Today’s Agenda

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<tr>
<th>Time (MT)</th>
<th>Presentation</th>
<th>Presenter(s)</th>
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<tr>
<td>Noon – 12:05 pm</td>
<td>Welcome, Announcements, Introductions</td>
<td>Lachelle Smith, Director, ECHO Idaho</td>
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<tr>
<td>12:05 – 12:10 pm</td>
<td>Idaho Epidemiology Curves and Public Health Updates</td>
<td>Carolyn Buxton Bridges, MD, FACP</td>
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<td>12:10 – 12:15 pm</td>
<td>Treatment Updates</td>
<td>Cathy Oliphant, PharmD</td>
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<td>12:15 – 12:35 pm</td>
<td>Household Transmission of COVID-19</td>
<td>Courtney Bonnema, Student</td>
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<td>12:35 – 12:55 pm</td>
<td>COVID-19 Patient Case Discussion</td>
<td>ECHO Community of Practice</td>
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<tr>
<td>12:55 – 1 pm</td>
<td>Closing Pearls, Announcements, Call to Action</td>
<td>Megan Dunay, MD Lachelle Smith, Director, ECHO Idaho</td>
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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

<table>
<thead>
<tr>
<th></th>
<th>5/19/2020</th>
<th>6/15/2020</th>
<th>7/13/2020 (compared w/ prior mon)</th>
<th>8/2/2020 (compared w/ prior wk.)</th>
<th>8/10/2020</th>
<th>8/17/2020</th>
<th>8/24/2020</th>
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<tbody>
<tr>
<td>Total lab-confirmed and probable</td>
<td>2,455</td>
<td>3,462 (△556)</td>
<td>11,402 (△7,940)</td>
<td>21,675 (△2,981)</td>
<td>25,100 (△3,425)</td>
<td>27,942 (△2,842)</td>
<td>30,070 (△2128)</td>
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<td>Deaths</td>
<td>74 CFR =3.0</td>
<td>88 CFR =2.5</td>
<td>102 (△14) CFR =0.18</td>
<td>200 (△48) CFR =1.61</td>
<td>239 (△39) CFR =1.14</td>
<td>273 (34△) CFR =1.20</td>
<td>314 (41△) CFR =1.93</td>
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<tr>
<td>Hospitalizations</td>
<td>213</td>
<td>270</td>
<td>500 (△230)</td>
<td>886 (△136)</td>
<td>1006 (△120)</td>
<td>1129 (△123)</td>
<td>1269 (△140)</td>
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<tr>
<td>ICU admissions</td>
<td>89</td>
<td>100</td>
<td>144 (△44)</td>
<td>256 (△32)</td>
<td>282 (△26)</td>
<td>316 (△34)</td>
<td>350 (△34)</td>
</tr>
<tr>
<td>Healthcare personnel</td>
<td>295</td>
<td>366 (△57)</td>
<td>760 (△394)</td>
<td>1271 (△195)</td>
<td>1467 (△196)</td>
<td>1660 (△193)</td>
<td>1826 (△166)</td>
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<tr>
<td>Total tests</td>
<td>37,847</td>
<td>65,306 (△17,436)</td>
<td>129,540 (△64,234)</td>
<td>186,475 (△16,887)</td>
<td>206,830 (△20,355)</td>
<td>225,018 (△18,188)</td>
<td>238,014 (△12,996)</td>
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https://coronavirus.idaho.gov
Deaths by Age-Group

Relative impact in 0-17 year olds thus far
Date 8/10/20 & before 8/17/20 & after
Cases 2263/25,100=9.0% 504/4070=12.4%
Hosp. 29/1006=2.9% 3/263=1.1%
Deaths 0 0

Age group of Idahoans ever hospitalized with COVID-19

Cases by Age-Group

- <18: 2767-2545=222 new
- 18-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80-89
- 90-99
- 100+
Total cases per 100,000 by county

- Ada: 2214 cases, 12.6 7-day average
- Canyon: 2969 cases, 16.9 7-day average
- Payette: 2380 cases, 55.5 7-day average
- Kootenai: 1252 cases, 5.1 7-day average
- Bonneville: 1304 cases, 22.7 7-day average
- Twin Falls: 1846 cases, 10.2 7-day average
- Power: 1224 cases, 27.5 7-day average
- Blaine: 2545 cases, 1.9 7-day average
Weekly PCR Laboratory Tests Completed and Percent Positivity by Specimen Collection Date

