



Conflict of interest

- Note: I am a consultant for a telehealth agency, MDLive (mdlive.com)
- I do not fell that this is a conflict of interest for this presentation



Learning Objectives and References

- After the presentation, the participant should be able to
 - Know the symptoms of Coronavirus (1)
 - Understand the Oklahoma Resources (2)
 - Answer many questions concerning Coronavirus (3)

References:

- 1. https://www.cdc.gov/coronavirus/2019ncov/index.html
- 2. https://coronavirus.health.ok.gov/
- 3. https://www.isglobal.org/en/coronavirus



Advisory Committee on Immunization Practices (ACIP) I am the AOA's liaison member, thank you for allowing me to represent the profession.

- Next meeting will be virtual meeting on Wednesday June 24th
 - Anticipate having a vote for the annual influenza recommendation
 - Discuss any other urgent issues
- Rapidly moving developing a COVID-19 Work Group
- Anticipate having at least one emergency ACIP meeting to make sure there is enough time to process all the information on COVID-19 vaccine issues and develop recommendations



We have learned -



- That Coronavirus is NOT from drinking Corona Beer
 - Facebook post claimed: Coronavirus has caused a decrease in Corona Beer sales
 Fake News:
 - Corona's parent company reports that its beer sales in the U.S. are up this year, contrary to viral Facebook posts that falsely claim its U.S. sales have dropped because of the new coronavirus.

Background on Coronavirus



The nCoronavirus
Time-line
Dec. 31, 2019 –
March 24,
2020



And once again China has opened up markets



Cow legs
Chicken parts plus
feet
Brains
Intestines
Bacon

Vector thought to be BAT















(Bronx Zoo Tiger Is Sick With the Coronavirus)

About Coronaviruses

- Coronaviruses are common in different animals.
 Rarely, an animal coronavirus can infect humans
- Many kinds of coronaviruses
 - Some of them can cause colds or other mild respiratory (nose, throat, lung) illnesses
 - Others can cause more serious diseases, including severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS)
- Named for their appearance: Under the microscope, the viruses look like they are covered with pointed structures that surround them like a corona, or crown.



Basically everywhere in the world! Pandemic!





Things Learned

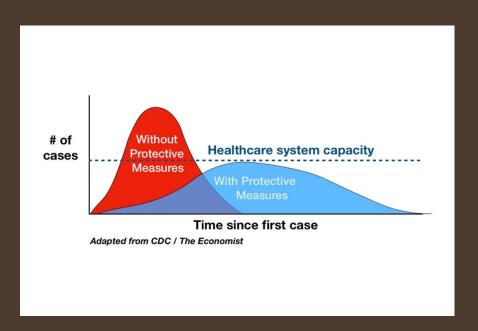


What about the new terms needed to learn (3)

https://www.merriamwebster.com/wordsat-play/coronaviruswords-guide

- Pandemic
- Flattening the curve
 - Social distancing
 - Self-isolation
 - Self quarantine





- MERS(Middle East respiratory syndrome)
- SARS(severe acute respiratory syndrome)
- SARS-CoV-2 virus (nCoronavirus disease 2019, COVID-19)
- Stay at home Hand washing
- PPE (personal protective equipment)
- PUI (person under investigation)
 Lockdown
- N 95 face mask
 Distance learning
 Community spread
- National emergency Virtual Learning Shelter in place



OK food, toilet paper and "supply chain" is appropriate

- No need to hoard food or other household supplies
- Several stores have reserved
 6 am to 7 am for Seniors 6o+
- Those with compromised immune system

A decision was made



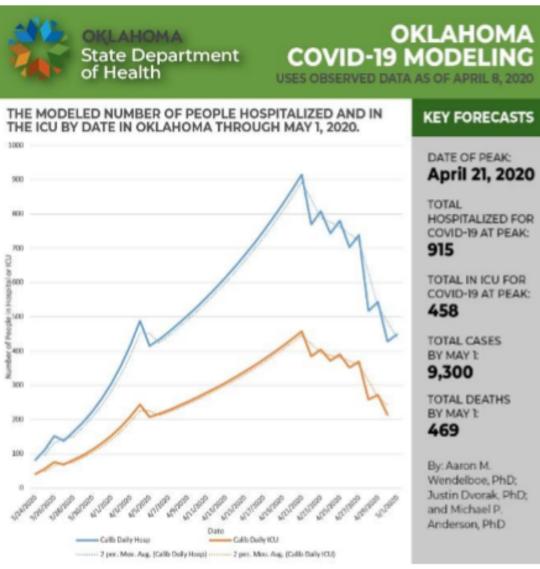
Limited toilet paper but plenty of beer...priorities



Telemedicine works See DO Magazine,4/1/2020 "How to do telemedicine in the time of COVID-19" Michael Brown, DO, goes over the new rules and the basics.

