SARS-CoV-2 (COVID-19) (2019 Novel Coronavirus)

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Date: March 16, 2020
PRESENTATION OVERVIEW

• Emerging Diseases
• Corona Virus concerns / Chaos Theory
• Key messages
• Risk and Response in the United States; Ohio and Logan County
• Travel Concerns & Case Counts
• Definitions and Control Measures
• Isolation and Quarantine
• What can I do?
Emerging Diseases

- Monkey Pox
- Swine Flu
- MERS 2012
- Small Pox
- MRSA
- H1N1
- Ebola
- Novel - Influenza A
- “Bird Flu”
- Legionella
- SARS 2003
- Measles
- COVID-19
Corona Virus Disease
Coronaviruses That Infect People

- Four types of coronaviruses cause common cold symptoms.
- Two types (SARS* and MERS**) cause severe lung infection.
- All types spread through coughing, sneezing, or close personal contact.
- Symptoms are primarily high fever and cough, then as it worsens shortness of breath.
- Somewhat like Influenza.

COVID-19 (2019 Novel Coronavirus) was identified in humans in Wuhan, Hubei Province, China, in December 2019, and we are still learning about it.
COVID-19 Concerns (a Novel Virus)

- First identified in humans December 30 2019 in China.
- Many **Unknowns** – therefore Public Health measures paramount.
- It has the potential to cause severe respiratory illness and death.
- There is no vaccine.
- There are no effective medications.
- Testing is limited in the U.S.
- Spreading rapidly
Chaos Theory

• Branch of mathematics that deals with complex systems. In dynamical systems, small differences in initial conditions, such as rounding errors in numerical computations, can yield widely diverging outcomes for such dynamical systems. This renders long-term prediction of their behavior impossible.

• Examples are fluid flow, weather, climate, stock market, road traffic. And the “Diamond Princess”, Washington State!!

• COVID-19 presents just such a chaos system
Unkowns 3/15/2020

- Incubation period 3 to 5 days for Corona viruses.
  - COVID-19 14 days; infectious period-time when affected can spread infection.

- Asymptomatic infection
  - 20% for influenza

- Communicability (infection rate) - communicability about 1:2.5

- Case fatality rate - uncertain
  - Over 80 years old – 14-20%
  - Over 70 years old – 8-12%
  - Under 60 years old CFR declines rapidly

- Virus survivability outside body
  - Study released this week shows 3 days
How COVID-19 Spreads

Current understanding about how the virus that causes COVID-19 spreads is largely based on what is known about similar corona viruses.

**Person-to-person spread.**

- Between people who are in close contact with one another through contact or from the droplets of coughing or sneezing
  - 20+ feet airborne
- These droplets can enter the mouths, eyes, noses or lungs of people who are nearby.

**Contact with infected surfaces or objects**

- The virus may survive for days on surfaces and may transfer to a person touching surfaces and then hands to face.
When does spread happen?

People are thought to be most contagious when they are most symptomatic (the sickest).

- Some spread might be possible before people show symptoms; there have been reports of possibly up to 14 days before symptoms (differs from prior corona infections)
When does spread happen?

How efficiently does the virus spread?

• How easily a virus spreads from person-to-person can vary.
  • Some viruses are highly contagious (like measles-airborne), while other viruses are less so.
  • The virus that causes COVID-19 (droplet) seems to be spreading easily and sustainably in Hubei province China, Italy, Iran, South Korea and possibly Japan
  • In the United States, spread from person-to-person is occurring in Washington State only now.
• There are some “Super Spreaders” who shed much higher counts of virus.
Key Messages

▪ This is a rapidly evolving situation:
  ▪ Case counts and deaths will grow in the coming days and weeks.
  ▪ Interim guidance will change.
  ▪ It is now spreading in Ohio
  ▪ Vigilance, frequent communication, and coordination across health care, public health, emergency management, and other partners, and to the public is critical.

▪ Continue to practice and promote flu and respiratory infection prevention.

