutations in the Spike protein

- Shows reinfection may occur, but does not indicate with what frequency (anticipated to be uncommon)
- Shows that infection can protect against overt disease during reinfection with markedly different virus strain

Dutch woman dies after catching Covid-19 twice, the first reported reinfection death

By Amy Cassidy, CNN

🕒 Updated 4:29 PM ET, Tue October 13, 2020

Dutch woman becomes first known person to die from COVID-19 reinfection



Jeva Lange, The Week • October 18, 2020

Actual title of paper published in CID:

Reinfection of SARS-CoV-2 in an immunocompromised patient: a case report

Marlies Mulder, Dewi S.J.M van der Vegt, Bas B. Oude Munnink, Corine H. GeurtsvanKessel,

Jeroen van de Bovenkamp, Reina S. Sikkema, Esther M.G. Jacobs, Marion P.G. Koopmans,

Marjolijn C.A. Wegdam-Blans

Here, we report a case of a reinfection, in an 89-year old Dutch woman, suffering from Waldenström's macroglobulinemia, treated with B-cell-depleting therapy. She presented to the emergency department with fever and severe cough and a lymphocyte count of $0.4 \times 10^9/L$. An in-house SARS-CoV-2 RT-qPCR (E-gen), [2] on a nasopharyngeal swab was positive (Cq 26.2). She was discharged after 5 days and besides some persisting fatigue her symptoms subsided completely.

Two days after a new chemotherapy treatment, fifty-nine days after the start of the first COVID-19 episode, the patient developed fever, cough, and dyspnea. At admission, her oxygen saturation was 90% with a respiratory rate of 40/min. The SARS-CoV-2 RT-qPCR on a nasopharyngeal swab was positive (E-gen; Cq 25.2). At days 4 and 6, serum was tested for SARS-CoV-2 antibodies, using the WANTAI SARS-CoV-2 Ab and IgM ELISA, both were negative. At day 8, the condition of the patient deteriorated. She died two weeks later.



Fishing boat has COVID-19 outbreak with 85% attack rate (103/117), but 3/3 people with pre-existing neutralizing antibodies were protected from re-infection

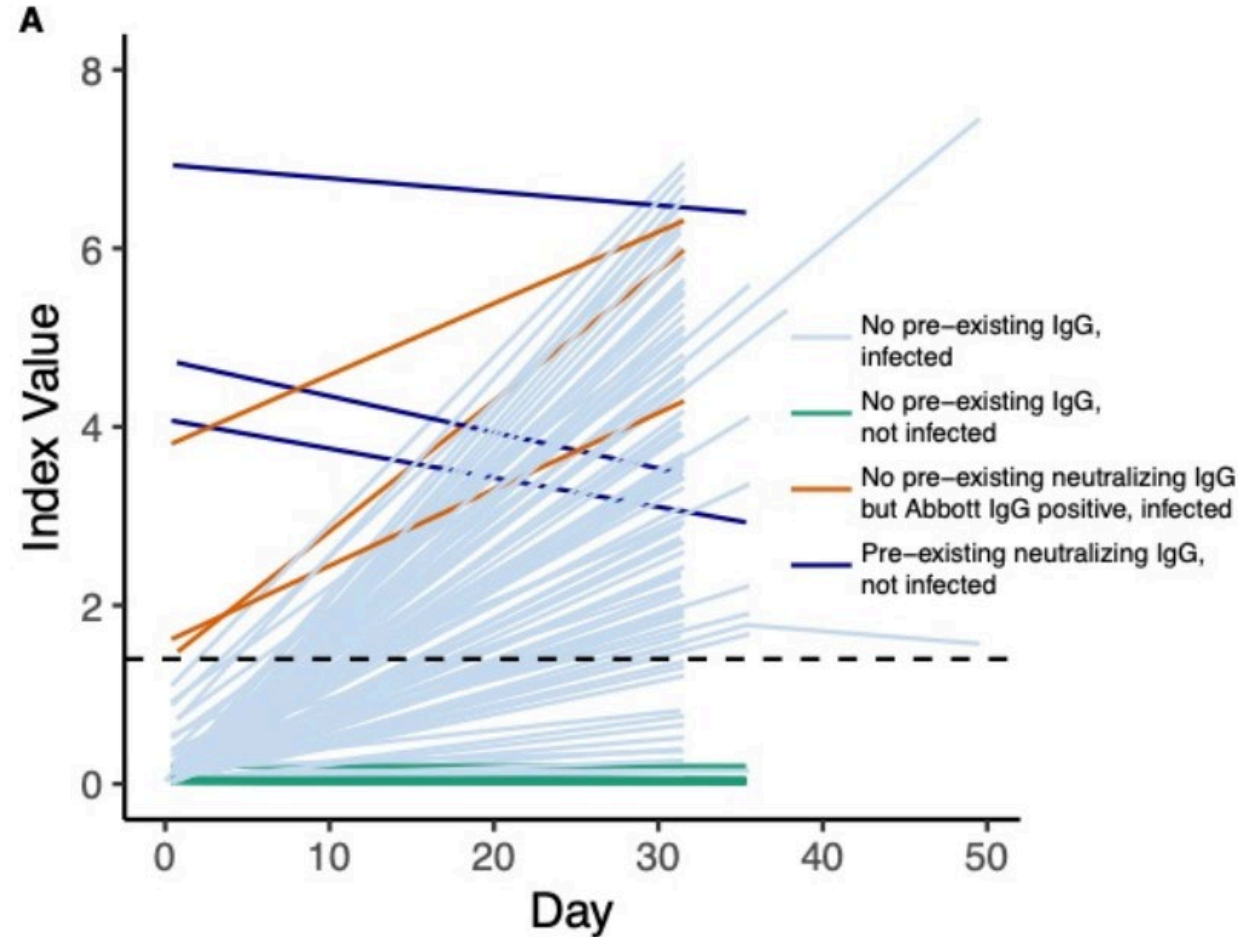
JCM Accepted Manuscript Posted Online 21 August 2020