- The novel coronavirus disease (COVID-19)
 pandemic has led CMS and most private
 insurers to dramatically change their
 requirements for remote physician visits
- As a result of these changes—along with social distancing and other measures to avoid exposure to the virus—physician use of telemedicine has exploded
- On March 17, President Donald Trump announced that CMS would expand its coverage for telehealth visits

Here is the latest update from the Health Department as well as the hospital surge plan:



CURVE MODEL AND HOSPITAL SURGE PLAN RELEASED

- April 21 will be Oklahoma's pandemic PEAK, according to State Department of Health modeling available at [coronavirus.health.ok.gov/articles/osdh-releases-covid-19-modeling-oklahoma-estimates-april-21-peak]coronavirus.health.ok.gov/articles/osdh-releases-covid-19-modeling-oklahoma-estimates-april-21-peak
- The MODEL projects 9,300 cases and 469 leaths by May 1.
- The model is used for PLANNING to provide resources when they are necessary
- The state's HOSPITAL SURGE plan ensures ample hospital beds, ICU beds, and

ventilators are available at the peak. It will be launched in three phases as necessary:



The plan will be accomplished in 3 phases

- PHASE ONE features existing hospitals increasing their capacities by 40%.
 Patients currently in hospitals will stay where they are, and new patients will be kept in their geographic region to the fullest extent possible.
- PHASE TWO includes OSU Medical Center in Tulsa and an Oklahoma City metro hospital being used as flex sites focused on COVID-19 patients. The Oklahoma City location will be publicly announced soon.
- o PHASE THREE adds additional facilities constructed by the U.S. Army Corps of Engineers with assistance from the Oklahoma National Guard.



Oklahoma's daily statistics for 4/11/2020

- RECOVERIES were up by 75, putting total recoveries at 865. DEATHS were up by eight, putting total deaths at 88.
- There have been 22,511 TESTS reported, with 1,794 CONFIRMED cases after 110 new cases yesterday.
- There are 158 people HOSPITALIZED, with 113 of them in ICU, leaving 37% of the state's current ICU beds available. There have been 428 hospitalizations over the course of the pandemic.
- There are now 80 DRIVE-THRU testing sites statewide. Get details at [coronavirus.health.ok.gov/drive-thru-testing]coronavirus.health.ok.gov/drive-thru-testing



Test if:

- 1. 100.4 F
- 2. Coughing
- 3. Shortness of breath

Testing for Coronavirus

• https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/testing-in-us.html



Testing for Coronavirus with PNP.

Positive tests may not be until symptoms of runny nose, fever and cough (3-5 days)

- Abbott Labs:
 - Small testing machine
 - Results in 5 to 13 minutes.
 - FDA approved March 27, 2020
 - Using molecular testing technologies
- Detects the presence of the virus by identifying a small section of the virus' genome, then amplifies that portion until there is enough to be detected.
- The company said it's working to produce 50,000 tests per day using the small testing boxes.



Serological antibody testing

- Measures the amount of antibodies in the blood by detecting an immune response to the virus
- More than 70 test developers per FDA
- Helps health care professionals to identify individuals who have overcome an infection in the past and have developed an immune response
- May potentially be used to help determine, together with other clinical data, that individuals are no longer susceptible to infection and can return to work
- Help determine who can donate plasma as part of an experimental treatment for seriously ill COVID-19 patients



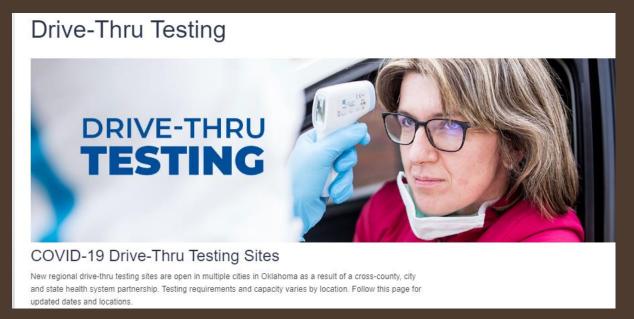
Testing in OK,
Quick tests
PNP
and
antibody
testing

- Gov. Stitt claims quick coronavirus test are available in OK (4/11/2020)
- Oklahoma to start testing for COVID-19 antibodies (April 9 per Gov. Stitt)
 - Health officials plan to select 1,000
 Oklahomans randomly to complete
 serological COVID-19 testing starting in the
 4/14/2020
 - https://kfor.com/news/local/covid-19-drive-thru-testing-sites-open-across-oklahoma/



Testing for diagnosis More than 80 drive through tests sites in Oklahoma

- There are laboratory tests that can identify the virus that causes COVID-19 in respiratory specimens
- State and local public health departments have received tests from CDC
- Medical providers are getting tests developed by commercial manufacturers





Do people who recover from Covid-19, develop immunity to the virus?