▪ #socialdistancingnow #washyourhands #flattenthecurve
The Risk for Ohioans
What is the Current Risk for Ohioans?

- **It is here!**
  - With no vaccine and no anti-viral, the public health basics of isolation, quarantine, social distancing and personal steps of hand washing, covering your cough are paramount.
    - People exposed to ill persons are at greater risk – family members and health care workers caring for patients with COVID-19.
  - Situation and public health response are evolving.
Traveler Information
Travel Restrictions

• Travel restrictions are changing rapidly refer to the CDC travel site for up to date information: wwwnc.cdc.gov/travel/

• All travelers are encouraged to enroll their travel plans in the smart traveler enrollment program www.step.state.gov
  • They can receive important messages; timely alerts & updates to travel advisories.

• Stay home if you can, especially if you are over 70.
Prevention Information
Prevention

▪ No vaccine.

▪ Use typical infectious disease precautions:
  ▪ Wash your hands often with soap and water, Special attention to fingertips.
  ▪ Second choice use alcohol-based hand sanitizer (over 60% alcohol).
  ▪ Avoid touching your Face, mouth, nose, or eyes.
  ▪ Cover coughs/sneezes with your arm or shirt.
  ▪ Avoid exposure to others who are sick.
  ▪ Stay home if you or family are ill.
  ▪ Get adequate sleep and eat well-balanced meals to ensure a healthy immune system.
  ▪ Clean and disinfect frequently touched objects and surfaces.
COVID-19 Background
## COVID-19 Compared to Past CoV Epidemics

<table>
<thead>
<tr>
<th>Coronavirus Type</th>
<th>Origin</th>
<th>Cases</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19</td>
<td>December 2019 (China)</td>
<td>162,687 confirmed</td>
<td>6,065 CFR** = ?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Continues to evolve</td>
</tr>
<tr>
<td>MERS-CoV</td>
<td>2012 (Saudi Arabia)</td>
<td>2,494</td>
<td>858 CFR = 34%</td>
</tr>
<tr>
<td>SARS-CoV</td>
<td>2002 (China)</td>
<td>8,098 (None since 2004)</td>
<td>774 CFR = 10%</td>
</tr>
<tr>
<td>Seasonal Influenza</td>
<td>US</td>
<td>US 25-45 Million</td>
<td>US 25-55 Thousand CFR = 0.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(350-620 Thousand hospitalizations)</td>
<td></td>
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</tbody>
</table>

*Reported by the World Health Organization.
**Case Fatality Rate.
Most countries are isolating and quarantining:

- France has closed all shops and stores except essential.
- Italy & Spain have shut down the country, all police are under federal jurisdiction.
- New Rochelle is cordoned off.
- Schools, large gatherings eliminated in many states.
- Prepare for possible complete shutdown of Ohio, perhaps US
- CDC recommends < 50 people at any gathering

#socialdistancingnow, #washyourhands, #flattenthecurve
Locally...

The Logan County Health District is:

• Keeping up to date with public health resources.
• Updating website with resources and links loganhealth.org
• Coordinating & sharing Information with all county health personnel, education, business and industry.
• Giving Presentations in Community
• Following planning guidelines for pandemic response.
Definitions / Isolation & Quarantine
Surveillance

• Watching diseases in the community; Close observation

• In Ohio, all local health districts and health departments have disease control nurses and an epidemiologist to perform disease surveillance which is very important on a day to day basis and especially with a new emerging disease such as COVID-19

• COVID-19 is a Class A reportable disease.
Ease of Transmission

Transmissibility (scaled)

Severity (scaled)
Protective measures – #flattenthecurve

Cumulative infections

- Business as usual
- 25% contact reduction
- 50% contact reduction
- 75% contact reduction

Intervention
Definitions

• Close contact - is defined by CDC being within 6 feet or 2 meters of someone.

