COVID-19 and Beaverhead County: An Overview

July 10, 2020

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SARS-CoV-2
AKA COVID-19

- An imminent threat to Beaverhead County

<table>
<thead>
<tr>
<th>Infected</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>World-wide</td>
<td>12,268,630</td>
</tr>
<tr>
<td>United States</td>
<td>3,165,058</td>
</tr>
<tr>
<td>Montana</td>
<td>1,327</td>
</tr>
</tbody>
</table>

Montana DPHHS - July 10, 2020

COVID in Montana

- Recent increase in cases due to:
  - Group gatherings
    - Weddings
    - Travel
  - Increase in testing
    only accounts for a portion of increased number of cases

Montana DPHHS (not updated for 7/10/2020)

COVID-19

- Incubation period
  - 2-14 days before viremia is detected
- Asymptomatic individuals can carry and transmit the virus

COVID-19 death rate by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Death Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9 years</td>
<td>0.01%</td>
</tr>
<tr>
<td>10-19 years</td>
<td>0.02%</td>
</tr>
<tr>
<td>20-29 years</td>
<td>0.05%</td>
</tr>
<tr>
<td>30-39 years</td>
<td>0.11%</td>
</tr>
<tr>
<td>40-49 years</td>
<td>0.21%</td>
</tr>
<tr>
<td>50-59 years</td>
<td>0.47%</td>
</tr>
<tr>
<td>60-69 years</td>
<td>1.0%</td>
</tr>
<tr>
<td>70+ years</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Montana DPHHS - July 10, 2020

COVID-19

- Incubation period
  - 2-14 days before viremia is detected
- Asymptomatic individuals can carry and transmit the virus

COVID-19 death rate by age group

- Risk factors:
  - Age (children are least affected)
  - Obesity
  - Hypertension
  - Cancer
  - Other pre-existing conditions

Herd Immunity Unlikely

- Herd immunity may not be the answer
  - Requires >70% individuals immune
  - Natural infection
  - Vaccination
- Problems:
  - Not everyone develops protective antibodies
  - Not all antibodies are protective
  - Immunity can wane
  - Virus can mutate

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How do we stop spread of the virus??

- Mechanisms of spread:
  - Airborne particles
  - Droplets
    - Speaking
    - Singing
    - Coughing
    - Sneezing
  - Contact
    - Touching contaminated surface
    - Physical contact with infected individual

“Health authorities say choir practice caused ‘super spread’ of 52 coronavirus cases”

After choir practice with one symptomatic person, 87% of group developed COVID-19

Help Stop the Spread
(be part of the solution, not part of the problem)

How Rapidly Can It Spread?

The average number of people that one person with a virus infects, based on the R0 scale
How Rapidly Can It Spread?

Potential spread of COVID-19 if social distancing is ignored

<table>
<thead>
<tr>
<th>NOW</th>
<th>AFTER 5 DAYS</th>
<th>AFTER 30 DAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PERSON INFECTED</td>
<td>2 PEOPLE INFECTED</td>
<td>400 PEOPLE INFECTED</td>
</tr>
</tbody>
</table>

Recommendations for Prevention

Hand Washing
- Soap & Water

Recommendations for Prevention

Face Masks & Distancing
Reduce COVID-19 Risk

Charts of COVID-19 transmission based on the following scenarios:

Physical distancing:
- Data Points: 85%
- 1 year or more

Face masks:
- Without face mask
  - Respiratory droplets: 50%
  - Large droplets: 33%
- With face mask
  - Respiratory droplets: 1%
  - Large droplets: 1%

Eye protection:
- Without eye protection
  - Respiratory droplets: 50%
  - Large droplets: 33%
- With eye protection
  - Respiratory droplets: 1%
  - Large droplets: 1%

* Based on a systematic review and meta-analysis of 312 observational studies (source: The Lancet)
Recent research by Goldman-Sachs suggests that "a national mask mandate would slow the growth rate of new coronavirus infections and prevent a 5% GDP loss caused by additional lockdown measures."

- Hansen, June 2020

Economic impact must be balanced with public health concerns.

- Recommendations:
  - Encourage physical distancing
  - Encourage facial coverings
  - Encourage hand washing and surface disinfection
  - Avoid large gatherings of people

Questions?