# Today’s Agenda

<table>
<thead>
<tr>
<th>Time (MT)</th>
<th>Presentation</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>1:00 – 1:05 pm</td>
<td>Welcome, Announcements, Introductions</td>
<td>Lachelle Smith, Director, ECHO Idaho</td>
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<tr>
<td>1:05 – 1:10 pm</td>
<td>Idaho Epidemiology Curves and Public Health Updates</td>
<td>Carolyn Buxton Bridges, MD FACP</td>
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<td>1:10 – 1:15 pm</td>
<td>COVID Pandemic Modeling and Social Distancing Measures</td>
<td>Andrea Christopher, MD MPH</td>
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<td>1:10 – 1:45 pm</td>
<td>Outpatient and ED COVID-19 Case Conversations and Q&amp;A</td>
<td>Frank Batcha, MD</td>
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<td>Benjamin Cornett, MD</td>
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<td>Megan Dunay, MD MPH</td>
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<td>1:45 – 1:55 pm</td>
<td>Panelist Pearls and Takeaways</td>
<td>Frank Batcha, MD</td>
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<td>Benjamin Cornett, MD</td>
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<td>Megan Dunay, MD MPH</td>
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<td>1:55 – 2:00 pm</td>
<td>Closing, Announcements, Call to Action</td>
<td>Megan Dunay, MD MPH</td>
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<td>Lachelle Smith, Director, ECHO Idaho</td>
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COVID-19 Case Conversation: Outpatient/ED

April 17, 2020

Frank Batcha, MD
Benjamin Cornett, MD
Cathy Oliphant, PharmD

Carolyn Buxton Bridges, MD FACP
Andrea Christopher, MD MPH
Megan Dunay, MD MPH
Idaho Epidemiology Curves and Public Health Updates

Carolyn Buxton Bridges, MD FACP
Governor’s Coronavirus Working Group, Former CDC Public Health Physician and Researcher
Case Counts and SARS-CoV-2 PCR Testing in Idaho

- Total lab-confirmed cases: 1,609
- Deaths: 41 (2.5%)
- At least 148 (9.1%) hospitalized
- At least 51 (3.2%) ICU, ~ 34.4% of hospitalized in ICU
- At least 187 (11.6%) HCP

Cumulative number of people tested through the Idaho Bureau of Laboratories (IBL)*

<table>
<thead>
<tr>
<th>Date</th>
<th>Number</th>
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<tr>
<td>3/30</td>
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<tr>
<td>4/2</td>
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<tr>
<td>4/6</td>
<td>2,263</td>
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<td>4/9</td>
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<td>2,828</td>
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<td>4/16</td>
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Cumulative number of people tested through commercial laboratories**

<table>
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<tbody>
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<tr>
<td>4/6</td>
<td>8,983</td>
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<td>4/9</td>
<td>10,523</td>
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<td>4/13</td>
<td>12,284</td>
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<td>4/16</td>
<td>13,142</td>
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</table>

https://coronavirus.idaho.gov
Cases in Idaho, and by Date, Age Group and Sex

COVID-19 by Age-Group

- <18
- 18-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80+

COVID-19 by Sex

- Female
- Male

Confirmed: A person with a positive laboratory test result for COVID-19 using a molecular amplification technique (e.g., PCR, NAAAT)
Probable: Symptomatic people that have epidemiologic risk factors or evidence of infection detected through non-molecular amplification tests and deceased people whose death certificate lists COVID-19 or SARS-CoV-2 as contributing to death without laboratory confirmation. (Not included in total lab confirmed cases)

https://coronavirus.idaho.gov
COVID-19 in Idaho - Syndromic Surveillance Emergency Department Data

Number of Emergency Department Visits for COVID-Like Illness

On February 19, 2020, 14 emergency department visits displayed symptoms of COVID-like illness.
Update on Serology Testing

• Four different tests now with FDA Emergency Use Authorization (EUA)
• CDC has also developed a serology test being used to *estimate* proportions of specific populations with antibody to SARS-CoV-2
• Both FDA and CDC state:
  • Results should not be used as the sole basis for diagnosis
• CDC/FDA/NIH and others are evaluating commercially manufactured serologic tests with results expected in late April.
• Because infection rates in Idaho, with the exception of Blaine County, are low, the pre-test probability of having antibody is low in the general population.
• Thus, a high % of positive antibody tests are likely false positives. AND serology tests alone should not be used for return to work decisions.
• Critical to understand test characteristics

