

COVID-19 PANDEMIC REVIEW OF EPIDEMIOLOGY & INFECTION PREVENTION

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BEFORE STARTING....

- No disclosures.
- The information provided in this presentation is as per data available at the time of recording .
- Please keep in mind that data and recommendations is subject to change as information is rapidly changing throughout this pandemic.
- Interpretation of data and guidelines is also subject to change.

MAIN OBJECTIVES

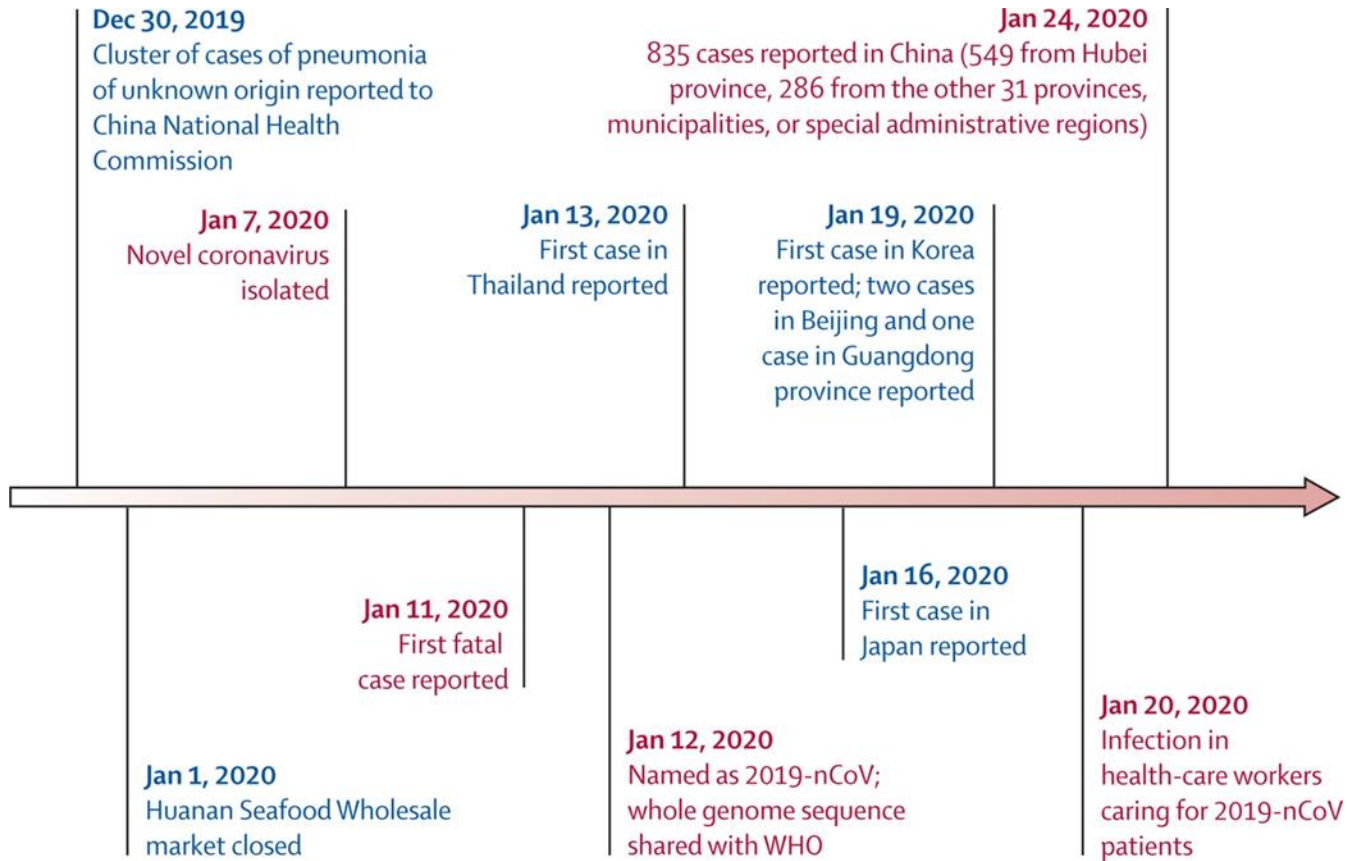


11/7/2020

- Objective 1: Understand the basic epidemiology and transmission dynamics of COVID-19 (SARS-COV-2) Pandemic
- Objective 2: Understand the screening of suspect COVID-19 and interpretation of PCR results
- Objective 3: Identify Strategies to reduce the spread of COVID-19 in hospital and clinical settings

INITIAL TIMELINE

1/17/2020



TIME LINE OF THE PANDEMIC:



1/17/2020

- Before arriving to the US, the virus spread through China and abroad
- Jan 17th-US airport screenings
- Jan 21st-First US case confirmed
- Jan 23rd-Wuhan locks down
- Jan 24th-First cases in Europe confirmed
- Jan 29th-First group of Americans return from China
- Jan 30th-WHO declares global health emergency and US reports first case of person-to-person transmission
- Jan 31st-US declares public health emergency (first quarantine order issued by the federal gov in over 50 years)
- Feb 2nd-First death outside China
- Feb 6th-First death in US (California)
- Feb 7th-Chinese Whistleblower doctor dies of illness
- Feb 11th-WHO announced formal name, COVID-19
- Feb 21st-CDC director of National Center for Immunization and Resp Diseases reports “Pandemic likely”
- Feb 23rd-Italy locks down as a dozen northern towns see outbreak
- Feb 26th-CDC reports community spread, confirming first US person to contract the virus despite not visiting a foreign country recently or coming into contact with an infected patient.
- Feb 28th-CDC flawed test kits; no expanded criteria for coronavirus testing

CONT. SPRING 2020



- March 3rd-US surpasses 100 cases
- March 11th-US travel ban on Europe and WHO declares worldwide pandemic
- March 13th-Trump declared the coronavirus pandemic a national emergency to secure disaster funding
- March 15th-US guidelines issued calling for 15 days to slow the spread (“Flatten the Curve”)
- March 17th-Trump evokes “Defense Production Act” to direct industry to produce critical equipment and report shows virus is stable on surfaces
- March 18th-CDC report shows all ages are at risk
- March 19th-US surpasses 10,000 cases
- March 24th-Tokyo Olympics postponed
- March 28th-CDC issues travel advisory to New York area
- April 1st-US surpasses 200,000 cases and topped 1,000 deaths in a single day for the first time
- April 2nd-More than 1Million confirmed cases worldwide
- April 3rd-CDC recommends use of face masks
- April 7th-US reports more than 2,000 deaths in a single day for the first time.
- April 8th-Whuan city lifts lockdown after 76 day lockdown
- April 11th-Worldwide deaths surpass 100,000
- April 14th-All 50 states in America report deaths
- April 16th-White House issues guidance to reopen states
- April 20th-States announce plans to reopen
- April 26th-CDC adds 6 new symptoms including loss of taste and smell to list of coronavirus symptoms
- April 28th-1 million confirmed cases in the US

CONT. SUMMER 2020



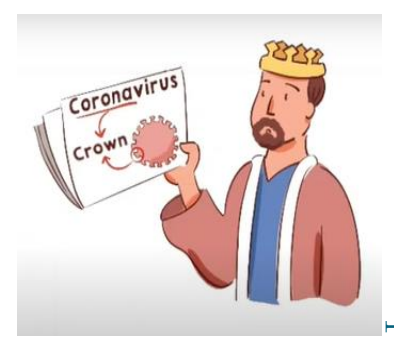
- May 7th-Experts advise against antibody tests (not diagnostic)
- May 9th-Multisystem inflammatory syndrome in children (MIS-C) linked to coronavirus
- May 11th –More than 15 states set to move forward with reopening procedures.
- May 14th-More than 10 million coronavirus tests conducted in US
- May 18th-The majority of states move forward with phased-in approaches that vary by county and city
- May 19th-the CDC publishes longer guidance 60 pg document for businesses, restaurants, schools and other establishments on how to reopen safely
- May 21st-More than 5million cases worldwide and US accounts for nearly 1/3rd of them
- May 22nd. CDC reports a third of cases (35%) are asymptomatic
- May 25th-Memorial Day gatherings
- May 27th-More than 100,000 deaths in the US
- May 29th-US ends relationship with WHO as Trump Administration withdraws financial support
- May 31st-Protests against police brutality raise concern of virus spreading
- June 6th-Large UK study on Hydroxychloroquine concludes “no beneficial effect” in patients hospitalized with COVID-10
- June 9th-US officially in Recession after economy peaked in Feb; US “flattens the curve” averaging about 20K new cases daily. States reopening after weeks of lockdowns.
- June 11th-2 million confirmed cases in the US and more than 100,000 Americans had died
- July 4th-With easing measures, more Americans begin to venture outside for celebrations
- July 22nd-US cases surge in Western and Southern states averaging more than 65K cases daily; across the country public health officials warn that more young people were testing positive and helping drive the increase of infections

CONT. FALL 2020



- Sept 12th-the summer peak stabilized and cases were down to ~34K average new cases daily, according to Johns Hopkins.
- Sept-new hotspots were spiking in rural MidWest as many US communities started returning to schools and political rallies “kicked into high gear”
- Sept 22nd-US deaths surpass 200,000 deaths ☹️
- Oct-European countries start seeing cases surge in early October, ahead of current US surge of cases; by middle of the month the US had surpasses more than 8 million infections and over 210K deaths. The nation is averaging more than 53K new cases per day.
- Nov-States are reporting surges across all regions of the US.

CORONAVIRUSES



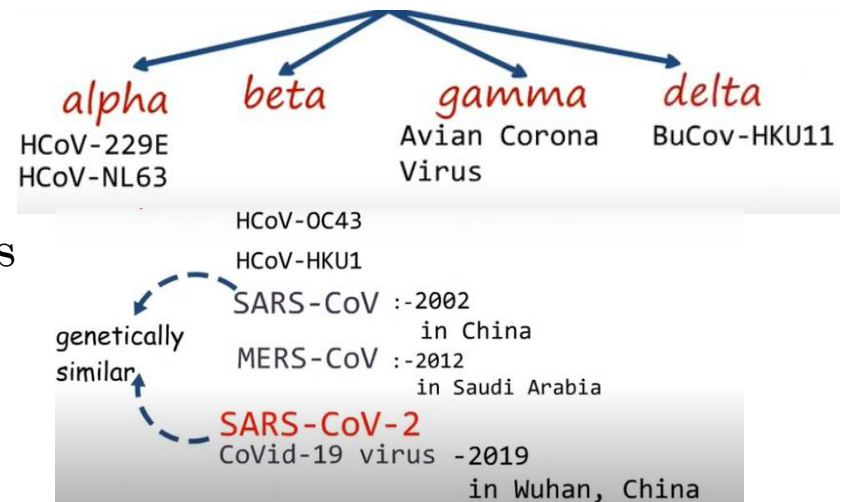
11/7/2020

- Named for the **crown-like spike proteins** on surface
- Largest among RNA viruses
- Enveloped + **sense RNA virus**; RNA can be directly translated to viral proteins (similar to mRNA)

- 4 subtypes:

- Alpha
- Beta
- Gamma
- Delta

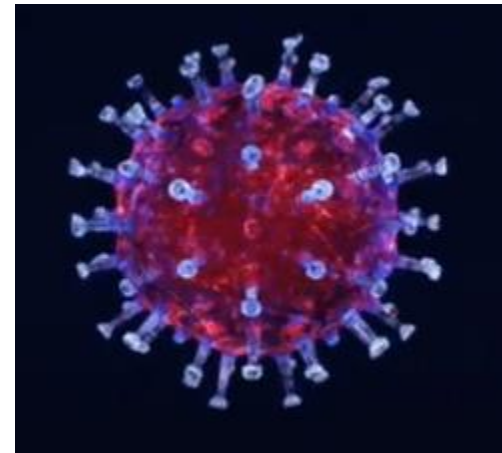
Can infect humans



- SARS-CoV, MERS-CoV, & SARS CoV-2 are all betas

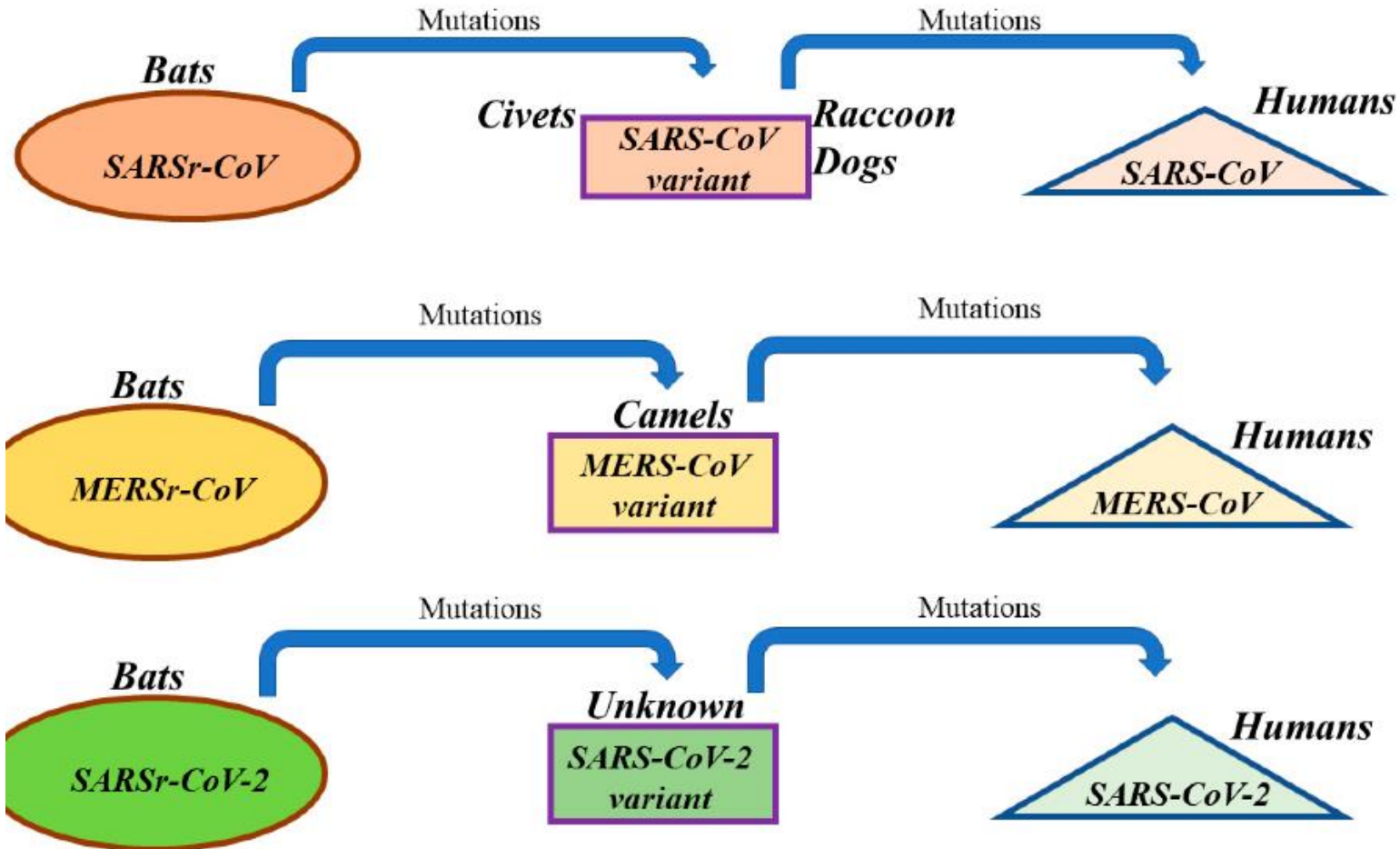
SARS-CoV-2

- Name of virus: **SARS CoV-2**
 - Severe Acute Respiratory Syndrome Coronavirus 2
- Name of disease: **COVID-19**
 - Corona Virus Disease, 1st case reported in **2019**
- Initially referred to as 2019 novel Coronavirus (2019-nCoV)
- Order: Nidoviridae
- Family: Coronaviridae
- Subfamily: Orthocoronavirinae
- Genus: Betacoronavirus
- Subgenus: Sarbecovirus