- So far, evidence points to a qualified "yes"
- Big implications
 - Survivors could return to work before the outbreak is over and help reboot the economy
 - Immune doctors and nurses could care for the critically ill without fear
 - The antibodies their bodies produce could produce and effective prophylaxis and treatment



Questions without firm answers

• 1. Do the antibodies give lifelong immunity — as with polio or measles — or is the protection narrow and likely to fade, as with antibodies for colds and the flu?

(Note: Even if you can get re-infected, it's likely the symptoms would be milder the second time.)

- 2. Do people who get the coronavirus, but do not become very sick, produce enough antibodies to protect them, at least until a vaccine can be introduced?
- 3. Adequate numbers of blood tests are needed, which can detect the antibodies.



What can analyzing wastewater tell us?

- Researchers can track infectious diseases that are excreted in urine or feces such as COVID-19)
- 2. Provide better estimates for how widespread the coronavirus is than testing, because wastewater surveillance can account for those who have not been tested and have only mild or no symptoms
- 3. Could be used as a non-invasive earlywarning tool to alert communities to new COVID-19 infections



How to order COVET-19 test in OK www.okosteo.org.



This is an official Oklahoma Health Alert Network Health Advisory

The Oklahoma State
Department of Health
(OSDH) Acute Disease
Service (ADS) is now
using 4 types of
documents to provide
important information to
medical and public health
professionals, and to
other interested persons:

Categories of Health Alert messages:

Health Alert

Provides vital, timesensitive information for a specific incident or situation; warrants immediate action or attention by health officials, laboratorians, clinicians, and members of the public and conveys the highest level of importance.

Health Advisory

Provides important information for a specific incident or situation; contains recommendations or actionable items to be performed by public health officials, laboratorians, and/or clinicians; may not require immediate action.

Health Update

Provides updated information regarding an incident or situation; unlikely to require immediate attention.

Health Info/Event

Provides general public health information; unlikely to require immediate action. March 24, 2020 OKHAN_307--2020_03-24 ADV-N Reference: N/A

Process to Order a COVID-19 Test

Physicians can order a COVID-19 test (for patients meeting the testing criteria noted) by following the below procedure for submission to the OSDH PHL:

EFFECTIVE 3/27/2020, Specimens submitted without PUI, Screening Template, and Lab Requisition Forms will be UNSAT for testing.

Summary Points

- National shortage of nylon nasopharyngeal swabs
- PUI Form
- Process to order COVID-19 Test
- · Testing Criteria at PHL
- PHL Requisition Form
- Script for Provider Evaluation
- Complete the OSDH PHL Test Requisition Form (ODH 419).
- a. Accessible in PHOCIS and PHIDDO. Also, a hardcopy or fillable copy is available at http://phl.health.ok.gov (Forms).
- Information on the form must match identifiers used to label the specimen.
- Review the Guidelines for Shipping Clinical Specimens Classified as a Biological Substance. Double-bag specimens or place in Category B box, as available.
- 3. Submit specimen as follows:
 - a. Hospitals and county health departments with routine OSDH PHL contracted courier service: Submit specimens using the regular courier service currently provided to your facility.
 - b. Other sites: Submit specimens to your local county health department.
 - Please, contact the county health department ahead of time to make sure the facility is open.
 - Submit ONE swab in viral transport medium (VTM), universal transport medium (UTM), M4 or equivalent.

Note: While the FDA has indicated that liquid Amies-based transport media (e.g., Copan E-Swab or Puritan Opti-Swab systems) or a dry swab in sterile saline could be used to collect and transport samples for COVID-19 testing, neither the CDC or the OSDH PHL have verified the performance characteristics of these collection devices. <u>Therefore, until further quidance from</u> the CDC is provided, the OSDH PHL cannot accept these specimens for use in the CDC test.

Message #: OK-HAN_307 / Reference: N/A

3/27/2020, Specimens submitted without PUI, Screening Template, and Lab Requisition Forms will be UNSAT for testing.

EFFECTIVE



Protecting oneself from Coronavirus

- Clean your hands often (sanitizers with > 60% alcohol)
- Avoid close contact
- Cover your mouth and nose with a cloth face cover when around others
- Cover coughs and sneezes
- Clean and disinfect
- Change shoes and outer clothing at the door
- https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html



Disinfecting



Options include:

- Diluting your household bleach.
- To make a bleach solution, mix: 5 tablespoons (1/3rd cup) bleach per gallon of water

OR

4 teaspoons bleach per quart of water

- Follow manufacturer's instructions for application and proper ventilation and do not use if expired
- Alcohol solutions: Ensure solution has at least 70% alcohol.
- Other common EPA-registered household disinfectants.