Number of Tests Completed


Week 1: 9.2%

Week 15: 15.0%
Treatment Updates

Cathy Oliphant, PharmD
Infectious Disease, Professor and Interim Chair, ISU College of Pharmacy
Convalescent Plasma

• On 8/23/2020, the FDA authorized the emergency use authorization (EUA) of convalescent plasma for hospitalized patients
• Convalescent plasma is plasma obtained from COVID-recovered donors, which is used to transfer antibodies against COVID to others
  – The antibodies may provide short-term passive immunity
• The FDA states that “it is reasonable to believe that COVID-19 convalescent plasma may be effective in lessening the severity or shortening the length of COVID-19 illness in some hospitalized patients. The agency also determined that the known and potential benefits of the product, when used to treat COVID-19, outweigh the known and potential risks of the product and that that there are no adequate, approved, and available alternative treatments.”
Convalescent Plasma

- Data supporting the EUA is based on the use of convalescent plasma in >70,000 individuals with COVID
- Data from randomized controlled trials is not available as all of these trials are ongoing
- The EUA follows release of a non-peer reviewed preprint study released in August that demonstrated the pooled risk for mortality among individuals who received plasma with high antibody levels was 0.65 at day 7 and 0.77 at day 30
  - Improved benefit in those who were treated within 3 days of diagnosis
  - Study enrolled those with severe COVID or those who were at risk for it
COVID-19 Convalescent Plasma Reduction in Death at 7 Days

Non-intubated patients treated within 72 h age 80 or less (n=1018)

Statistically significant 37% reduction in mortality in those treated with high titer convalescent plasma (p=.03)

High titer corresponds approximately to Ortho VITROS S/C level ≥ 12

www.fda.gov
Convalescent Plasma

- Early non-randomized studies have suggested that mortality is reduced in those who received convalescent plasma
- Adverse effects
  - FDA Expanded Access Program Safety data suggest safety
  - However, reported serious adverse effects include
    - Transfusion associated circulatory overload
    - Transfusion-related acute lung injury
    - Severe allergic transfusion reactions
- Not all experts agree on the EUA
  - Some say that the available data is weak and should not prompt the issuing of an EUA
Household Transmission of COVID-19

Courtney Bonnema, Student
Human Physiology and Public Health, Boston University
Learning Objectives

• Understand household transmission of Covid-19 and its importance in studying overall disease spread
• Examine secondary attack rate (SAR) in households
• Identify measures that can be taken to prevent transmission within households
Background

- Household studies are often done in early stages of outbreaks
- Provide important information on transmission risk and what types of preventative measures should be used
- Relevant topic as children go back to school and possibly bring Covid-19 home
Early, Single Cluster Studies

Familial Cluster in January (Qian et al)

- Index cases 1-2 visited temple Jan 19 and stayed with family (cases 1-4) Jan 20-23
- Index 1-2 and cases 1-4 had dinner with other family members (cases 5-7) on Jan 23
- Index 1 became symptomatic 1/24 and tested positive by PCR 1/29

- 2 asymptomatic cases (index 2 and case 3)
- 6 out of 7 family members tested positive by PCR
- Early evidence that transmission occurs during incubation period
Early, Single Cluster Studies Cont.

Familial Cluster in Early February (Li P et al)
• Case A travelled to stay with relatives from Jan 26-28
  – 4 of these relatives tested positive Feb 4
• Case A returned home to family (cases B-F) and stayed with them from Jan 31 to Feb 3
• Case A tested positive by PCR Feb 5

- 1 asymptomatic case (case E)
• Additional early evidence of pre-symptomatic transmission

Figure 1. Epidemiological linkage and timeline of severe acute respiratory syndrome coronavirus 2 infection within a familial cluster.
Cohort Studies

**Jing et al**
- 212 primary cases, 137 nonprimary cases
- SAR 13.8% if household is defined as close relatives and 19.3% if defined as same residential address
  - SAR 7.1% for non households
- 6 asymptomatic cases (1.8%)

**Li W et al**
- 105 index patients, 392 household contacts
- SAR 16.3%
  - 27.8% for spouses of index cases
- 9 asymptomatic cases (14.1%)
Cohort Studies Cont.