ZOONOSIS: PATHWAY FROM ANIMALS TO HUMANS

11/7/2020



https://www.bing.com/images/search?view=detailv2&ccid=NT2CSK&id=ACBD9AB45C9A358FD33E3AB04876FD90FC467113&thid=OIP.NT2CSK&imgu=JJE34Jc9ngmAHaEW&mediaurl=https%3e%2f%2fwww.mdpi.com%2fpathogens%2fpathogens-09-00186%2farticle_deploy%2fhtml%2fimages%2fpathogens-09-00186-g002.png&expw=3322&q=sars+cov+2+world&simid=608001553711566621&ck=14E30C79E70613C37496FA532DB70B6C&selectedIndex=61&adit=strict&FORM=IRPRST

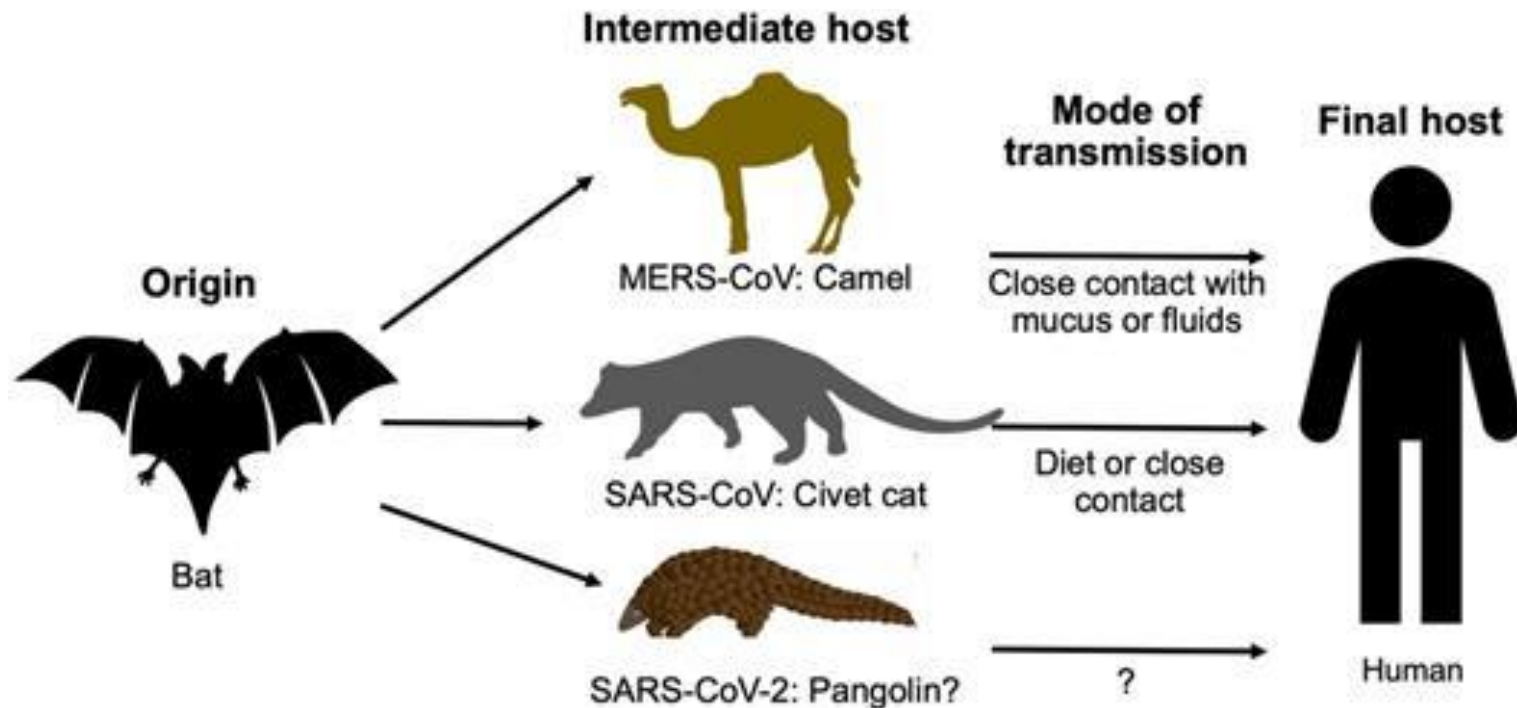
*Bats serve as the source of many human viral diseases: Ebola virus, rabies, Nipah and Hendra virus, Marburg virus, influenza A virus, and emerging coronaviruses.

<https://www.nature.com/articles/s41579-020-0394-z>

PANGOLIN AS INTERMEDIATE?



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SARS-COV2 (COVID-19) DETAILS:

- **Mode of transmission:** primarily droplet-mediated
- **Incubation period:** 2-14 days (symptom development 5-7 days)
- **Symptoms:** expanded from fever and respiratory to GI, loss of taste/smell, and expanding (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>)
- **High risk populations:** 65 or older, nursing/long-term care residents, comorbidities (i.e. heart conditions, immunocompromised, severe obesity (BMI of 40 or higher), diabetes, chronic lung, kidney or liver disease, or moderate to severe asthma)
- **Asymptomatic shedding phase:** timeframe under investigation
- **Immunity:** 3 months, still under investigation (serology studies underway)
- **Sites of infection:** multi-system
 - Pulmonary, GI, progressive illness includes hyper-inflammatory phase that may cause multi-organ system failure, multisystem inflammatory syndrome (MIS-C)-pediatric
- **Treatment:** No vaccine currently, supportive care and alternative drug trials
- **Current Status:** **Widespread and sustained transmission**

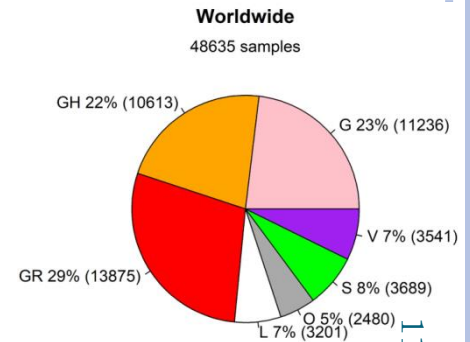
11/7/2020



COVID-19 MUTATIONS

- RNA viruses have high mutation rates because their replication enzymes are prone to errors when making new virus copies.
 - However, coronaviruses have been shown to have lower mutation rates than HIV or Influenza.
- A mutation is a change in the genetic sequence
 - Only a fraction of all mutations will be advantageous
 - Most will be neutral or harmful to the virus and will not persist in the population
- Functional consequences of these genetic mutations are important:
 - Transmissibility (i.e. change in an amino acid of the spike protein)
 - Virulence ...**TBD**
- Persistence of the mutated strain will be impacted by public health efforts in the population
- Evolution of COVID-19 strains is under investigation...

COVID-19 STRAINS



11/7/2020

- Vast variability of SARS-COV-2 specimens across the globe by geographic and genomic specificity
- Review of >48K completed genome sequences available through the GISAID (Global Initiative of Sharing All Influenza Data) consortium
- It is still unclear if different fatality rates or speed of transmission in observed countries may be the consequences of clade differences
- 6 strains identified:
 - **L strain**-original strain that originated in Wuhan Dec 2019, slowly disappearing and accounts for only 7% of cases (mostly in Asia)
 - **S strain**-first mutation off the original strain first appearing in early 2020 and accounts for 8% of cases across the globe (mostly in the Americas)
 - **V strain**- first appeared in mid-Jan and only accounts for 7% of cases (mostly in Europe)
 - **G strain**-by far the most widespread of the virus; major mutations into the GR and GH strains at the end of Feb 2020 (most prevalent strain in Europe and Africa). Accounts for 74% of all the gene sequences of the RNA polymerase and spike proteins of the virus; likely facilitating the spread of the virus.
 - **GR strain**-most common accounting for 29% of cases in the world (mostly found in South America and Europe). The spike protein mutation allows the virus to more readily enter human cells.
 - **GH strain**-if you live in the US and have COVID-19, you most likely have this strain. Currently, the most prevalent strain in North America.

Fig. 6 SARS-CoV-2 introductions to Europe and the United States.

Successful (solid line) vs. “dead-end” (dotted line) introductions

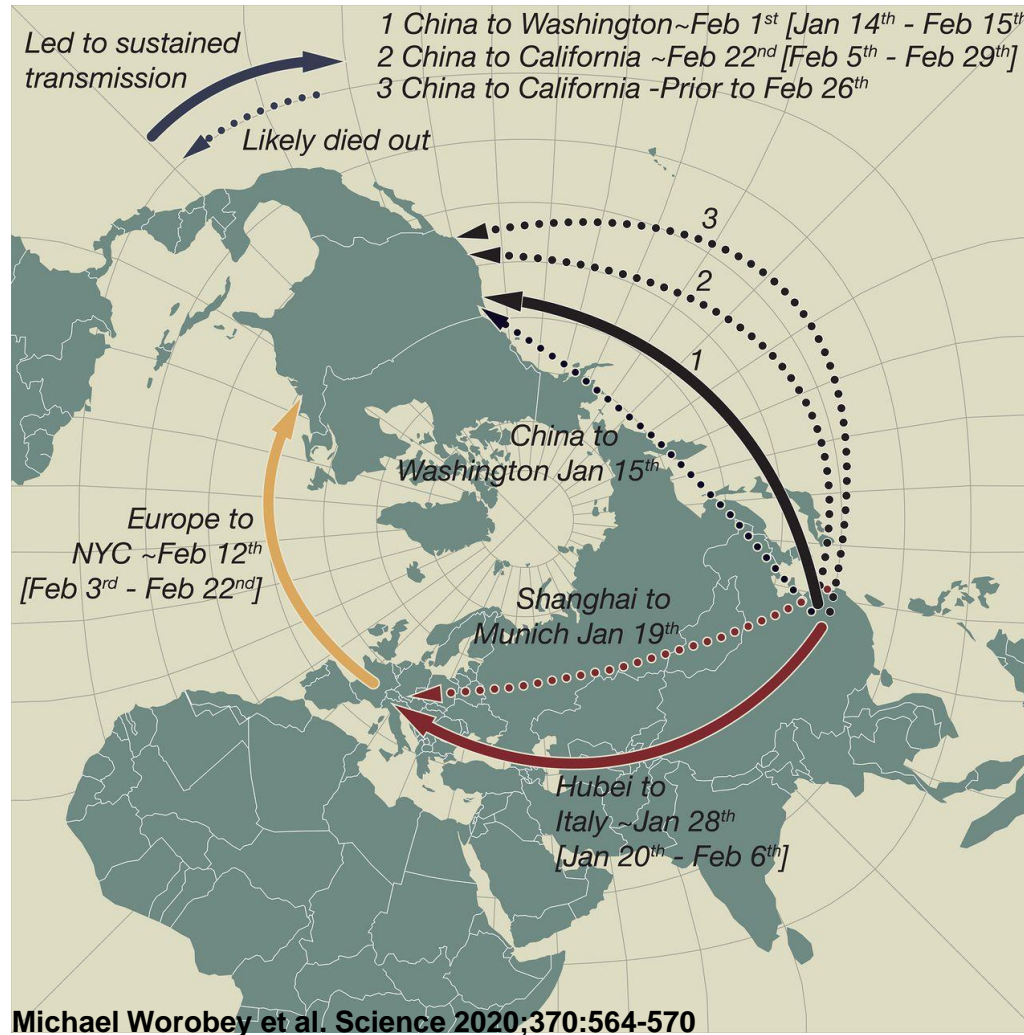
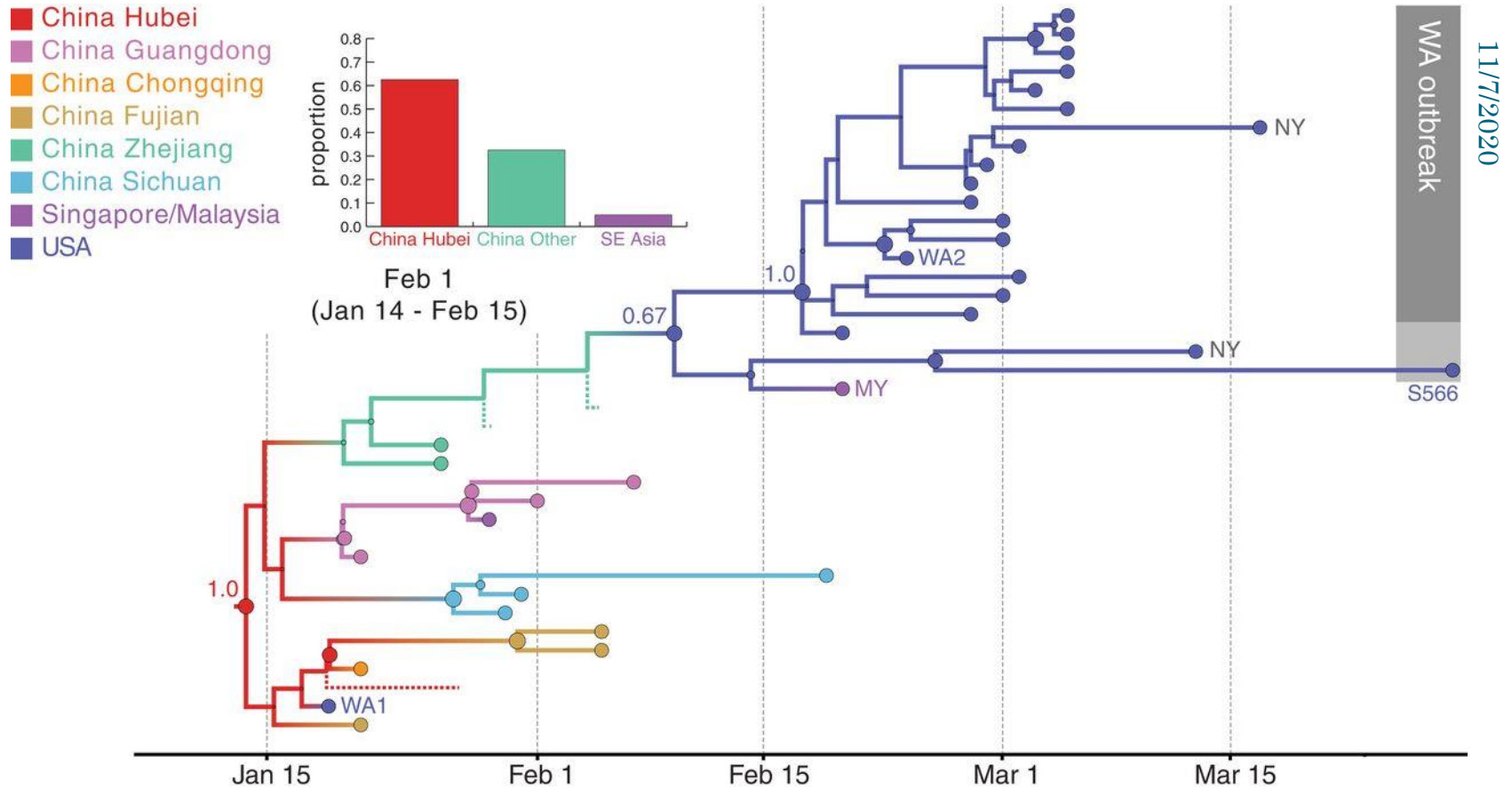


Fig. 4 Hypothesis of SARS-CoV-2 entry into Washington state.