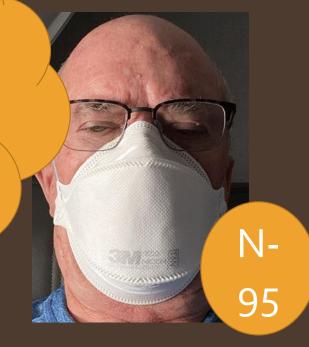


HCP protect yourselves and your patients by using telemedicine. Around the world HCP are dying!

- In China, more than **3,000 doctors** were infected, nearly half of them in Wuhan, where the pandemic began, according to Chinese government statistics
- Li Wenliang, the Chinese doctor who first tried to raise the alarm about Covid-19, eventually died of it.
- In Italy, the number of infected heath care workers is now twice the Chinese total, and the National Federation of Orders of Surgeons and Dentists has compiled a list of 50 who have died
- Nearly 14 percent of **Spain's** confirmed coronavirus cases are medical professionals.

chinese
equivalent of N95
masks now
imported and
used by health
care workers

CDC recommends face masks. HCP (N95) vs covering the face. How far does Coronavirus Travel?





- Simple cloth masks that cover the mouth and nose can prevent viral transmission from people who are infected but have no symptoms
- Researchers "found that under the right conditions, liquid droplets from sneezes, coughs and just exhaling can travel more than 26 feet and linger in the air for minutes



Healthcare Providers

- For your patients, family and yourself, stay safe
 - Consider telemedicine
 - If seeing patients face-to-face
 - Wear N-95 face mask
 - Gloves
 - Gown
 - Remember:

In Memoriam: DO ER physician and Medical Economics contributor died from COVID-19

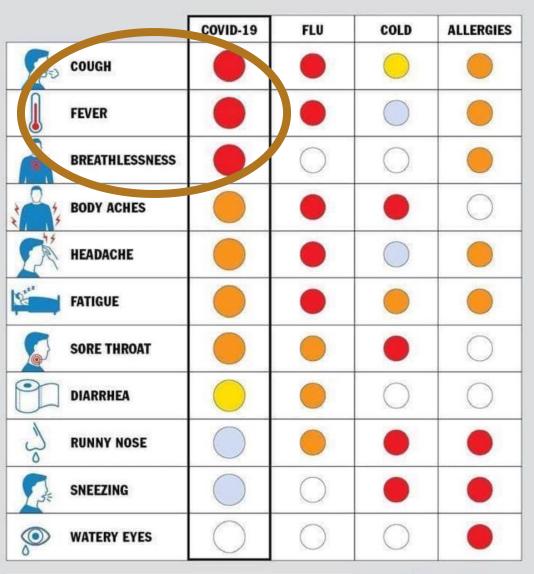


Symptoms



Is it – Covid-19 Flu Cold Allergy

COVID-19 SYMPTOMS vs. Flu, Cold & Allergies















COVID-19: Wide spectrum of disease

Mild Illness	Uncomplicated upper respiratory tract viral infection
Moderate Pneumonia	Pneumonia without the need for supplemental oxygen
Severe Pneumonia	Pneumonia with dyspnea, respiratory distress, SpO2≤93% on RA, P/F ratio <300
Critical Illness	Respiratory failure, septic shock, multiple organ dysfunction/failure



Link: WHO Guidelines 2020



Children and COVET-19
Seem less severe (results from Wuhan, China

Children

- Less severe signs
- Mean age 3-years
- Less likely to have comorbid health problem
- Fever 6/6
- Cough 6/6
- Vomiting 4/6
- No deaths
- WBC with low lymphocytes and neutrophil

Adults/not children

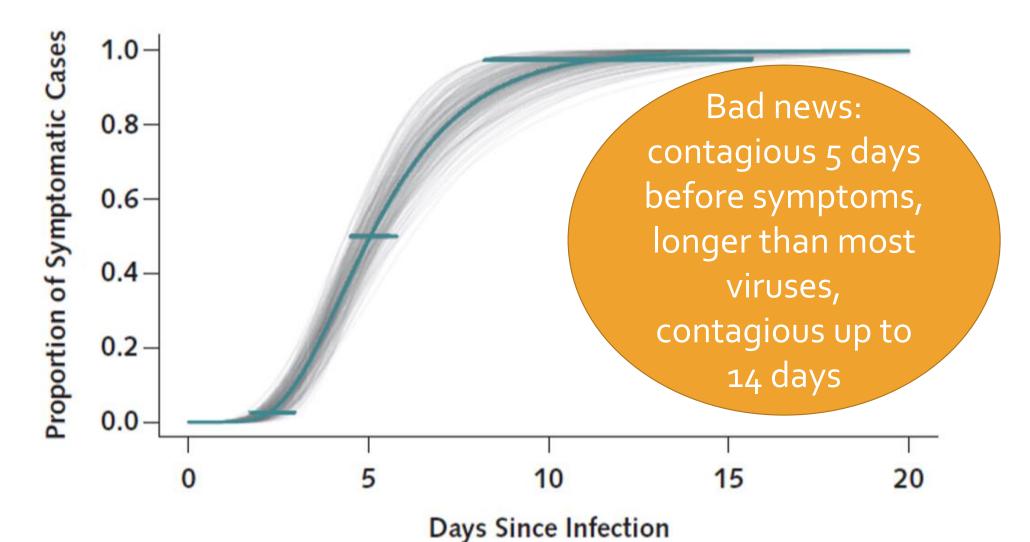
- Lethargy
- Dyspnea
- Myalgias
- Headache
- Nausea/vomiting/
- Mental confusion