# Update on Serology Testing

<table>
<thead>
<tr>
<th>Test Example</th>
<th>sensitivity</th>
<th>specificity</th>
<th>prevalence</th>
<th>PPV</th>
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<tr>
<td>Test A</td>
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<td>0.956</td>
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<td>0.014498555 Reported +PCR per ID pop. - MMWR 4/10/20</td>
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<td>0.00138</td>
<td>0.028601887</td>
<td>2x reported positives</td>
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<td>0.00345</td>
<td>0.068695797</td>
<td>5x reported positives</td>
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<td>0.0069</td>
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<td>10x reported positives</td>
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<td>0.0276</td>
<td>0.376853683</td>
<td>40X reported positives</td>
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<td>0.069</td>
<td>0.612272424</td>
<td>100x reported positives</td>
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<td>0.1</td>
<td>0.70303712</td>
<td>10% seroprevalence</td>
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<td>0.69</td>
<td>0.979349447</td>
<td>1000x reported positives</td>
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<td>Test B</td>
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<td>0.69</td>
<td>0.995482367</td>
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COVID Pandemic Modeling and Social Distancing Measures

Andrea Christopher, MD MPH
Internist & Associate Program Director for UW Boise Internal Medicine Residency
The SIR/SEIR Model for Epidemics

(Susceptible – Infectious – Recovered)
How a virus with a reproduction number (R0) of 2 spreads

Patient 0 infects two people

...And they each infect two people

...And they each infect two people

...And they each infect two people

Etc.

Etc.

Etc.

Etc.
Flattening the Curve

Timing and width of peak uncertain due to:
- Stochasticity in early dynamics
- Heterogeneities in contact patterns
- Spatial variation
- Uncertainty in key epidemiological parameters

Epidemic growth, doubling time 4-7 days

Social distancing flattens curve

Risk of resurgence following lifting of interventions

Measuring Social Mixing

“Can’t I please just visit one friend?”

Essential workers only  
If each household visits 1 friend  
No social distancing

http://statnet.org/COVID-JustOneFriend/
A: Self-isolation  B: Social distancing  C: School closure  D: Public events banned and complete lockdown

*Bayesian statistics: interval within which unobserved parameter falls, with particular probability.
*R\_t: average number of infections, at time t, per infected individual over the course of their infection. If R\_t is maintained at <1, new infections decrease, resulting in control of the epidemic.
Health Consequences of Social Distancing

• Health effects of social isolation:
  • Loneliness associated with higher cortisol, arterial vasoconstriction, immune dysregulation
  • Mental health: depression, anxiety, suicidal thoughts
  • Chronic isolation increases mortality risk by 29%

• Association between poverty and poor health, especially during economic downturns

https://jamanetwork.com/journals/jama/fullarticle/2764824?guestAccessKey=697d1107-bc7a-44f5-a38d-aa3799448137&utm_source=silverchair&utm_medium=email&utm_campaign=article_alert-jama&utm_content=olf&utm_term=041620

Science. 2011; 331(6014):138-140.
Questions From the Field

Frank Batcha, MD, Family Medicine, St. Luke’s Wood River Valley

Benjamin Cornett, MD, Emergency Medicine, Boise VA,
Medical Director ISU Paramedic Education Program

Cathy Oliphant, PharmD, Infectious Disease, ISU College of Pharmacy

Andrea Christopher, MD MPH, Internist, Boise VA

Megan Dunay, MD MPH, Geriatrician, Boise VA
Can you summarize the medications being used to treat COVID-19?

What is your assessment as to whether any treatments at this point are worth employing.
Can you give an update on the current status of testing in Idaho and time frames for test results?
Is there a titre being developed to test those that may have been exposed before testing was introduced?
What’s the recommendation on testing for recovering patients to determine infectious status for end of quarantine and to facilitate return to work?
What is likely best mask option for high risk individuals in the community? (This obviously excludes 'just stay home'.)
In Assisted Living settings, if all new admissions are to be treated as positive and we use PPE for the 14 days of quarantine how can we get more supplies we will burn through them very quickly?
Patient Case #1

- 72 yo F with HTN metastatic lung cancer on palliative chemotherapy develops diarrhea she thought was from chemo, then has fever and chest pain. She has become increasingly weak and calls her primary care clinic.
- How should clinic telephone line triage this patient?
• Due to symptoms concerning for COVID (fever, chest pain), she is directed to present to the emergency room.
  • What is appropriate PPE for evaluation of this patient?

• She is found to be hypoxic, with lymphopenia, and too weak to walk. She is presumed to have COVID 19 and testing is sent.
  • If COVID test is negative, how would you proceed?
Patient Case #1 (continued)

• The admitting PA discusses goals of care and code status. She does not have an advanced directive. Her main goal is to keep doing chemo for her cancer.
  • How do you approach goals of care?
83yo MD develops cough and has been napping more than usual. No fever, no shortness of breath...

How can we help patients and families know what to expect and prepare for COVID-19 treatment?
More to come...

Tuesday, April 21, noon - 1 pm MT
COVID-19 Case Conversations: Inpatient & Critical Care

Friday, April 24, 1 - 2 pm MT
COVID-19 Case Conversations: Outpatient & ED

Submit a patient case/questions:
https://www.uidaho.edu/academics/wwami/echo/covid-19/clinical-question-form