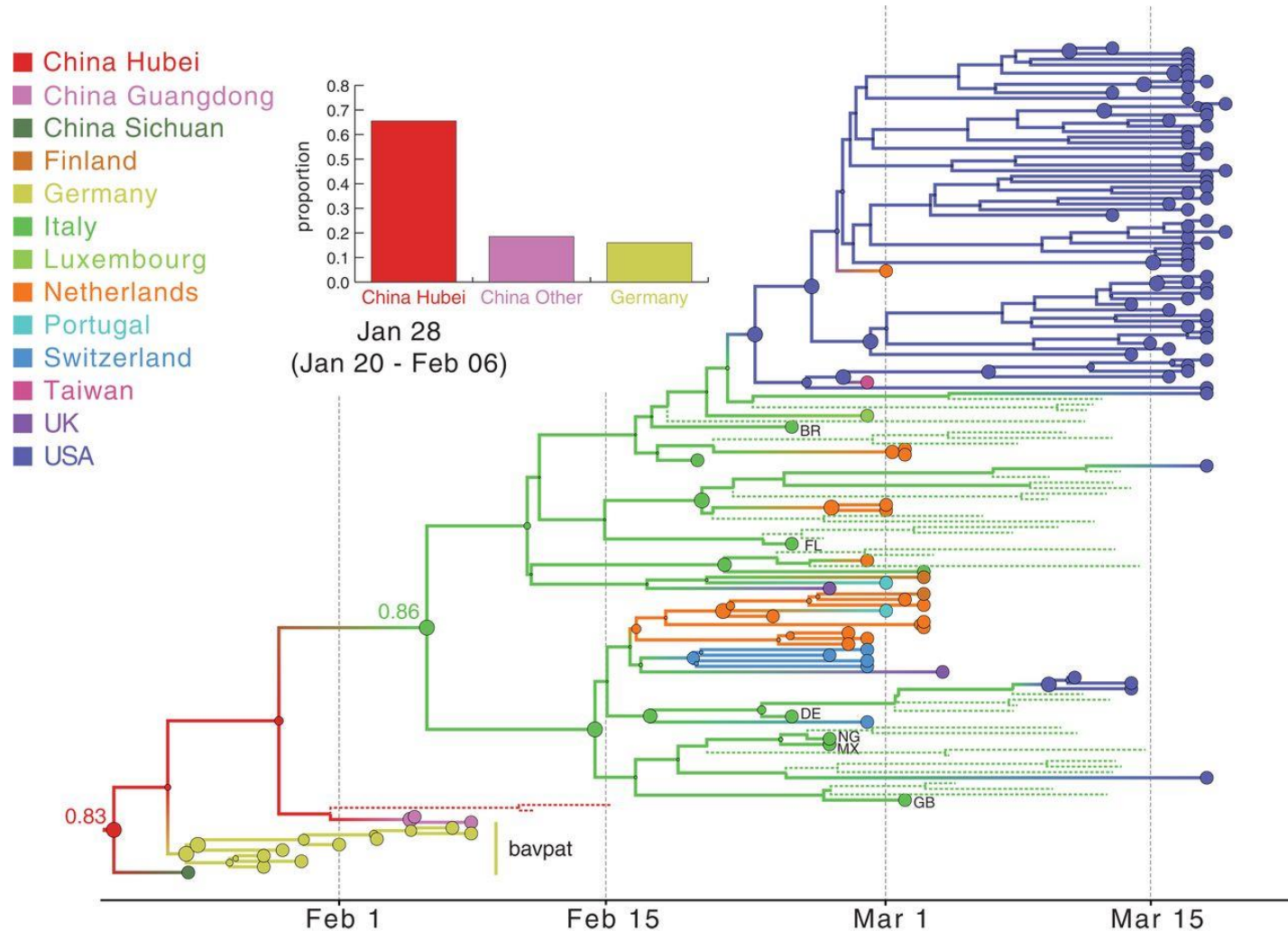
Example of “Tree” that depicts evolutionary relationships inferred between US introduction and circulating global COVID strains.



Michael Worobey et al. Science 2020;370:564-570

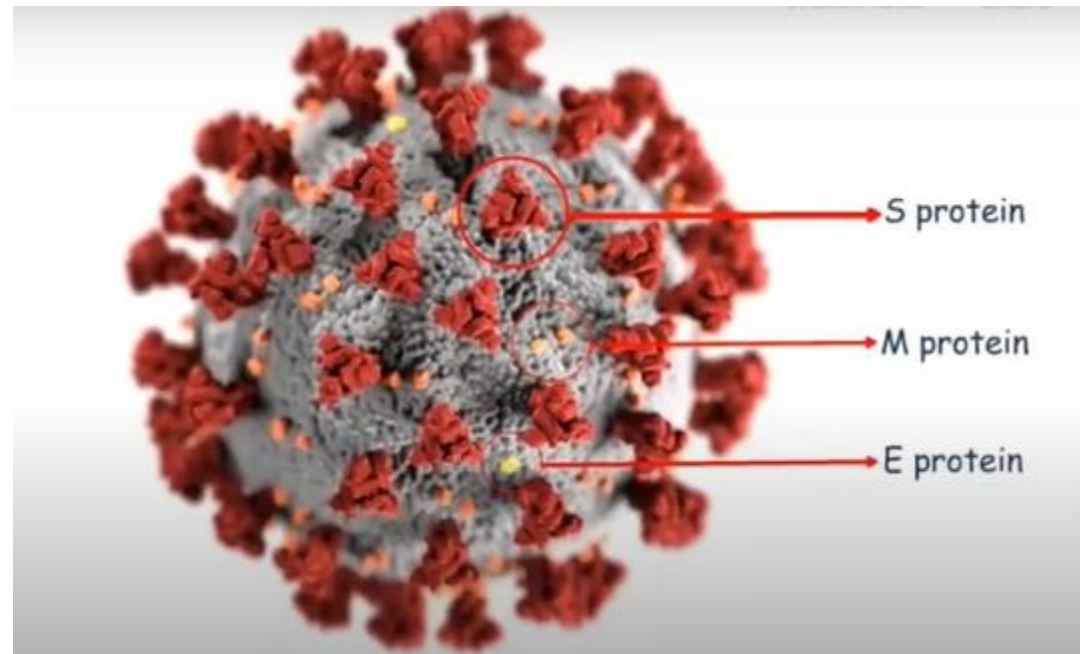
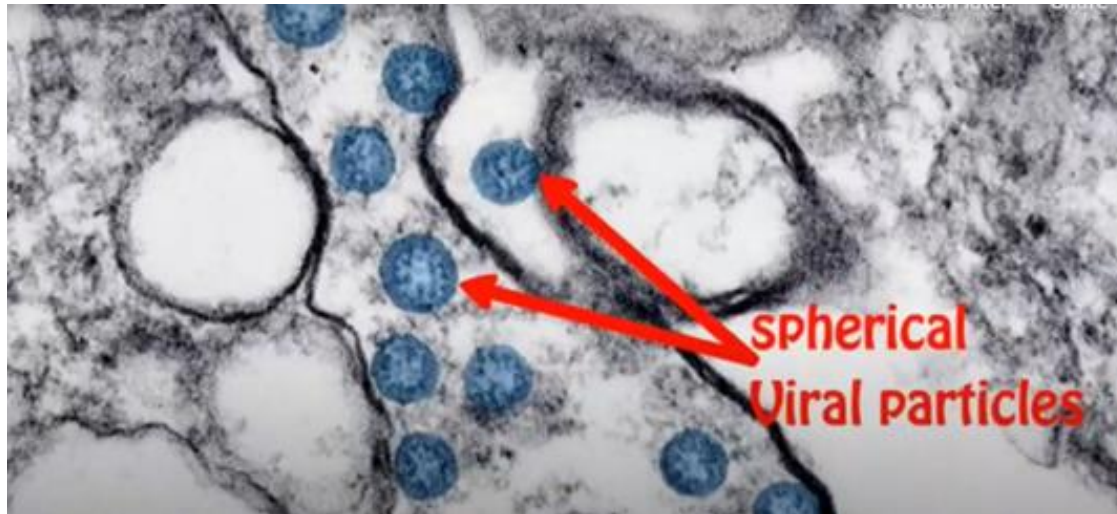
Fig. 5 MCC tree of SARS-CoV-2 entry into Europe.

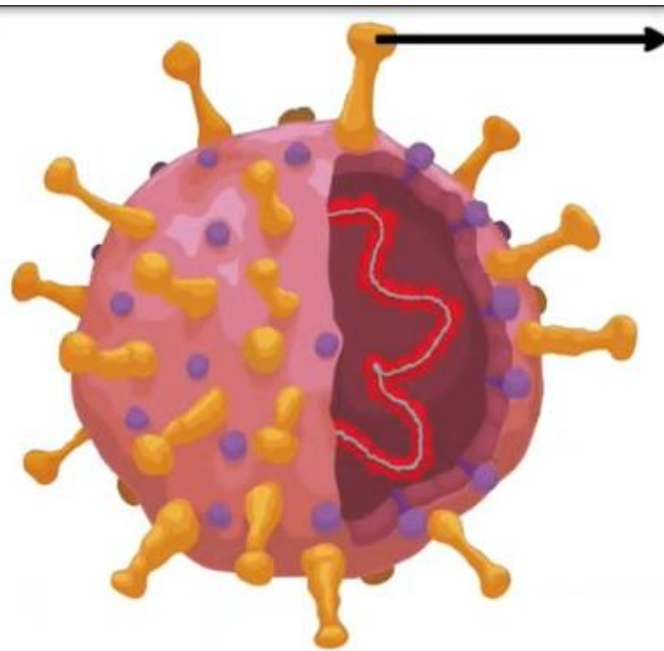
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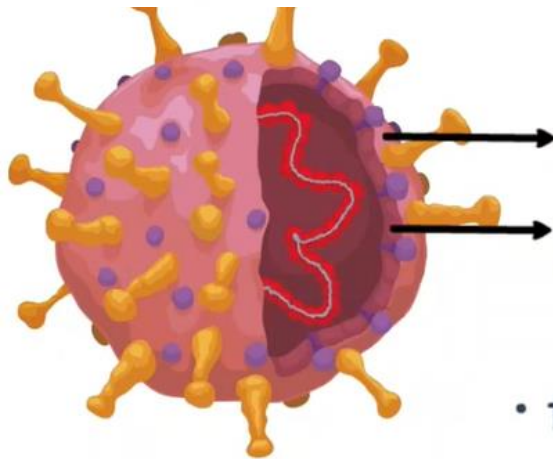
MOLECULAR STRUCTURE OF SARS-CoV-2





Spike protein (S protein)

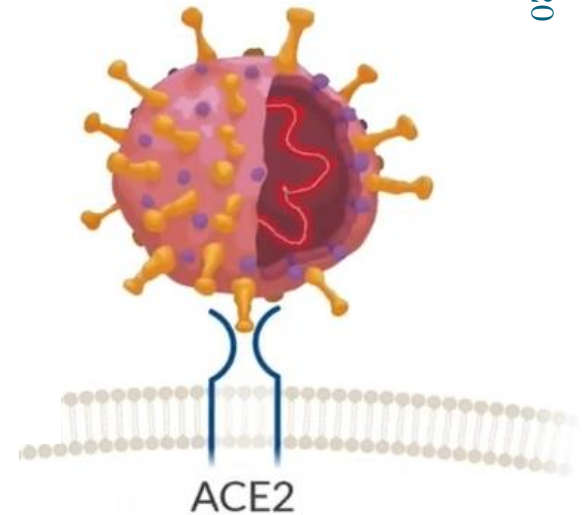
- gives crown like appearance
- bind to ACE-2 receptors in alveoli of lungs
- helps in viral entry into host cell



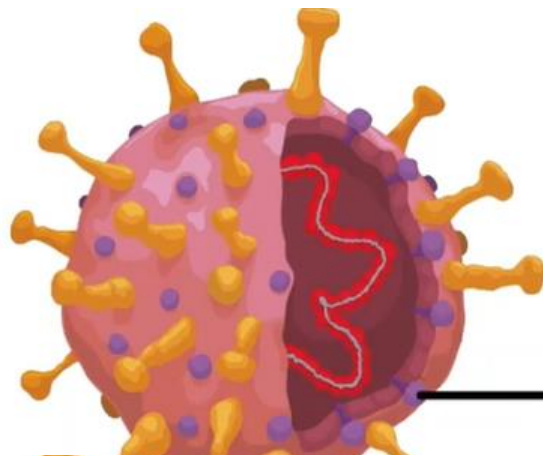
Envelope protein (E protein)

Membrane protein (M protein)

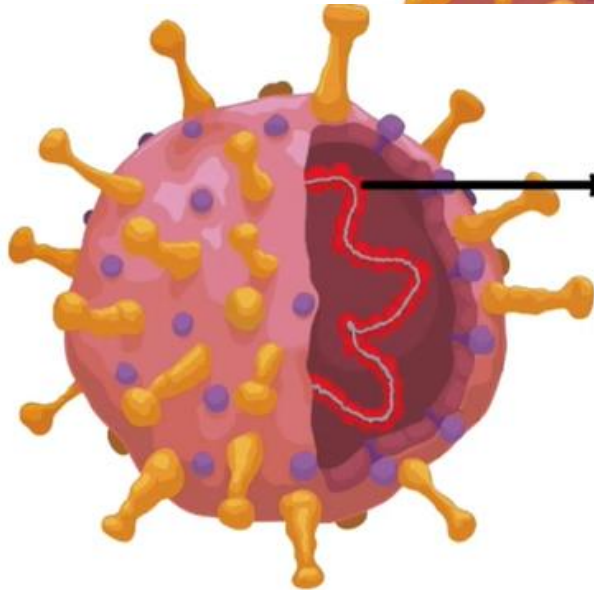
- forms the envelope



2

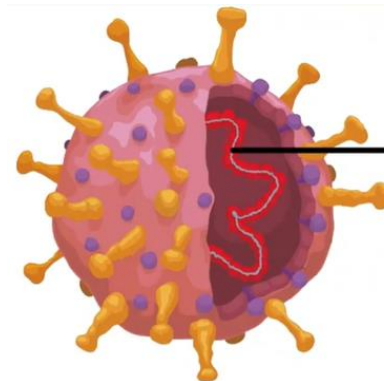


Hemagglutinin-Esterase



Nucleocapsid protein

- Ribonucleoprotein
- Bound to nucleic acid
- Helps in viral assembly



RNA

- single stranded
- positive sense RNA

NEW RECEPTOR: NEUROPILIN-1



11/7/2020

- Unlike other coronaviruses, which cause common colds and mild respiratory symptoms, SARS-CoV-2, is highly infective and transmissible.
- Major Question: why does SARS-CoV-2 readily infects organs outside of the respiratory system, such as the brain and heart?
- To infect humans, SARS-CoV-2 must first attach to the surface of human cells that line the respiratory or intestinal tracts. Once attached, the virus invades the cell then replicates multiple copies of itself. The replicated viruses are then released leading to the transmission of SARS-CoV-2.
- Unlike other respiratory viruses, SARS-CoV-2 also infects the upper respiratory system including the nasal mucosa, and consequently spreads rapidly.
- **“If you think of ACE2 as a door lock to enter the cell, then neuropilin-1 could be a factor that directs the virus to the door. ACE2 is expressed at very low levels in most cells. Thus, it is not easy for the virus to find doors to enter. Other factors such as neuropilin-1 might help the virus finding its door.”**

<https://www.genengnews.com/news/sars-cov-2-uses-a-second-receptor-neuropilin-1-to-infect-human-cells/>



COVID STATUS: FROM THE GLOBE TO THE MITTEN

EUROPE IS SURGING...

- "The rapid rise of these variants in Europe highlights the importance of genomic surveillance of the SARS-CoV-2 pandemic... **it is imperative to understand whether novel variants impact the severity of the disease.**"

Coronavirus strain from Spain likely source for most of Europe's spread

It was first identified among farm workers in the eastern Spanish regions of Aragon and Catalonia.

By REUTERS OCTOBER 31, 2020 20:15



USA COVID SURGING IN THE NEWS..

Coronavirus Cases Are Now Rising In Almost Every State In The US

The difference between the previous spikes in cases and the one we're in now? COVID-19 cases are now rising almost everywhere.

It's not just the US: Virus cases surging worldwide. Find out where, why and how fast.

Will US COVID-19 mortality catch up to surging cases?

Experts explained that the number of excess deaths will likely rise again this winter, but will probably not reach levels seen this spring as older people take greater care to stay safe and outbreaks ...