Pregnancy

- 3rd Trimester Pregnancy (36 and 39 weeks) with SARS-COV-2 admitted to hospital in Wuhan, China
 - All delivered live infants via C-sect
 - No neonatal asphyxia
 - No vertical transmission in amniotic, cord blood, breast milk or neonatal throat swab
 - The clinical condition of the mothers was similar to non-pregnant women

Median incubation period is 4-5 days (range: 2-14 days)

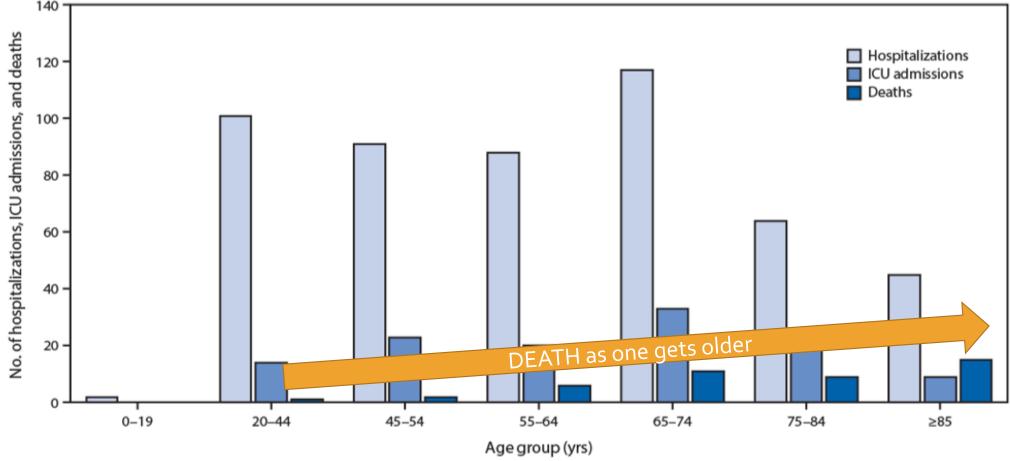




Links: Lauer Ann Intern Med 2020, Xu BMJ 2020, Guan NEJM 2020

Older adults: More likely to require ICU care and die, but hospitalizations and ICU admissions also occur among non-elderly adults

COVID-19 United States, February 12–March 16, 2020 (N = 4,226)

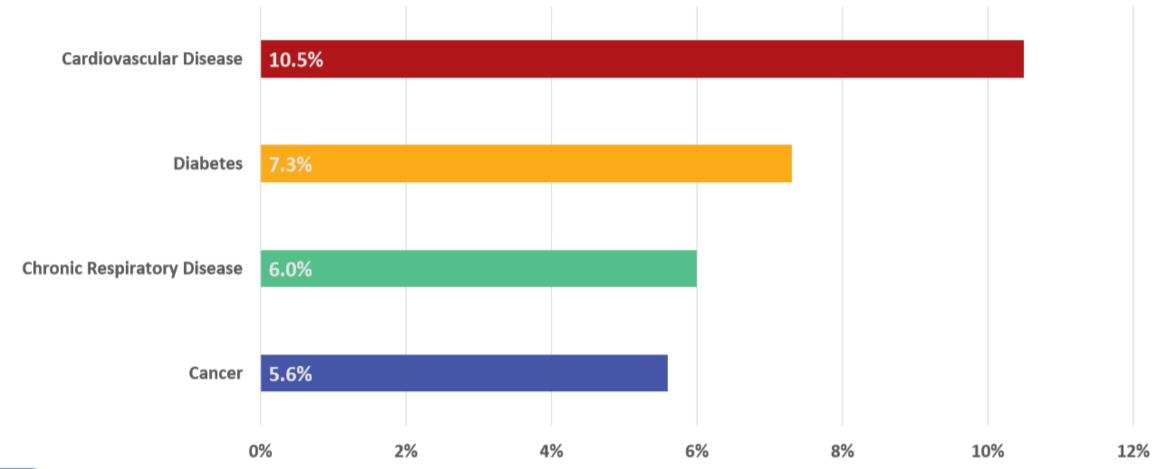




Links: MMWR 2020

COVID-19 Case Fatality is highest among persons with underlying medical conditions

COVID-19 - China through 11-Feb-2020



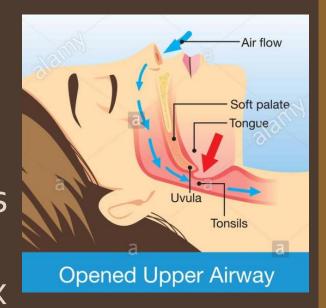


Link: China COVID-19 Epi Team 2020



Why the shortness of breath rather than congestion?