• Congregate settings - are public places where close contact with others may occur. Congregate settings include settings such as shopping centers, movie theaters, stadiums, workplaces, and schools and other classroom settings.
Definitions Continued

• **#Socialdistancingnow** - means remaining out of congregate settings, avoiding local public transportation (e.g., bus, subway, taxi, ride share), and maintaining distance (approximately 6 feet or 2 meters) from others.
  • If social distancing is recommended, presence in congregate settings or use of local public transportation should only occur with approval of local or state health authorities.
Definitions Continued

• **Isolation** - means the separation of a person or group of people known or reasonably believed to be *infected with a communicable disease and potentially infectious*, from those who are not infected to prevent spread of the communicable disease.

  • Isolation for public health purposes may be voluntary or compelled by federal, state, or local public health order.
• **Quarantine** - in general means the separation of a person or group of people reasonably believed to have been *exposed to a communicable disease but not yet symptomatic*, from others who have not been so exposed, to prevent the possible spread of the communicable disease.
Definitions Continued

• **Public health orders** - are legally enforceable directives issued under the authority of a relevant federal, state, or local entity that:
  • when applied to a person or group, may place restrictions on the activities undertaken by that person or group
  • potentially including movement restrictions or a requirement for monitoring by a public health authority
  • This is for the purposes of protecting the public’s health.
Ohio Revised Code 3707.04

• **3707.04 Quarantine regulations.**
  
  • In time of epidemic or threatened epidemic, or when a dangerous communicable disease is unusually prevalent, the board of health of a city or general health district, after a personal investigation by its members or executive officer to establish the facts in the case, and not otherwise, may impose a quarantine on vessels, railroads, or other public or private vehicles conveying persons, baggage, or freight, or used for such purpose. The board may make and enforce such rules and regulations as are wise and necessary for the protection of the health of the people of the community or state, but the running of any train or car on any steam or electric railroad, or of steamboats, vessels, or other public conveyances shall not be prohibited.

  • A true copy of such quarantine rules and regulations shall be immediately furnished by such board to the department of health, and thereafter no change shall be made except by the order of the department or the board to meet a new and sudden emergency.

  Effective Date: 10-01-1953.
What Can You Do?  PREPARE

• Store a two-week supply of water and food.
• Periodically check your regular prescription drugs to ensure a continuous supply in your home.
• Have any nonprescription drugs and other health supplies on hand.
• Talk with family members and loved ones about how they would be cared for if they got sick, or what will be needed to care for them in your home.
What Can You Do? PREPARE - continued

Follow Basic Public Health Principles
• Stay home if you are over age 65
• Stay home if you have a fever and cough.
• Self quarantine if exposed (Italy, Dartmouth, and Romania)
• #socialdistancing, avoid crowds
• Wash your hands 20+ seconds with soap and water or alcohol based sanitizer
• Cover your sneeze and cough
• #washyourhands
We’re in this together!

- Protect Yourself
- Protect Others
- This is a human, social and moral responsibility

Are these severe measures really necessary?
- This is all we have.

**Previous Pandemics**
- 430-426 BC Plague of Athens - Killed 25% of the population - Typhoid
- 541-750 AD Plague of Justinian – Killed 25%-50% Of human population - Bubonic
- Black Death – 1331-1353 AD – Killed one third of Europeans – Bubonic
- Spanish Flu – 1918-1920 – Killed 50-100 Million worldwide - Influenza
Who can I contact for general Information?

www.coronavirus.ohio.gov
Website for information for specific groups

ODH call center to answer questions regarding coronavirus (COVID-19). The call center will be open 7 days a week from 9:00 a.m. to 8:00 p.m. and can be reached at

1-833-4-ASK-ODH (1-833-427-5634)
Resources

- Ohio Department of Health (ODH):
  - 113 Local Health Districts.
  - www.coronavirus.ohio.gov

- Centers for Disease Control and Prevention (CDC):
  - www.cdc.gov/coronavirus/2019-nCoV.

- World Health Organization (WHO):
  - www.who.int/emergencies/diseases/novel-coronavirus-2019

  - Updated February 8, 2020
THANK YOU!

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