COVID-19 cases are surging in the Midwest and western states as the US enters what is expected to be a brutal fall/winter wave of the pandemic

Quarantine fatigue: Why some of us have stopped being vigilant and how to overcome it

RESOURCE DEPLETION: NOT ENOUGH FRONTLINE NURSES

Hospitals competing for nurses as US coronavirus cases surge

U.S. hospitals are scrambling to hire more nurses as the coronavirus pandemic surges, leading to stiff competition and increased costs

By **TAMMY WEBBER** Associated Press
November 2, 2020 12:28 PM • 5 min read



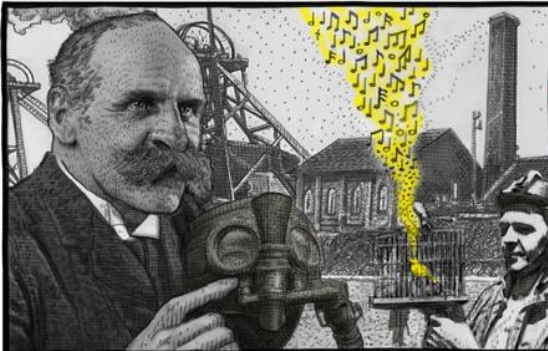


CANARY IN THE COAL MINE

- Increased cases, % positivity, hospitalizations....
- The “Canary” of COVID second surge:
 - Increased community transmission
 - Increased hospital capacity
 - Increased (preventable) deaths
- Signs pointing to our need to take this seriously!



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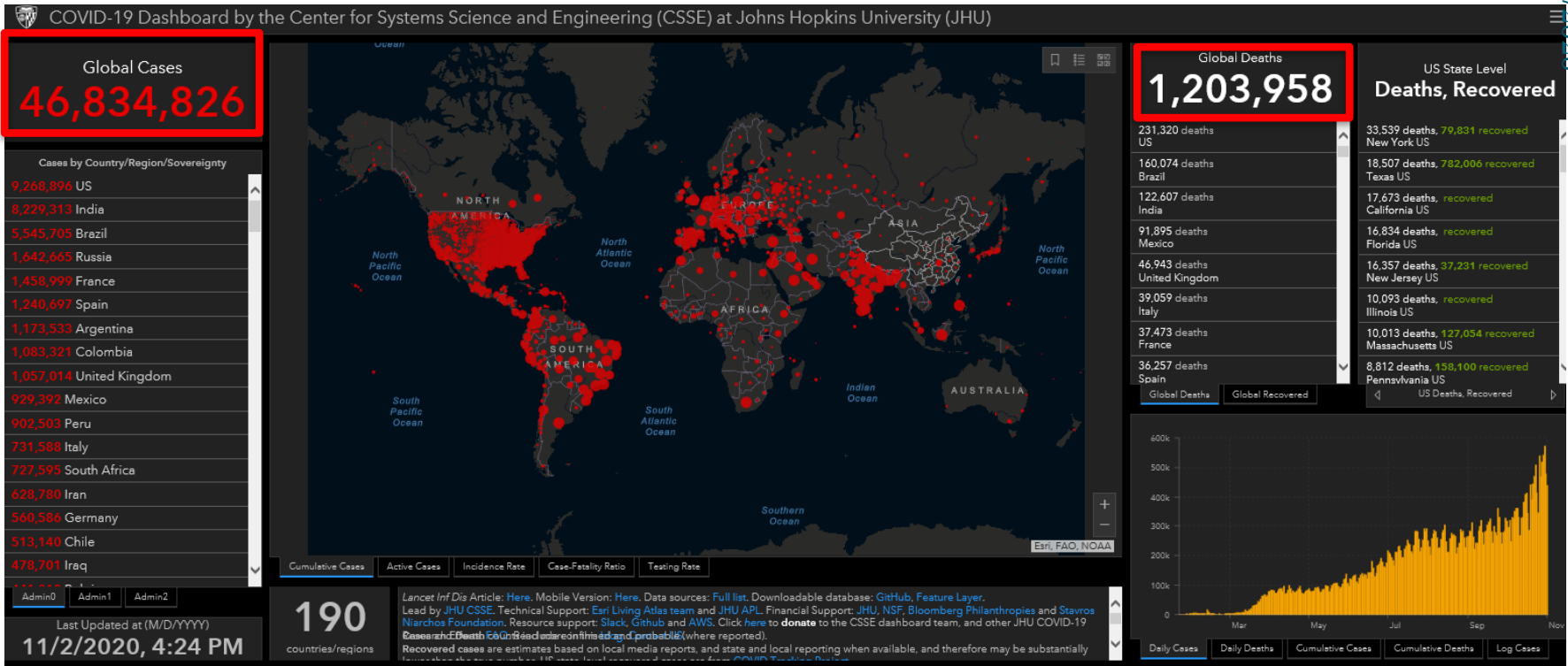
canary poet. “canary in the coalmine” professorpotts.com

		
<p>The physiologist J.S. Haldane self-experimented with gasses, he realised that miners were dying from undetected carbon monoxide. In 1911 he proposed using canaries to detect the gas, a tradition ended in 1986.</p>	<p>Small with a faster oxygen-burning metabolism, canaries become agitated and faint well before humans.</p>	<p>The canary in the coalmine is a warning of the presence of danger: the siren that announces the end is nigh.</p>

https://www.bing.com/images/search?view=detailV2&ccid=qgbykr0&id=B5899348485B94F1BE1B06F676963E1B3A1D5EA&thid=OIP_qbykr0S-Qy1UyCjUjRWAIHaDQ&mediaurl=https%3a%2f%2fwww.professorpotts.com%2fwp-content%2fuploads%2f2018%2f12%2fcanary-in-the-coal-mine.jpg&exp=956&q=canary+in+a+coal+mine&simid=90804311611913252&ck=B63F8A2D000CA32E77DFA1800C6488&w=1000&h=1000&fiedindex=229&ad=seric&FORM=IRPRST

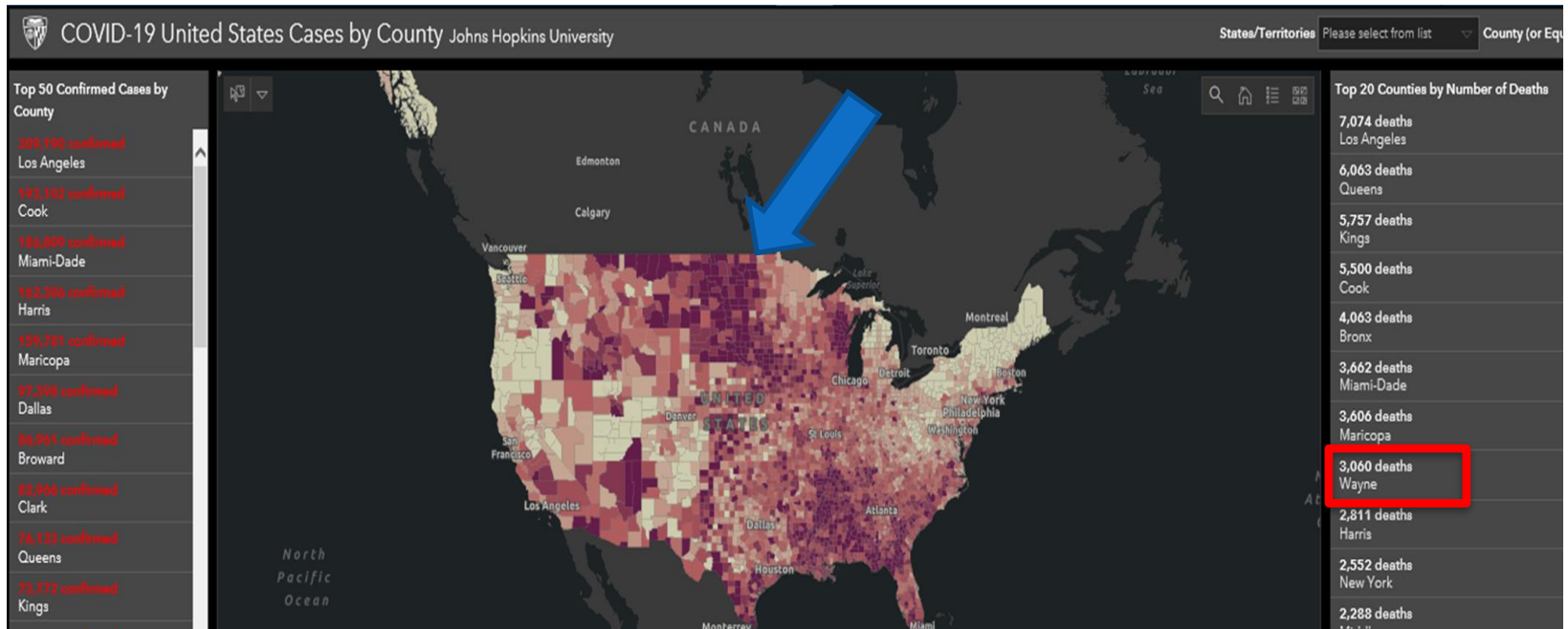
JOHNS HOPKINS LIVE COVID-19 MAP

11/7/2020



JOHNS HOPKINS CONT.

11/7/2020



CDC COVID-19 STATISTICS

1/17/2020



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People™

Coronavirus Disease 2019 (COVID-19)

CDC COVID Data Tracker

Maps, charts, and data provided by the CDC

[Case Trends](#) ▾ | [Laboratory](#) ▾ | [Community Impact](#) ▾ | [Unique Populations](#) ▾ | [COVID-19 Home](#)

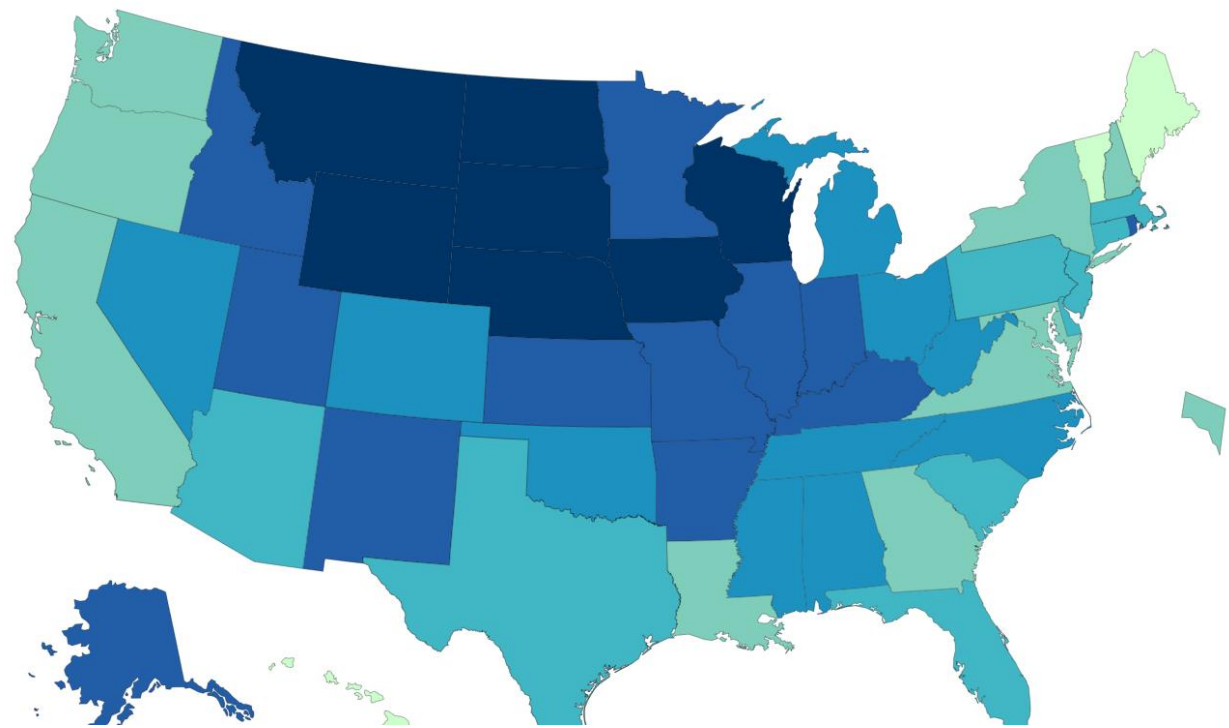
[Cases and Deaths by State](#) | [US and State Trends](#) | [Compare State Trends](#) | [Demographics](#) | [Trends by Population Factors](#) | [Cases and Deaths by County](#) | [Forecasting](#) | [Trends in ED Visits](#)

CDC US MAP: CASE RATE IN LAST 7 DAYS BY STATE

TOTAL CASES 9,182,628 <small>+77,398 New Cases</small>	CASES IN LAST 7 DAYS 565,607	TOTAL DEATHS 230,383 <small>+451 New Deaths</small>
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CDC | Updated: Nov 2 2020 12:23PM

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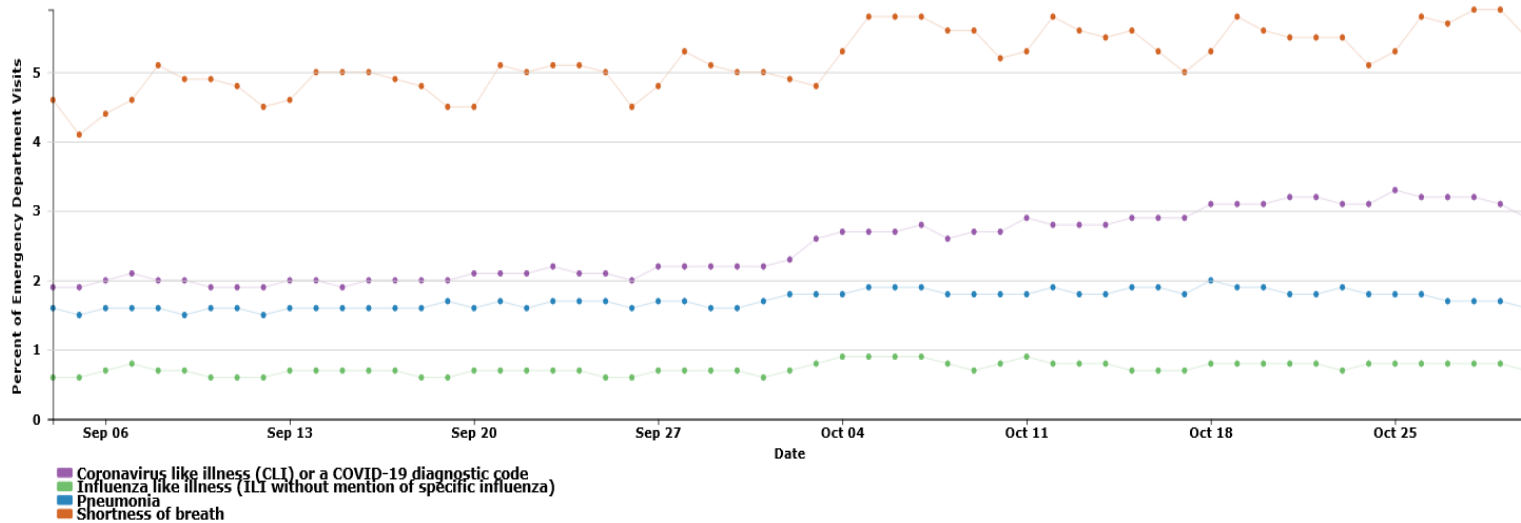
https://covid.cdc.gov/covid-data-tracker/#cases_casesinlast7days



ED VISITS BY SYNDROME

11/7/2020

Percentage of ED visits by syndrome in United States: COVID-19-Like Illness, Shortness of Breath, Pneumonia, and Influenza-Like Illness