J. Clin. Microbiol. doi:10.1128/JCM.02107-20

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- 1 Neutralizing antibodies correlate with protection from SARS-CoV-2 in humans during a
- 2 fishery vessel outbreak with high attack rate
- 3
- 4 Amin Addetia¹, Katharine HD Crawford^{2,3,4}, Adam Dingens², Haiying Zhu¹, Pavitra
- 5 Roychoudhury^{1,5}, Meei-Li Huang^{1,5}, Keith R. Jerome^{1,5}, Jesse D. Bloom^{2,3,6}, Alexander
- 6 L. Greninger^{1,5,#}



Notes:

- Commercial Abbot antibody test had only 97.4% specificity (not 99.9%) and 50% positive predictive value (3/6 subjects)
- Shows that in a high exposure setting, COVID-19-immune people were protected from re-infection

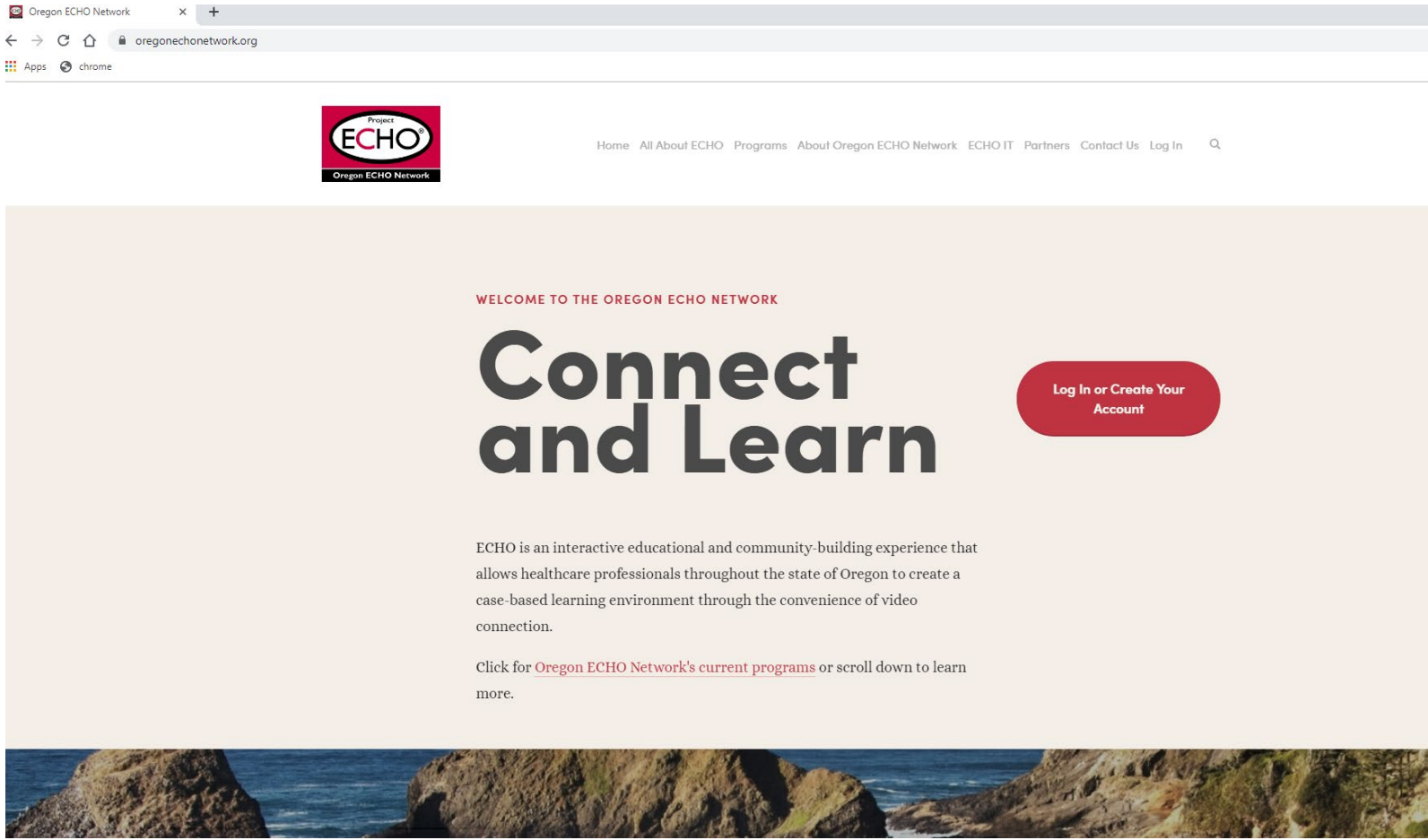
Summary

- Can people be reinfected with SARS-CoV-2?
 - The apparent loss of immunity among asymptomatic COVID-19 cases and re-evaluation of the evidence
 - Rapid loss of immunity partly due to experimental artifact of NP ELISA, refuted by maintained neutralizing antibody titers
 - The case of the healthy international traveler with sequencing data confirming reinfection w/ new virus
 - Shows that reinfection can occur, but protected from overt disease – even with highly mutated viral variant
 - The case of a lethal re-infection and its implications for the broader population
 - Individual could not produce antibodies (anti-B cell therapy), T cell response alone is unlikely to control infection
 - Similar to historic studies of untreated agammaglobulinemic individuals who get repeatedly infected by the same virus
 - An encouraging story based on a COVID-19 outbreak on a Seattle fishing boat
 - Shows that 3/3 COVID-19-immune people were fully protected against re-infection during a COVID-19 outbreak
 - Unclear how long protective immunity will be maintained but an encouraging result nonetheless
 - May provide an early indication of an immune correlate of protection – useful for predicting COVID-19 vaccine efficacy?

Questions?

- 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 November 5.**
- 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, November 12 and the expert topic is “COVID-19 Prevention/Infection Control in Ambulatory Care” presented by Craig McDougall, OHSU General Internal Medicine**

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The screenshot shows a web browser window with the address bar displaying "oregonechonetwork.org". The website header includes the Project ECHO logo and a navigation menu with links for Home, All About ECHO, Programs, About Oregon ECHO Network, ECHO IT, Partners, Contact Us, and Log In. The main content area features a large heading "Connect and Learn" and a red button labeled "Log In or Create Your Account". Below the heading, there is a paragraph describing ECHO as an interactive educational and community-building experience. At the bottom of the page, there is a photograph of a rocky coastline with waves crashing against the shore.

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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.

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