- Coronavirus infects cells below the voice box, in the airways and deep in the lungs
- Flu viruses start with your nose and throat
- Coronavirus reaches those cells via fluid in the nose or throat that sneaks past your voice box (this is called aspiration) and slides down your windpipe, or trachea.



As we get older (maturing), reflux increases



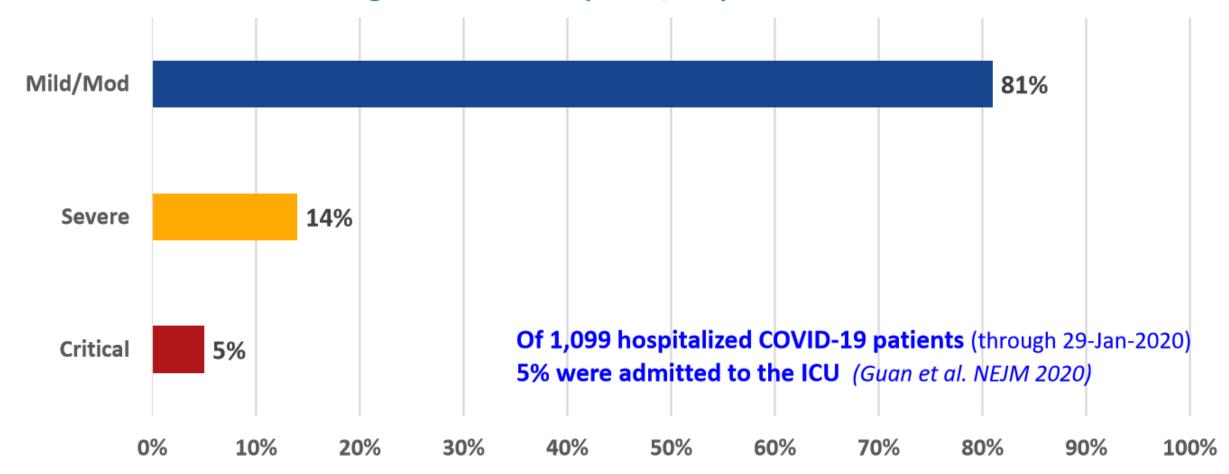
Proper way to do PNP per NEJM

https://www.youtu be.com/watch?v=D VJNWefmHjE



Most patients had mild to moderate disease, but nearly 20% had severe or critical illness

COVID-19 - China through 11-Feb-2020 (N=44,415)