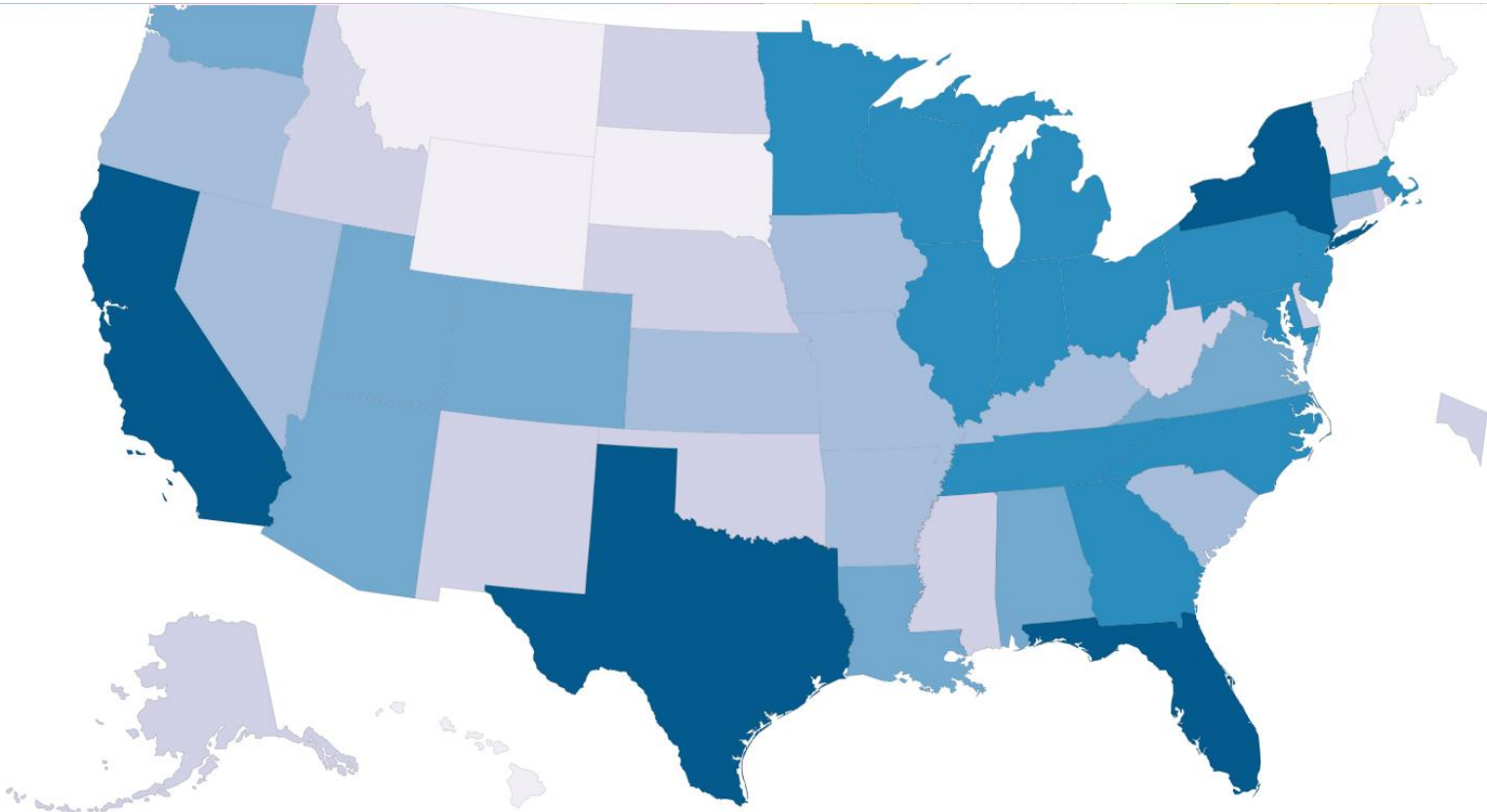
<https://covid.cdc.gov/covid-data-tracker/#ed-visits>

NATIONAL COVID-19 TESTING

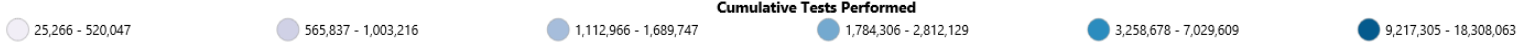
United States Laboratory Testing



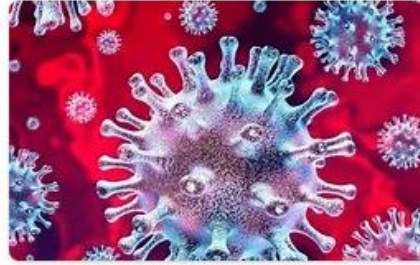
11/7/2020



https://covid.cdc.gov/covid-data-tracker/#testing_testsperformed



MICHIGAN



Michigan Reports 6,709 New Coronavirus Cases Over Past 2 Days

Michigan has added more than 6,700 new cases of the coronavirus since Saturday, according to state ...

YAHOO!News · 1d

11/7/2020

- Overall state data available on MDHHS
- Regional data (ex: Wayne County-Regions 2S)
- Data collection and interpretation is crucial:
 - Incident cases (prevalence)
 - Percent positivity
 - Patient acuity (hospitalizations/critical care beds)
 - Deaths
- Nuanced
- Vigilance is needed
- Ongoing studies

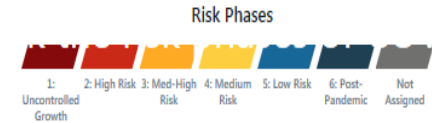
MICHIGAN'S "SAFE START PLAN"

1/17/2020

	1 Uncontrolled growth	2 Persistent spread	3 Flattening	4 Improving	5 Containing	6 Post-pandemic
What's happening with the disease?	Increasing number of new cases every day, likely to overwhelm the health system	Continue to see high case levels with concern about health system capacity	Case growth is gradually declining	Cases, hospitalizations and deaths are clearly declining	Continued case and death rate improvements and outbreaks can be quickly contained	Community spread not expected to return
What do we need to do to stay safe?	Stay Home, Stay Safe: Strict social distancing, travel restrictions, face coverings, hygiene best practices, remote work	Stay Home, Stay Safe: Strict social distancing, travel reduction, face coverings, hygiene best practices, remote work	Safer at Home: Continued distancing, increased face coverings No gatherings	Safer at Home: Continued distancing, face coverings, safe workplace practices Small gatherings	Stay Safe: Adherence to new guidelines. Continued distancing, coverings, mitigated workplaces	Sufficient community immunity and availability of treatment
What work can we do? (Examples)	Critical infrastructure <ul style="list-style-type: none"> • First responders • Health care workers • Critical manufacturing • Food and agriculture • Essential retail (e.g., grocery) • Transportation 	Critical infrastructure Additional types of recreation allowed	Specified lower-risk businesses with strict workplace safety measures <ul style="list-style-type: none"> • Construction • Manufacturing • Real estate • Outdoor work 	Additional lower-risk businesses with strict safety measures <ul style="list-style-type: none"> • Other retail, with capacity limits • Offices, but telework required if possible 	Most businesses, with strict mitigation measures <ul style="list-style-type: none"> • Restaurants / bars • K-12 and higher ed. (live instruction) • Travel 	All businesses Events and gatherings of all sizes with new safety guidance and procedures Social distancing rules are relaxed and large events are permitted
What factors determine progression to next phase?	Analysis shows epidemic growth rates slowing Hospital and treatment capacity built, alternative care facilities established Infrastructure for crisis response and data systems to monitor progression are in place	Cases, deaths decline for extended period Monitor impact on vulnerable populations Sufficient health system capacity in place Improved testing, contact tracing and containment capacity	Cases and deaths decline more sharply, percent positivity decreasing Healthcare system capacity continues to strengthen Robust testing, contact tracing and containment protocols in place	Cases and deaths at low absolute rates per capita Health system capacity is very strong Robust testing, contact tracing and containment protocols in place	High uptake of an effective therapy or vaccine	

Note: This framing is being updated and refined as additional guidance from CDC and public health experts becomes available

It is also possible to move backwards if risk increases and if we stop adhering to safe practices



[Other State of Michigan coronavirus resources](#)

Select region or county...



MDHHS RESOURCES:

[HTTPS://WWW.MICHIGAN.GOV/CORONAVIRUS/](https://www.michigan.gov/coronavirus/)

1/17/2020

Michigan.gov

FAQ ALTERNATE LANGUAGES HOME MDHHS Q SEARCH

Coronavirus MI SAFE START CONTAIN COVID RESOURCES PRESS RELEASES DONATE VIDEO UPDATES

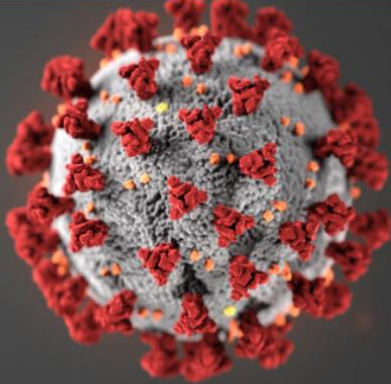
LEARN ABOUT THE OCTOBER 29 EPIDEMIC ORDER

Questions About COVID-19?

Visit our [Frequently Asked Questions page](#)
Our most commonly answered questions can be found there, and are updated often.

Call the COVID-19 Hotline at 888-535-6136.
Email COVID19@michigan.gov.

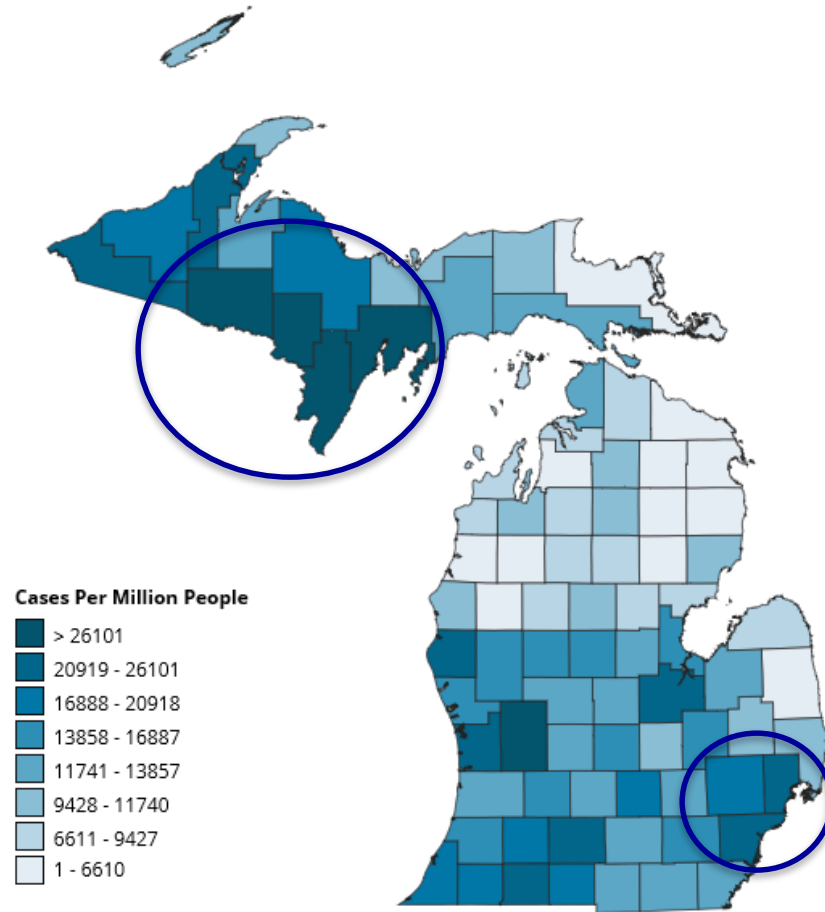
NEW: MDHHS EPIDEMIC ORDERS



DON'T BRING COVID HOME. GET TESTED.

FIND A TEST SITE

MDHHS MAP



Total Confirmed Cases

187,995

Total COVID-19 Deaths

7,400

Daily Confirmed Cases

3,106

Daily COVID-19 Deaths

43*

*The deaths announced today includes 17 deaths identified during a Vital Records review. See cumulative data page for more information.

11/03/2020

[SEE CUMULATIVE DATA](#)



COVID-19 SURVEILLANCE DEFINITIONS

11/7/2020

Confirmed

- Positive molecular result (e.g. RT-PCR, rapid molecular)
- Includes symptomatic and asymptomatic individuals

Probable

- Positive antigen result; or
- Meet clinical criteria AND close contact with a confirmed or probable case

Michigan		
Tuesday, November 3, 2020		
Michigan (Statewide) Case Fatality Rate		
		3.9%
Current Totals		
Case Status	Cases	Deaths
Confirmed	187,995	7,400
Probable	19,768	361
Total	207,763	7,761
Laboratory Testing		
Test Type	Tests Performed	
Diagnostic	5,092,680	
Serology	332,703	
Total	5,425,383	

https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/positionstatement2020/Interim-20-ID-02_COVID-19.pdf

New: Rapid Point of Care (ANTIGEN) tests that can be used when prevalence is high in the community.



MI EPI CURVE

Confirmed Cases

Deaths

View Table

Select Preparedness Region:

All

Select County:

All

Cases are shown by onset date or by lab specimen collection date if onset date was unavailable. Deaths are shown by date of death or date of last status update if date of death was unavailable. Tracking of probable cases and deaths did not begin until April 5, 2020, therefore only probable cases referred for investigation on or after April 5, 2020 are displayed (onset may have been prior).

Notes: FCI indicates federal correctional institute. MDOC indicates Michigan Department of Corrections.

Daily Cases by Status

The number of daily confirmed cases represent the total number of people who had a positive diagnostic test for COVID-19 by the date of the onset of their symptoms.

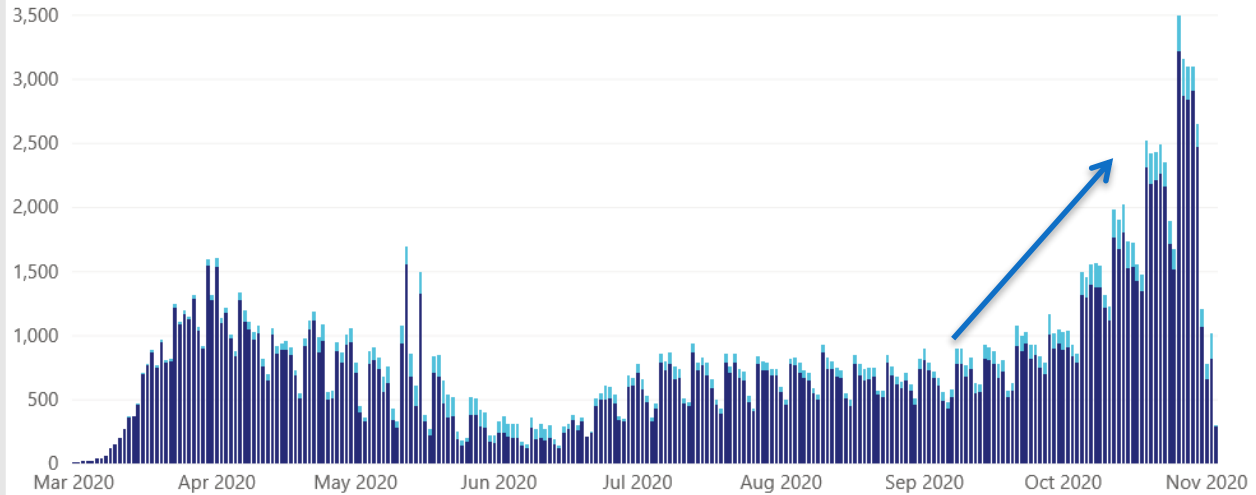
Filter by Date:

3/1/2020

11/3/2020

Cases by Date of Onset

Case Status ● Confirmed ● Probable



MI DEATHS

Confirmed Cases

Deaths

View Table

Select Preparedness Region:

All

Select County:

All

Cases are shown by onset date or by lab specimen collection date if onset date was unavailable. Deaths are shown by date of death or date of last status update if date of death was unavailable. Tracking of probable cases and deaths did not begin until April 5, 2020, therefore only probable cases referred for investigation on or after April 5, 2020 are displayed (onset may have been prior).

Notes: FCI indicates federal correctional institute. MDOC indicates Michigan Department of Corrections.