Wu et al
- 35 index cases, 148 household contacts
- SAR 32.4%
  - Contacts with more than 72 hours of exposure had SAR of 41.7%
- 10.4% asymptomatic cases

Zhang et al
- 359 index cases, 369 contacts
- SAR 16.1% in households
  - SAR 3.3% for non household contacts
- 83 asymptomatic cases (23%)

Wang et al
- 124 index cases, 335 cases total
- SAR 23% in households
- 4.7% asymptomatic cases in adult secondary contacts
Multi-Study Analyses

Madewell et al

- Analysis of 40 studies
- SAR 19% in households
  - 19.9% SAR from symptomatic cases
  - 0.7% SAR from asymptomatic cases (likely underreported)
- 4 studies found higher SAR in spouses

Curmei et al

- Analysis of 9 studies
- SAR 20%
  - SAR 30% if corrected for asymptomatic cases and false negatives
1918 Spanish Flu Studies

Cumming and Lynch

• Army camp studies compared influenza case rates of different dishwashing methods
  – Daily case incidence of 3.7 per 1000 if dishes collectively washed in boiling water
  – Daily case incidence of 18 per 1000 if soldiers washed their dishes one at a time in same water as other soldiers

Cumming

• Compared influenza case rates in different public institutions
  – Influenza case rate decreased by 66% when dishwashers were used

Both point to likely importance of saliva in transmission
Preventing Transmission in Households

Wang et al
• Face masks 79% effective in reducing transmission when worn before onset of symptoms
  – Not effective if worn after onset of symptoms
• Daily use of disinfectant 77% effective in reducing transmission

Li W et al
• 0% SAR if index cases quarantined at onset of symptoms
  – Wearing a mask, residing and eating alone
Key Points

• Early studies showed asymptomatic and presymptomatic transmission
• Household transmission may be responsible for continued increase in cases after lockdown measures
• Important to consider household transmission when determining mitigation strategies
• SAR in households is higher than in non household settings
• Importance of isolating index case and mask wearing
• Spanish Flu studies suggest role for fomites (eating utensils and contaminated water) as potential sources for spread
References

References

COVID-19 Patient Case Discussion

ECHO Community of Practice
Case

- 37yo M with hx of GERD and anxiety is in his 11th year of practice as an ICU nurse. He is caring for patients with and without SARS-CoV2 (depending on the week/assignments are shifting).
- He is not being tested for COVID regularly at work at this point; his last COVID swab was at the beginning of July 2020 and was negative. He has not had any syndrome consistent with COVID.
- He lives with his fiancé and her two kids, ages 6 and 4, as well as his dad, who is in his late 60’s and has COPD and DM (diabetes mellitus).
Case, continued

• He has been seeing you for primary care for a few years and you have a pretty good rapport. Today he asks if there are any jobs at your clinic because he wants to get out of the ICU.

• He admits to insomnia and panic attacks at the prospect of infecting his father or his fiancé’s kids.

• He also explains that he and his fiancé, who works in the food industry, are having a lot of conflict about whether and when her kids should return to daycare and school. The patient doesn’t want the kids to get sick or expose other household members.
Discussion

• What diagnoses does this patient present with during this clinic visit?
• How do you think about this patient’s risk of contracting SARS-CoV2?
  – Would it be different if he had different comorbidities?
  – Would it be different if he practiced nursing in a different location/specialty area?
• How do you think about this patient’s risk of spreading SARS-CoV2 to household members?
  – How do the various generations affect that risk calculus?
• What do you advise this patient regarding his risk of contracting COVID from other members of his household, specifically the kids?
  – How does school or daycare affect this?
• How do decisions about school and childcare affect other household members’ risk of contracting COVID?
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RESOURCES FROM TODAY’S SESSION AND PAST SESSIONS CAN BE FOUND IN OUR ONGOING RESOURCE LIST.

https://iecho.unm.edu/sites/uidaho/download.hns?i=440