Links: Wu JAMA 2020

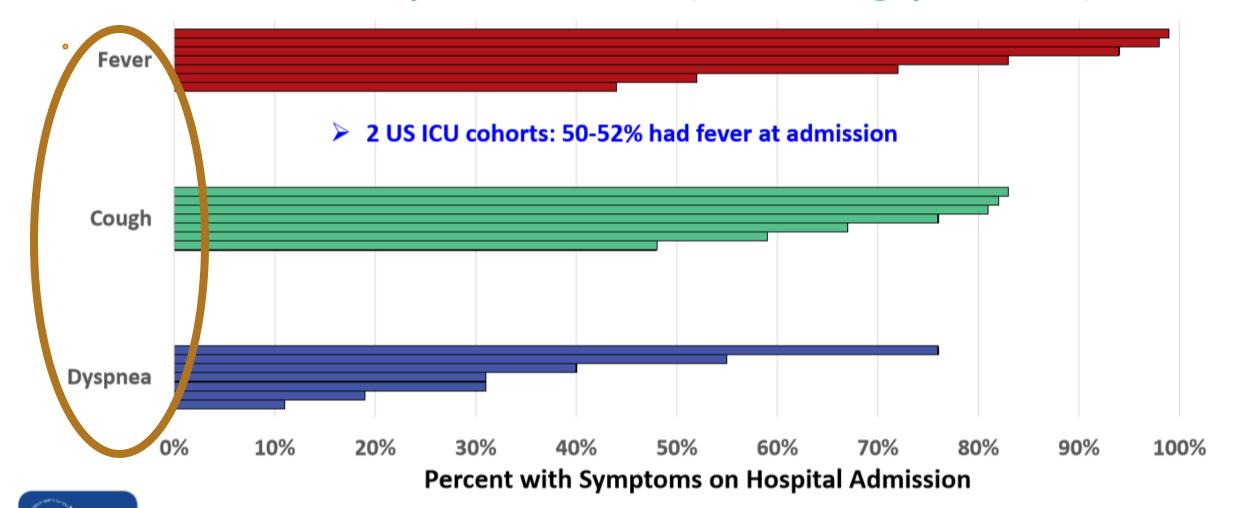


When to Seek Medical Attention

- If one develops **emergency warning signs** for COVID-19 get **medical attention immediately**
 - Trouble breathing
 - Persistent pain or pressure in the chest
 - New confusion or inability to arouse
 - Bluish lips or face

Note: This list is not all inclusive. Please consult your medical provider for any other symptoms that are severe or concerning

Most, but not all patients have fever, cough, or shortness of breath on hospital admission (China, Singapore, U.S.)





Most common complications and lab finding

Because of lack of tests, some facilities are using CXR to diagnose COVET-19 🛞

- Pneumonia
- ARDS
- Septic Shock
- Hospital acquired infection

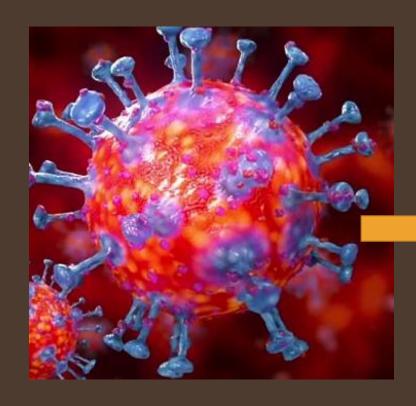


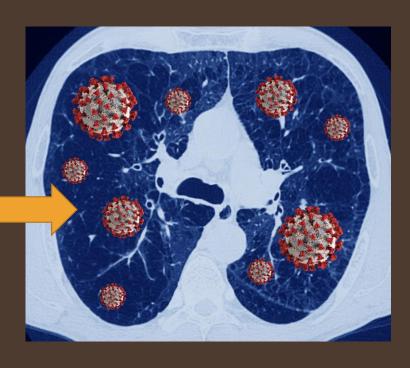
- Lymphopenia
- + CRP
- Elevated AST

CXR: Ground glass opacities appearance bilaterally; Poor inspiratory Xray.



Those nasty looking spikes attach to lung tissue rather than upper respiratory tissue







Treatments



Behavioral
Health Services
Available at
County Health
Departments
Through MyCare
Technology

- The Oklahoma State Department of Health (OSDH) is partnering with the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) and MyCare to offer services to clients who may find themselves in crisis. Local county health departments at 81 sites will have access to iPads designed to assist clients who may be in mental health distress during the COVID-19 crisis
- The MyCare application is setup on electronic tablets provided to local health departments as a quick resource for immediate assistance from behavioral health specialists enlisted by the ODMHSAS through the telehealth format
- Disaster distress helpline is available by calling 1-800-985-5990



Why is
Coronavirus
more serious
than
Influenza?

- Many people have full or partial immunity to the flu virus because they have had it before or were vaccinated against it (vaccine and treatments available)
- Far more people are vulnerable to coronavirus, so it has many more targets of opportunity to spread
- Influenza virus likes upper airways
- Coronavirus attach to lower airways



Children Clinics:

Maintaining Clinical Preventive Services, Including Immunizations, During the COVID-19 Pandemic

- Some strategies used:
 - Postponing or cancelling non-urgent elective procedures
 - Use telemedicine instead of face-to-face encounters for routine medical encounters
- Separate well visits from sick. Examples include:
 - Schedule well visits in the morning and sick visits in the afternoon
 - Separating patients spatially:
 - Place patients with sick visits in different areas of the clinic or another location from patients with well visits
- If a practice can provide only limited well child visits, prioritize newborn care and vaccination of infants and young children (through 24 months of age) when possible



Clinics adults CDC recommendations

- Delivery of some clinical preventive services for adults, such as immunizations, requires faceto-face encounters and in areas with community transmission of SARS-CoV-2, these should be postponed except when:
 - An in-person visit must be scheduled for some other purpose and the clinical preventive service can be delivered during that visit with no additional risk
 - An individual patient and their clinician believe that there is a compelling need to receive the service based on an assessment that the potential benefit outweighs the risk of exposure to the virus that causes COVID-19





Can I take
ibuprofen if I have
COVID-19
symptoms???
ACEs and ARBS?

Coronaviruses bind to target cells using the angiotensin-converting enzyme.