Daily Deaths by Status

Confirmed deaths include individuals who had a confirmed COVID-19 infection and are classified as deceased by the case investigation, have COVID-19 indicated as a cause of death on their death certificate, or who die within 30 days of infection and their manner of death is listed as natural. Data are shown by the date of death.

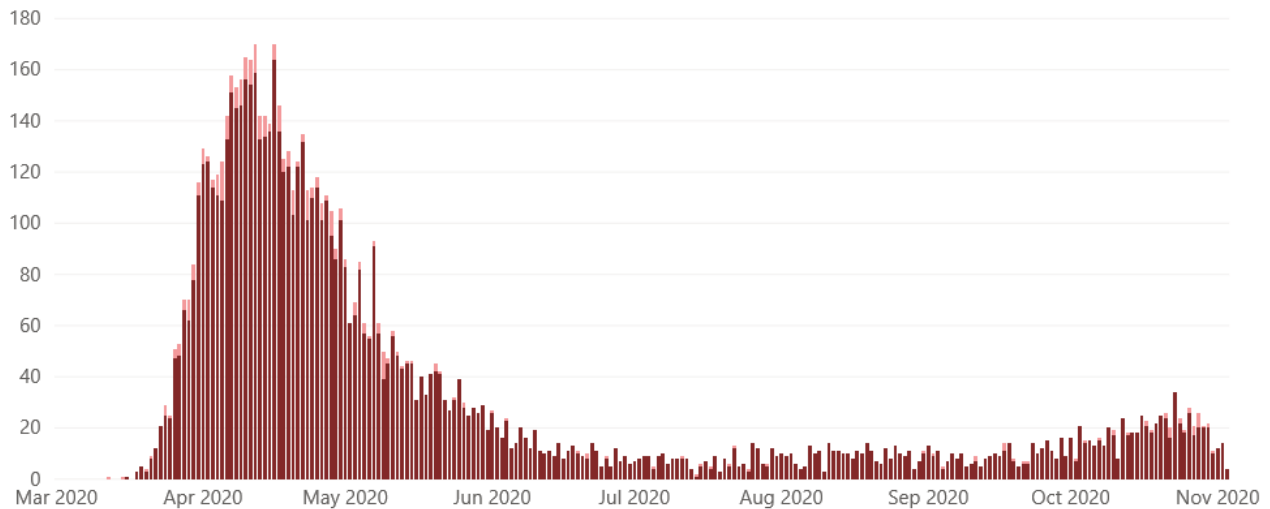
Filter by Date:

3/1/2020

11/3/2020

Deaths by Date of Death

Case Status ● Confirmed ● Probable



MI CUMULATIVE DATA

11/7/2020

Cumulative Confirmed Cases and Deaths among Confirmed Cases

Cumulative cases represent the total number of people who had a positive diagnostic test for COVID-19. Cases are shown by the date of onset of symptoms. Cumulative Deaths represent the total number of people who had a confirmed COVID-19 infection and are classified as deceased by the case investigation, have COVID-19 indicated as a cause of death on their death certificate, or who die within 30 days of infection and their manner of death is listed as natural. Deaths are shown by date of death.

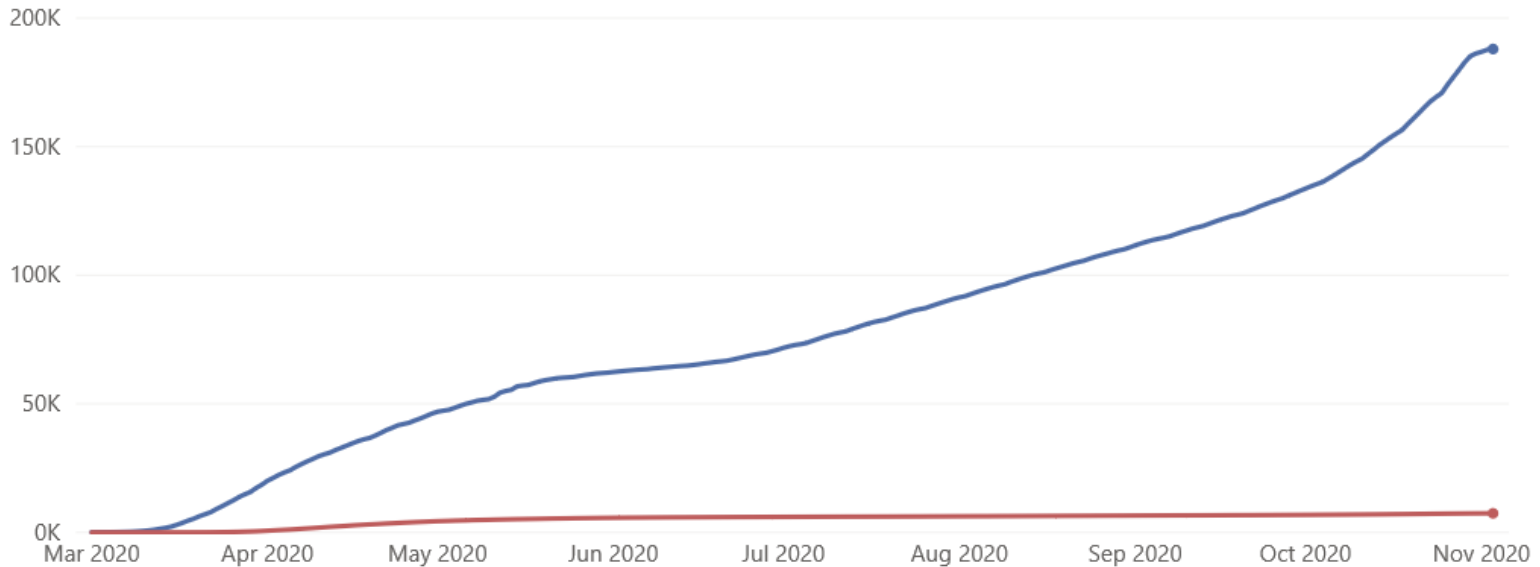
Filter By Date:

3/1/2020

11/3/2020

Cumulative Confirmed Cases and Deaths among Confirmed Cases by Date

● Confirmed Cases ● Deaths



MI DEMOGRAPHIC DISTRIBUTION

1/17/2020

Cases by Demographic Characteristics

Data are suppressed when the number of cases is five or below to protect the confidentiality of individuals. The sum of the cases for individual categories may be fewer than the total number of cases due to data suppression. Rates are not calculated for multiple races, other, and unknown race categories due to the unavailability of an appropriate denominator.

Cases

Deaths

Select case status:

- Confirmed
- Probable

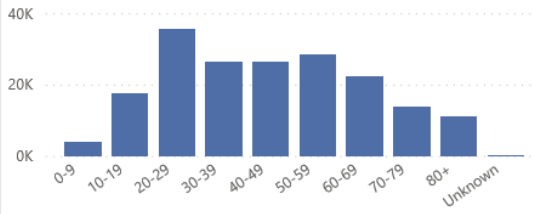
Select Preparedness Region:

All

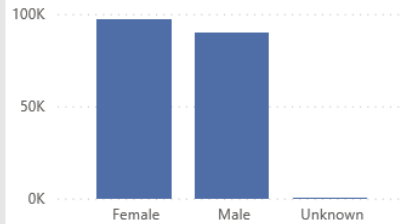
Select county:

All

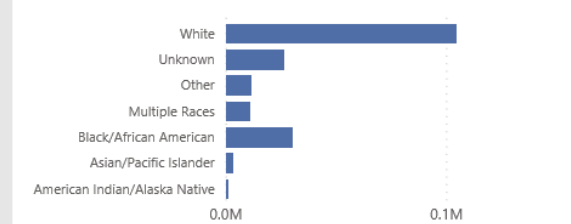
Cases by Age Group



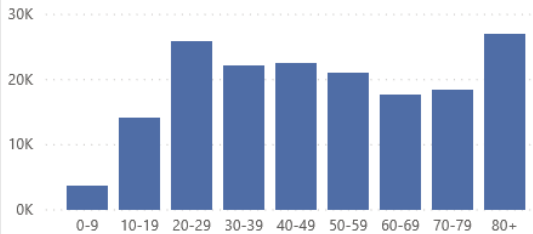
Cases by Sex



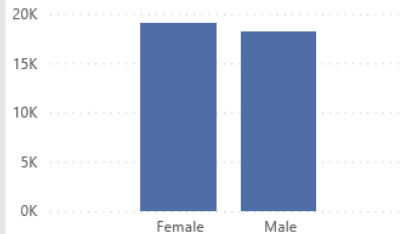
Cases by Race



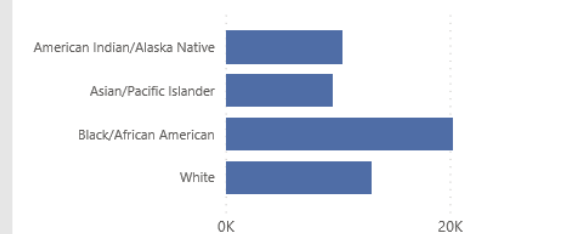
Cases per Million by Age Group



Cases per Million by Sex



Cases per Million by Race



MI COVID DEATH DISTRIBUTION

1/17/2020

Deaths by Demographic Characteristics

Data are suppressed when the number of deaths is five or below to protect the confidentiality of individuals. The sum of the deaths for individual categories may be fewer than the total number of deaths due to data suppression. Rates are not calculated for multiple races, other, and unknown race categories due to the unavailability of an appropriate denominator.

Cases

Deaths

Select case status:

- Confirmed
- Probable

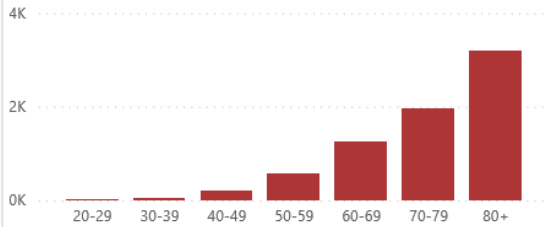
Select Preparedness Region:

All

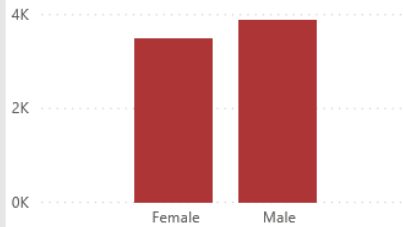
Select county:

All

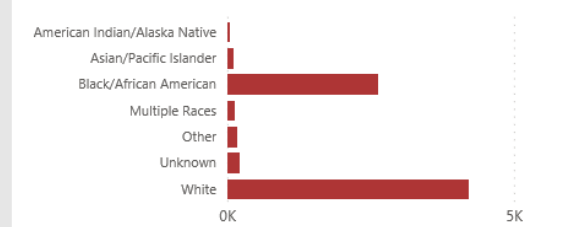
Deaths by Age Group



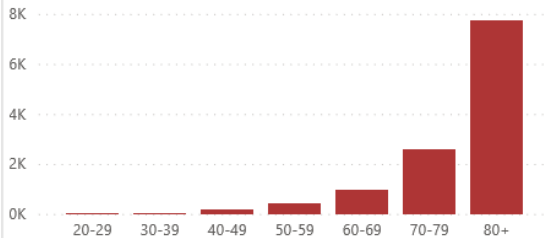
Deaths by Sex



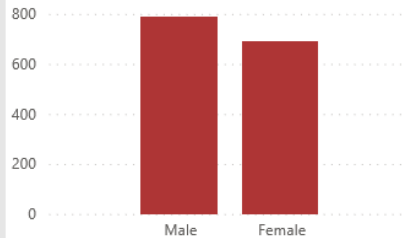
Deaths by Race



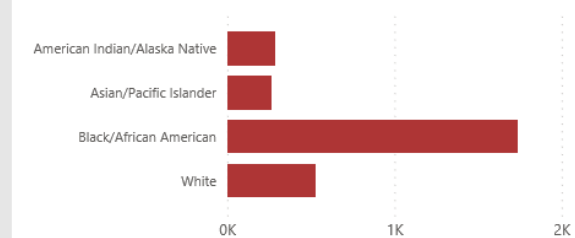
Deaths per Million by Age Group



Deaths per Million by Sex



Deaths per Million by Race



Cases by Demographic Characteristics

Data are suppressed when the number of cases is five or below to protect the confidentiality of individuals. The sum of the cases for individual categories may be fewer than the total number of cases due to data suppression. Rates are not calculated for multiple races, other, and unknown race categories due to the unavailability of an appropriate denominator.

Cases

Deaths

Select case status:

- Confirmed
- Probable

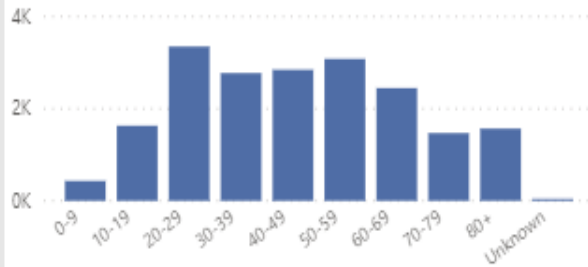
Select Preparedness Region:

Region 25

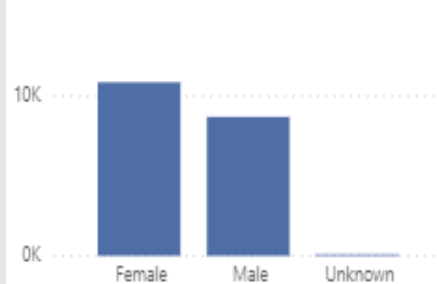
Select county:

Wayne

Cases by Age Group



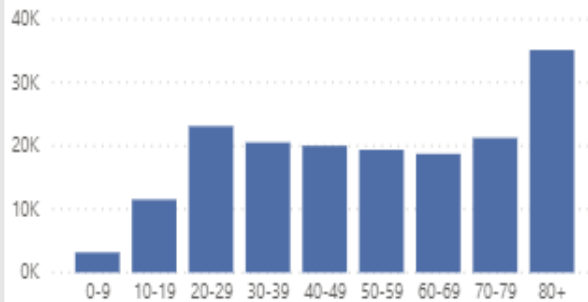
Cases by Sex



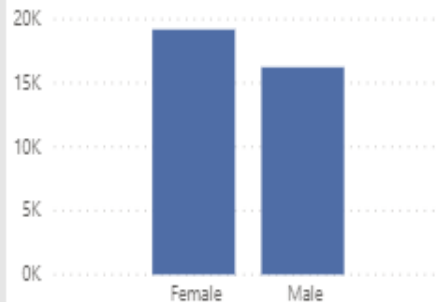
Cases by Race



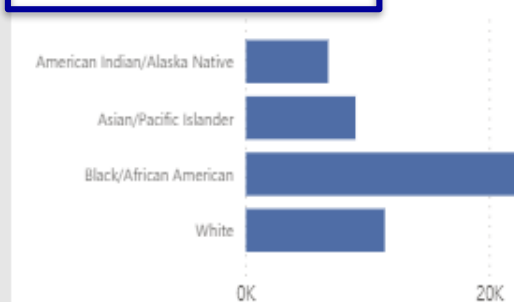
Cases per Million by Age Group



Cases per Million by Sex



Cases per Million by Race



1/17/2020

Deaths by Demographic Characteristics

Data are suppressed when the number of deaths is five or below to protect the confidentiality of individuals. The sum of the deaths for individual categories may be fewer than the total number of deaths due to data suppression. Rates are not calculated for multiple races, other, and unknown race categories due to the unavailability of an appropriate denominator.

Cases

Deaths

Select case status:

- Confirmed
 Probable

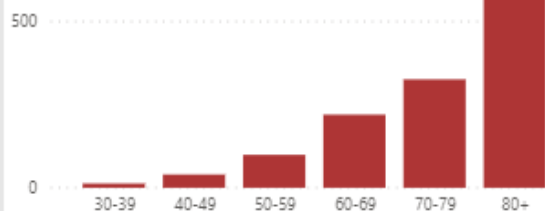
Select Preparedness Region:

Region 25

Select county:

Wayne

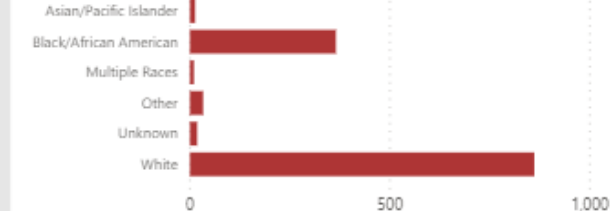
Deaths by Age Group



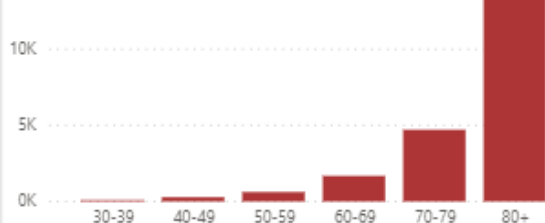
Deaths by Sex



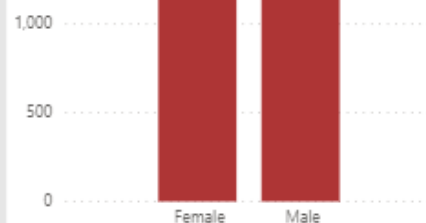
Deaths by Race



Deaths per Million by Age Group



Deaths per Million by Sex



Deaths per Million by Race



How does MDHHS classify confirmed and probable deaths?

Confirmed deaths include individuals who meet one or more of the following conditions: 1) Have been identified as a confirmed case and classified as deceased as a result of a case investigation in the Michigan Disease Surveillance System (MDSS). MDSS is the database used by state and local health department to monitor reportable diseases like COVID-19; 2) have been identified as a confirmed case in MDSS had have a death certificate with COVID-19 listed as a cause of death; 3) have been identified as a confirmed case in MDSS and die within 30 days of onset of COVID-19 infection and have a death certificate which classifies their manner death as 'natural'. Probable deaths include individuals who have COVID indicated as a cause of death on their death certificate but have not had a positive diagnostic laboratory test.

MI COVID-19 TESTING

11/7/2020

View Table

View Charts

Select Preparedness Region:

All

Select County:

All

Diagnostic tests are used to find current infection and look for genes or proteins from the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19. These tests, which are performed as nasal swabs, include: Nucleic acid amplification test/real-time polymerase chain reaction (NAAT/RT-PCR) test and rapid virus antigen detection point of care (POC) tests.

Serology tests are used to look for the possibility of previous infection. Serology tests look for antibodies to SARS-CoV-2 in the blood. There are currently two types of serology tests: the enzyme-linked immunosorbent assay (ELISA) test and the rapid antibody detection POC test. Serology tests do not diagnose disease and do not guarantee immunity, but might provide information about previous infection.

Total Covid-19 Laboratory Tests

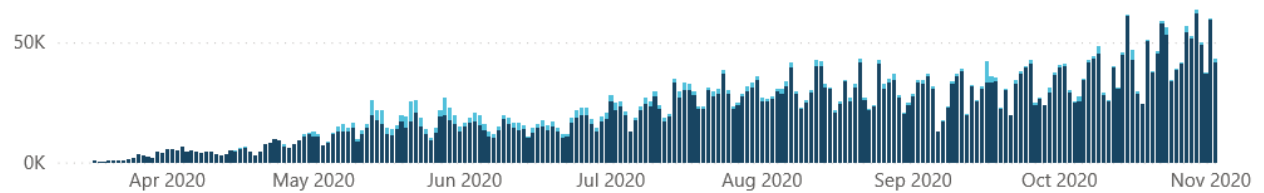
Total testing includes both diagnostic tests which are used to determine if an individual currently has COVID-19 and serology testing which is used to determine if a person has antibodies to Covid-19.

Filter by Date:

3/10/2020 11/2/2020

Total Laboratory Tests by Type and Date

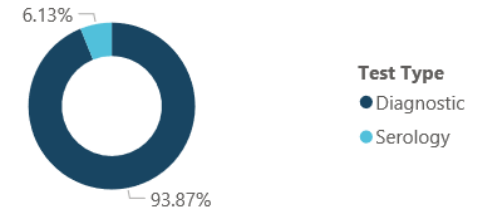
Test Type ● Diagnostic ● Serology



Total Tests Completed to Date

Test Type	Count	Tests per Million Residents
Diagnostic	5,092,680	509,720
Serology	332,703	33,300
Total	5,425,383	543,020

Percent of Tests Completed by Type



MI COVID-19 PRECENT POSITIVITY

11/7/2020

Diagnostic Covid-19 Laboratory Tests

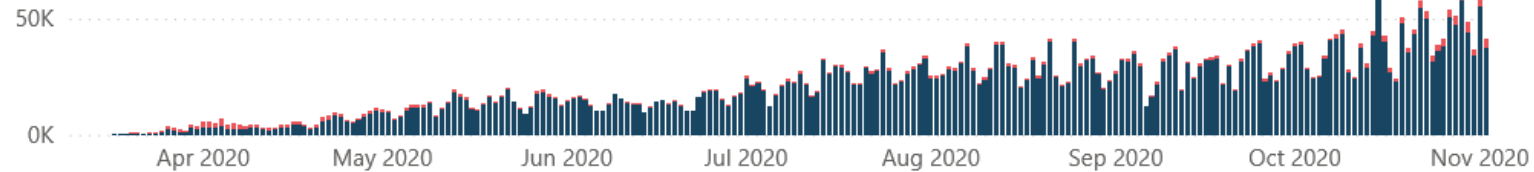
Diagnostic tests are used to determine if an individual is currently infected with Covid-19.

Filter by Date

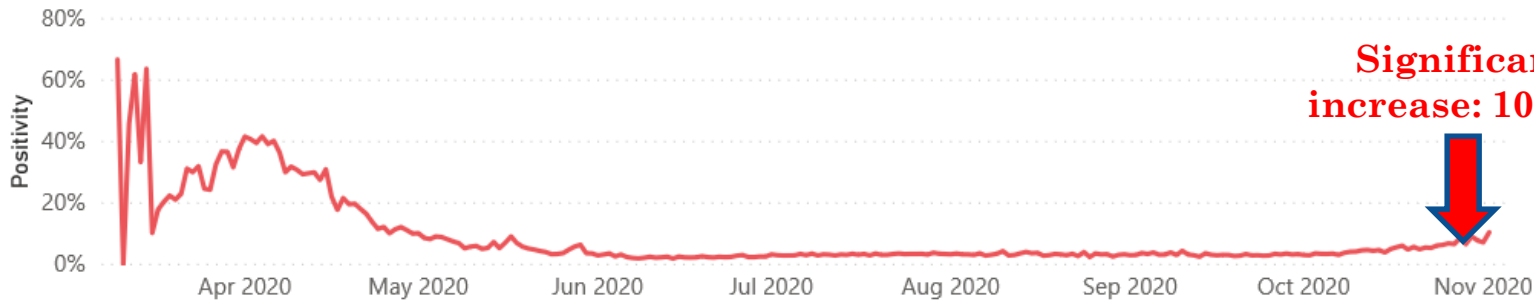
3/10/2020 11/2/2020

Total Laboratory Tests by Type and Date

Test Type ● Negative ● Positive



Percent of Diagnostic Tests That Were Positive



View Table

View Charts

Select Preparedness Region

Region 25

Select County

Wayne

Diagnostic tests are used to find current infection and look for genes or proteins from the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19. These tests, which are performed as nasal swabs, include: Nucleic acid amplification test/real-time polymerase chain reaction (NAAT/RT-PCR) test and rapid virus antigen detection point of care (POC) tests. Diagnostic tests do not include serology tests which look for antibodies to SARS-CoV-2 in the blood.

Diagnostic Covid-19 Laboratory Tests

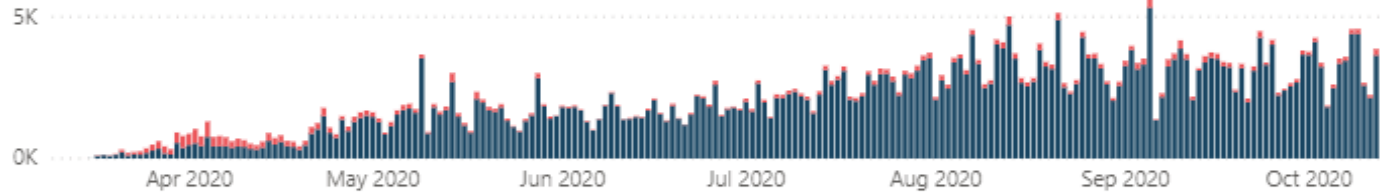
Diagnostic tests are used to determine if an individual is currently infected with Covid-19.

Filter by Date

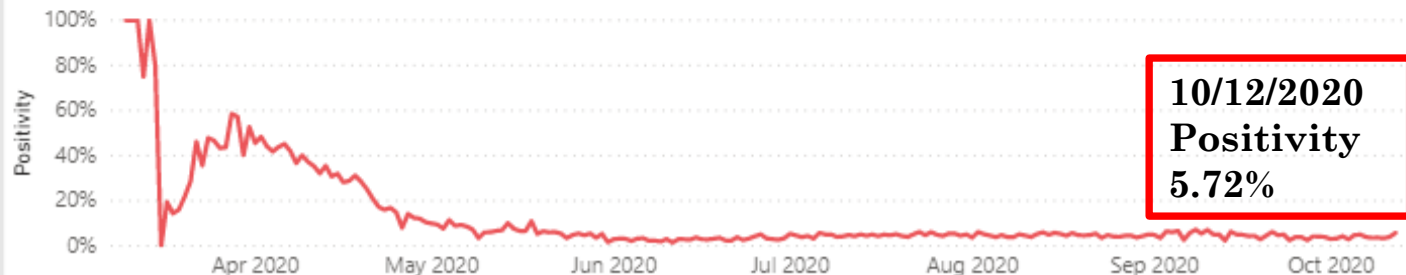
3/10/2020 10/12/2020

Total Laboratory Tests by Type and Date

Test Type ● Negative ● Positive



Percent of Diagnostic Tests That Were Positive



**10/12/2020
Positivity
5.72%**

10/12/2020

REGIONAL VARIATION OVER TIME

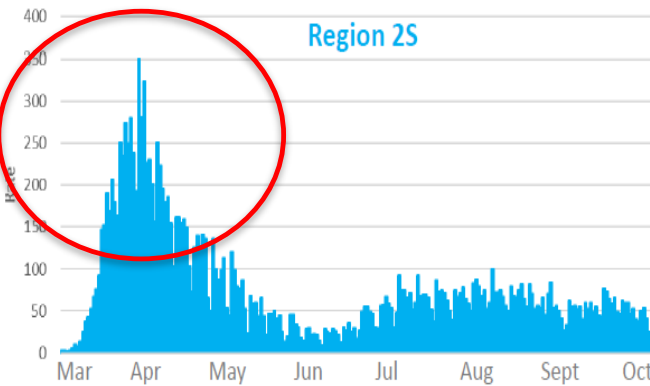
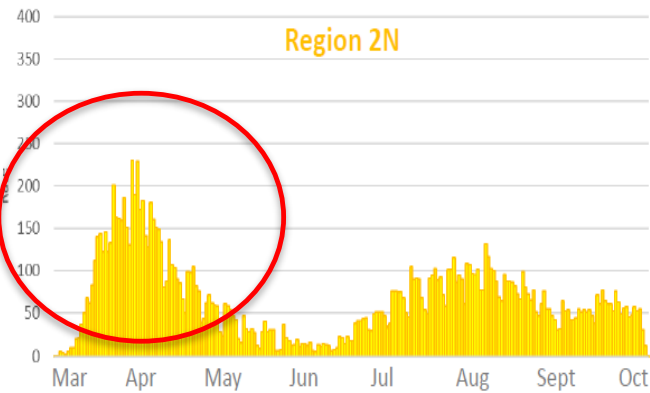


- Michigan is split up into 8 regions
- Throughout the Pandemic, various regions were impacted more than others
- This is a review of the timeline of COVID-19 cases across our preparedness regions



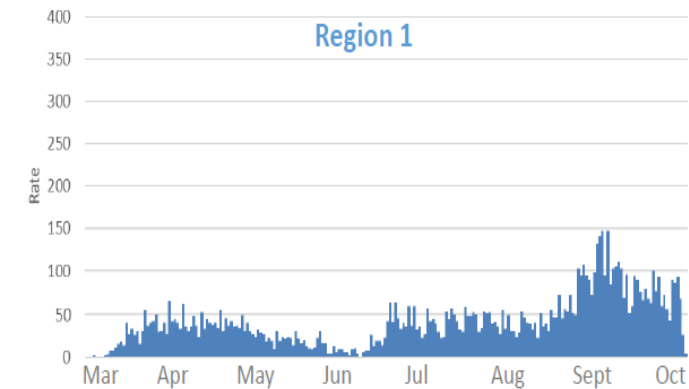
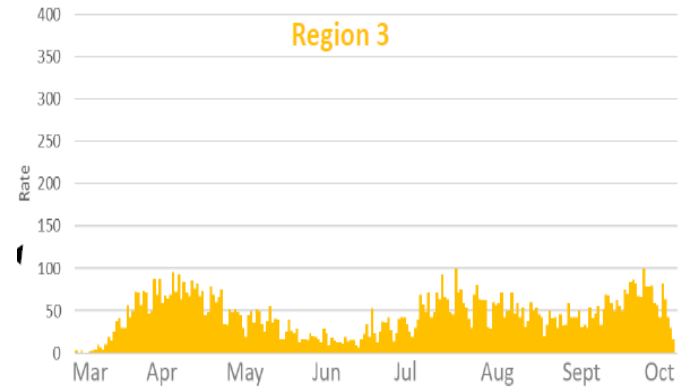
HOW WERE THE REGIONS IMPACTED?

Confirmed Case Rate per 1,000,000 Residents by Date of Onset*



*If available, otherwise Date of Specimen Collection

Confirmed Case Rate per 1,000,000 Residents by Date of Onset**



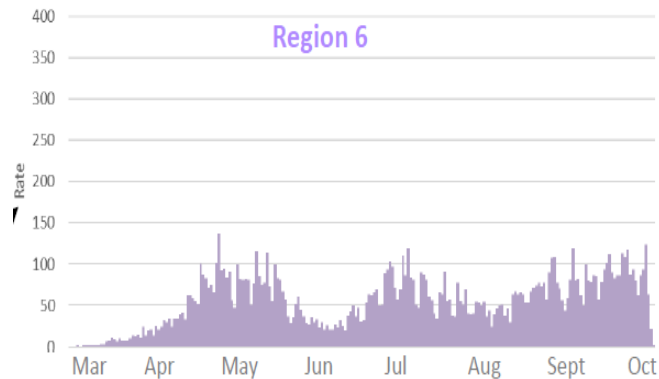
*If available, otherwise Date of Specimen Collection

11/7/2020

CONT.