Molecule is substantially increased in diabetics, patients treated with ACE inhibitors, angiotensin 2 receptor blockers (ARBS), and ibuprofen

WHO initially recommended using acetaminophen but now has said ibuprofen ok but being studied

FDA has issued a statement: "There is not enough scientific evidence to link the use of NSAIDs to worsening symptoms of COVID-19

American Heart Association and the American College of Cardiology (ACC) issued a joint statement urging patients with cardiovascular disease diagnosed with COVID-19 to continue taking their ACE inhibitors and ARBs as prescribed



New Treatment "Plasma"

- FDA approved to transfuse donated plasma from a recovered COVID-19 patient into a critically ill patient
- Plasma from someone who has recovered from COVID-10 contains antibodies made by the immune system and is used is used to kill the virus
- Transfusing antibody-rich plasma into a COVID-19 patient who is still fighting the virus may transfer the power of the antibodies into a healing, possibly life-saving therapy



Vaccines advance at rapid pace

- In normal circumstances, development of new vaccines and treatments would take years
- Pharmaceutical industry is racing to compress this timeline with the support of nonprofit organizations, government agencies and regulatory authorities
- Several vaccine candidates are in the works
- Likely to take 12-18 months before a vaccine can be made available for the U.S. public
- The traditional way of developing a vaccine is to grow and inject patients with inactivated viruses
 - Example: flu vaccine is produced by growing the virus in millions of chicken eggs
 - The process alone takes 4 months



Future treatments Clinicaltrials.gov

- **BCG Vaccination** (TB) to Protect Healthcare Workers Against COVID-19 (Phase 3)
- Plasma from patients recovered from COVET-19
- Medications
 - Hydroxychloroquine with/without Z-Pak
- Antivirals
 - Remdesivir (developed for Ebola), Lopinavir/ritonavir (HIV treatments)
 Nitazoxanide (used for influenza)



Most discussed medication Hydroxychloroquine

- Hydroxychloroquine is safer, fewer drug/drug and can give higher dosage than Chloroquine
- Results so far:
 - 70% of hydroxychloroquine treated patients were virologically cured at post-day 6
 - Control group 12.5% cured at post-day 6
- Azithromycin was added to prevent superinfection and seems to have a possible synergistic effect



Documents for the Hospital Crisis Standard of Care Plans and Suggestions for Oklahoma facilities

Table of Contents

Document Overview	3
Potential Trigger Events	3
How to Use	
General Core Strategies	
Capacity Definitions	
Resource Strategy Reference Cards	
OXYGEN	5
STAFFING	
NUTRITIONAL SUPPORT	7
MEDICATION ADMINISTRATION	8
HEMODYNAMIC SUPPORT & IV FLUIDS	10
MECHANICAL VENTILATION / EXTERNAL OXYGENATION	12
BLOOD PRODUCTS	
RENAL REPLACEMENT THERAPY	18
PALLIATIVE CARE	20

OK-HAN Coordinator at (405) 271-4060 or okhan@health.ok.gov.



HIPAA privacy rules are still applicable, regardless of the severity of diagnosis or exposure. • True or False: Due to the potential pandemic spread of coronavirus, HIPAA privacy rules do not apply when an employer learns of an employee's diagnosis of or exposure to the disease. The safety of other employees trumps the privacy of contagious individuals

• A: True

B: False



Good News

- MARCH 19: For the first time, China reports zero local infections
- Americans will have
 - Additional time to file and make payments to IRS from April 15 to July 15, 2020 without interest or penalties
 - Oklahoma Tax Commission (OTC) decided to extend the filing date from 4-5 to 7-15.



Cleaning surfaces



- Wipe down all hard, nonporous surfaces thoroughly
- Read and follow the package instructions about how long the surface needs to stay visibly wet
 - Ranges from about 30 seconds to four minutes.
 - This is when the germ-killing magic happens, so you can't rush it.





Coding ICD-10-CM (https://www.a appublications .org/news/202 0/03/12/coding 031220

- COVID-19 attacks the respiratory system; therefore, suspicion of the disease typically will accompany respiratory conditions (URI, bronchitis, pneumonia)
- A confirmation of COVID-19 will therefore be linked to a specific respiratory condition
- Examples: (allows tracking and payment)
 - COVID-19 pneumonia is J12.89. Other viral pneumonias B97.29
 - COVID-19 bronchitis is B97.29, other bronchitis
 B97.29
 - Exposure but disease ruled out Zo3.818
 - For symptoms: cough (Ro5), Shortness of breath (Ro6.02) and fever unspecified (R50.9)



Acts of kindness are good for the body

- According to the Mayo Clinic
 - When we participate in acts of kindness our body releases oxytocin, a hormone that helps regulate our social and emotional response
 - The more oxytocin released, the more generous, kind and peaceful you are likely to feel
 - Higher amounts of oxytocin is associated with less stress and better sleep



Thank you!

Waiting for the Term
Opening up