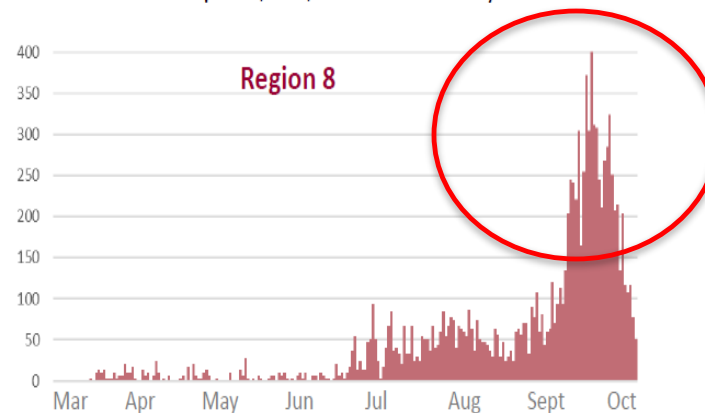


Confirmed Case Rate per 1,000,000 Residents by Date of Onset*

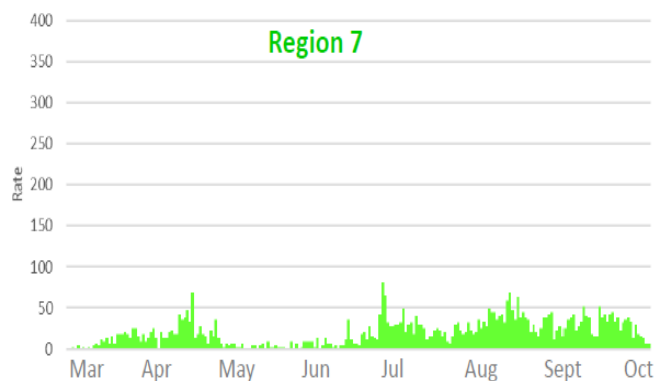
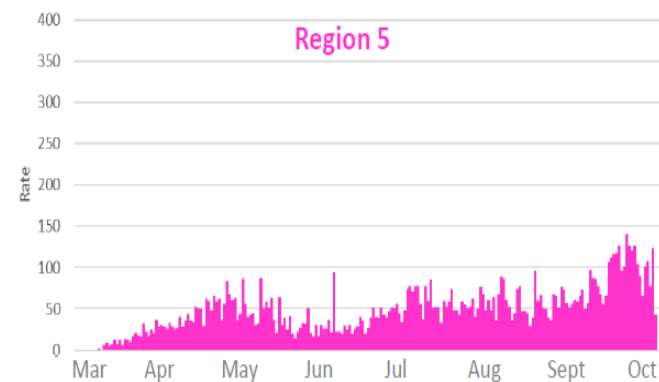


*If available, otherwise Date of Specimen Collection

Confirmed Case Rate per 1,000,000 Residents by Date of Onset*



*If available, otherwise Date of Specimen Collection



11/7/2020

CURRENTLY:

- Public “Lockdown fatigue”
- Healthcare worker fatigue/drift



NEW: EPIDEMIC VS. EXECUTIVE ORDERS







11/7/2020

COVID-19

MDHHS EPIDEMIC ORDER OCT. 29


MDHHS has issued orders under a law first enacted by the Michigan Legislature after the Spanish Flu of 1918 specifically to deal with epidemics. Note that the Supreme Court struck down a different, broader law.

Under MDHHS's epidemic order:

-  **1 Masks** must be worn over nose and mouth in gatherings of two or more people, including stores, offices, schools and events. Businesses cannot admit people without masks, with few exceptions.
-  **2 Capacity** limits apply to indoor and outdoor gatherings, including business, social and recreational settings. **They're stricter inside.**
-  **3 Restaurants and bars** must limit capacity for gatherings, **may only seat six people per table**, may only serve alcohol to parties who are seated, and must keep tables six feet apart.
-  **4 Organized sports** require masks (except for swimming) and have gathering limits.
-  **5 Employees** who can work from home must do so.
-  **6 Contact tracing:** Many businesses, **including bars and restaurants**, must collect phone numbers from their customers so they can be contacted in case they are exposed to someone who is ill.

All regions are in Phase 4 of reopening. The same rules now apply to all of Michigan.

To read the complete MDHHS Oct. 29, 2020, Epidemic Order, visit Michigan.gov/Coronavirus. Questions or concerns can be emailed to COVID19@michigan.gov.



REDUCTION STRATEGIES:

- Prompt Identification and screening
- Universal Masking for all (patients/staff/visitors)
- Universal Eye Protection for patient care activities
- Social Distancing
- PPE and hand hygiene compliance (staff and visitors)
- Cleaning and Disinfection
- Visitor guidance
- Ongoing Monitoring by Infection Prevention
- Exposure management
- Preparations for the Fall 2020



DAILY SCREENING

- Patients
- Visitor
- Employees



Screening is a continual and ongoing process that should take into account: history of COVID testing, development of *new* symptoms and exposure risk.

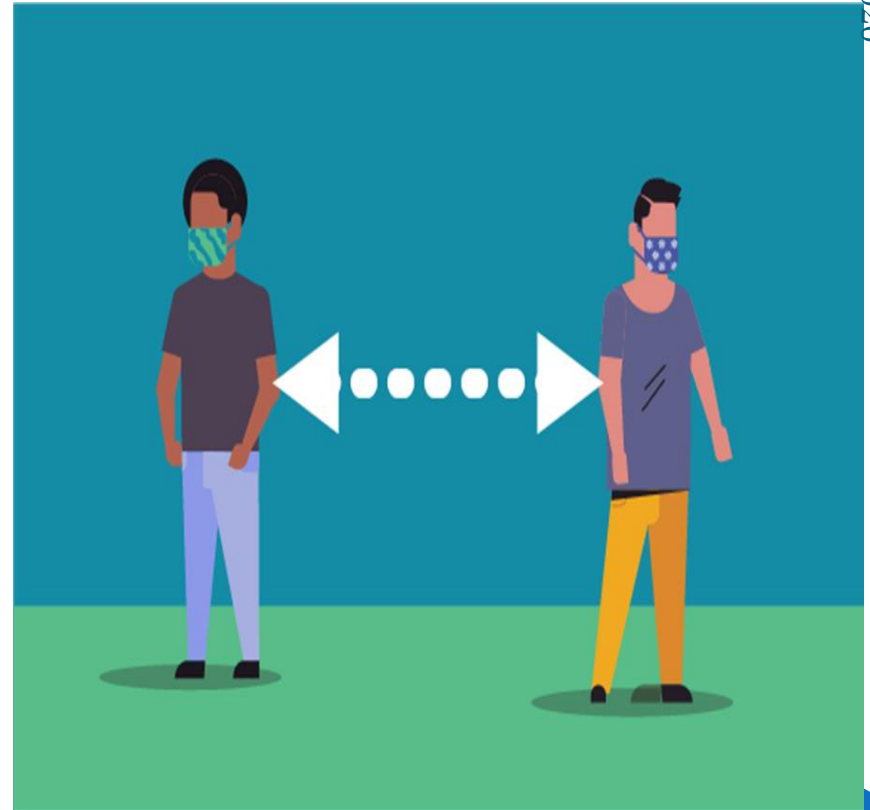
Note: The assumption that exposure risk is hospital-associated cannot be made during the time of ongoing community transmission without investigation.



- Universal Masking for all patients, healthcare staff, and visitors.

- Social Distancing (6 ft) as much as possible, especially in hallways and common areas.

DO WEAR YOUR MASK		DO NOT	
 <p>THE PROPER WAY Wear your mask so it comes all the way up, close to the bridge of your nose, and all the way down under your chin. Keep it snug to your face.</p>	 <p>DO NOT push your mask under your chin to rest on your neck.</p>	Beaumont	
		DO NOT	
 <p>DO NOT wear the mask below your nose.</p>	 <p>DO NOT wear the mask so it just covers the tip of your nose.</p>		

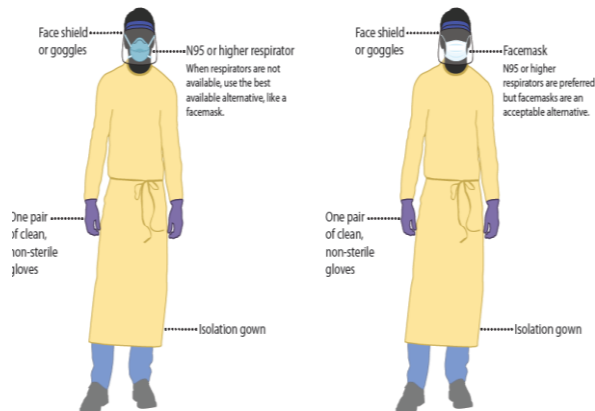


- Appropriate PPE for staff and visitors for the patient and task at hand.

COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

Preferred PPE – Use N95 or Higher Respirator

Acceptable Alternative PPE – Use Facemask



- Examples of aerosol-generating procedures:

- Endotracheal intubation
- Bronchoscopy
- Non-invasive ventilation
- Tracheostomy
- Manual ventilation before intubation
- Cardiopulmonary resuscitation

- Cleaning and Disinfection

- All COVID and non-COVID patient care areas are regularly and thoroughly cleaned/disinfected.
- Routine disinfectants.
- Increased frequency of high-touch surface cleaning.



PATIENT UNDER INVESTIGATION (PUI)

CRITERIA:

- Clinical presentation AND
- Exposure risk (i.e. travel, congregate living, large group events, type of work, exposure to active COVID patient, etc.) AND
- Testing result(s)



COVID TESTING FYIS:

- PCR is a molecular test that amplifies the virus' genetics (not a culture test).
- Present of genetic material alone can be misleading.
- Time is an important epidemiologic factor in interpretation.
- Discordant testing results may be due to:
 - stage of virus illness (can test too early)
 - specimen collection error
 - sensitivity and specificity of test kit
- Testing positive after admission does not necessarily mean the patient was exposed at the hospital (i.e. community exposure and incubation time needs to be considered).
- Re-testing is not encouraged for patients who have previously tested positive.
- Serologic testing for COVID (IgA/IgG) is not used for screening or diagnosis.



11/7/2020

Note: *do not retest 90 days from first positive unless patient has new symptoms.*

EXPANDING COVID-19 TESTING

1/17/2020

Different Types of Coronavirus Tests

	Molecular Test	Antigen Test	Antibody Test
Also known as...	Diagnostic test, viral test, molecular test, nucleic acid amplification test (NAAT), RT-PCR test, LAMP test	Rapid diagnostic test (Some molecular tests are also rapid tests.)	Serological test, serology, blood test, serology test
How the sample is taken...	Nasal or throat swab (most tests) Saliva (a few tests)	Nasal or throat swab	Finger stick or blood draw
How long it takes to get results...	Same day (some locations) or up to a week	One hour or less	Same day (many locations) or 1-3 days
Is another test needed...	This test is typically highly accurate and usually does not need to be repeated.	Positive results are usually highly accurate but negative results may need to be confirmed with a molecular test.	Sometimes a second antibody test is needed for accurate results.
What it shows...	Diagnoses active coronavirus infection	Diagnoses active coronavirus infection	Shows if you've been infected by coronavirus in the past
What it can't do...	Show if you ever had COVID-19 or were infected with the coronavirus in the past	Definitively rule out active coronavirus infection. Antigen tests are more likely to miss an active coronavirus infection compared to molecular tests. Your health care provider may order a molecular test if your antigen test shows a negative result but you have symptoms of COVID-19.	Diagnose active coronavirus infection at the time of the test or show that you do not have COVID-19

- Rapid, POC
- At home collection
- Saliva tests

Must keep COVID "PU" (patient under investigation) criteria in mind!

EXAMPLE OF IP RESOURCES/COMMUNICATIONS:

- Email updates
- PPE & Isolation
- Department-specific guidance
- Specific Patient Populations
- Employee Health
- Human Resources
- Treatment Guidance
- Visitation

COVID-19 Update email archive ▼	COVID-19 Leader Update archive ▼
COVID-19 resources for employees ▲	COVID-19 documents for BMG/Ambulatory ▲

Staff are responsible to check their daily Beaumont Health Communications updates: key information about COVID guidance changes will be announced here!



EXAMPLE COVID POLICY FOR FRONTLINE

1/17/2020






Current Status: *Active* Policy Stat ID: 7995659

Beaumont

Origination: 5/1/2020
Effective: 5/1/2020
Last Approved: 5/1/2020
Last Revised: 5/1/2020
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Applicability: Beaumont All Sites

Infection Prevention Guidance in the Setting of Ongoing COVID-19 Community Transmission



-  [Appendix A. PPE Configuration Grid.pdf](#)
-  [Appendix B. COVID-19 N95 Respirators.pdf](#)
-  [Appendix C. Interim Guidance for Extended Use and Reuse of Gowns.pdf](#)
-  [Appendix D. Discontinuing Transmission-based Precautions COVID-19.pdf](#)
-  [Appendix E. Guidance for Performing Surgical Procedures.pdf](#)

Document Type: Policy

I. PURPOSE AND OBJECTIVE:

The purpose of this document is to provide an infection prevention framework for Beaumont Health (BH) patient care operations during ongoing COVID-19 community transmission through a safe and structured approach. The care of patients is our primary focus, and the safety of our healthcare personnel (HCP) is also paramount.

II. POLICY STATEMENT:

It is the policy of Beaumont Health to protect all in the health care environment from the risk(s) of COVID-19. This guidance is subject to changes as the situation evolves.



EXAMPLE: EPIC SMART TXT INSTRUCTIONS

- “Infection Status” in patient storyboard with further instructions
- Supports staff to strengthen PPE compliance

Isolation and Infection Instructions

Current	Required	Reason
Droplet	Droplet	COVID-19 Rule-Out
Contact	Contact	COVID-19 Rule-Out

Droplet Isolation Instructions

Droplet Isolation Precautions

- Limit patient transport
- Private room or cohort with patient with same organism
- Surgical mask for healthcare personnel
- Surgical mask for on patient during transport

Contact Isolation Instructions

Contact Isolation Precautions

- Limit patient transport
- Private room or cohort with patient with same organism
- Gloves for ALL patient/environmental contact
- Gown for ALL patient/environmental contact
- Dedicated patient equipment (i.e. stethoscope, blood pressure cuff, thermometer, tourniquet, etc.)

COVID-19 Rule-Out Infection Instructions

Maintain contact, droplet isolation and practice enhanced respiratory precautions (see precaution list below) for duration of illness. Only discontinue if Infection Prevention criteria are met.

Precautions

- N-95 respirator/PAPR for healthcare personnel
- Eye protection (goggles or face shield)
- Private room unless cohorting with COVID patient required (follow Infection Prevention guidance)
- If available, negative pressure room for aerosol generating procedures
- Limit patient transport
- Minimize nonessential personnel
- Gloves for ALL patient/environmental contact
- Gown for ALL patient/environmental contact
- Surgical mask for guests. (please refer to visitor policy)



COVID-19 ISOLATION

- New “Enhanced Respiratory” precautions signage with QR code
- Reminder COVID isolation:
 - Enhanced measures during this pandemic are universal masking (staff/patients and visitors) & universal eye protection during patient care.

Beaumont



**ALL FAMILY & FRIENDS,
PLEASE SEE
A NURSE
BEFORE
ENTERING.**

CONTACT+ ENHANCED RESPIRATORY PRECAUTIONS

 patient door should remain closed	 gowns before entering room
 limit patient transport	 N95 mask or PAPR for health care workers
 surgical mask on patient being transported	 face shield/goggles before entering room
 dedicated patient equipment	 gloves before entering room
 hand hygiene before/after care	

Scan QR code for instructions on donning and doffing PPE.



PLEASE REUSE SIGNS. DO NOT DISCARD.

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11/7/2020



DISCONTINUATION OF ISOLATION

Appendix A. Flowsheet for discontinuing transmission-based precautions in confirmed or suspected COVID-19 patient's room.



Infection Prevention team reviews isolation patients daily in acute care facilities.

Deciding when to discontinue COVID-19 transmission precautions

- The decision to discontinue isolation precautions in patients with confirmed or suspected COVID-19 should be done in consultation with the local infection prevention and epidemiology team.

Using a test-based versus non-test-based strategy

- Accumulating evidence supports use of a non-test-based strategy to discontinue isolation; at Beaumont Health, a non-test-based strategy (using symptoms) is preferred.
- Current PCR testing capacity at Beaumont limits the ability to use a test-based strategy for discontinuing transmission-based precautions; concern has also been raised about the value of PCR testing as a test of cure in patients with COVID-19.
 - If testing is required by an accepting facility or state/local health authority, please contact your infection prevention and epidemiology team.

Non-test-based strategy for discontinuing transmission-based precautions at Beaumont

- For patients with **confirmed COVID-19** (test positive), all the following minimum conditions must be met:
 - No fever for at least 24 hours without fever-reducing medication.
 - Improvement in symptoms (e.g. stable/improved oxygen requirement, cough controlled, diarrhea <3 episodes/day).
 - It's been at least 10 days since the initial positive COVID-19 test result. For patients with severe to critical illness^{1,2} or who are severely immunocompromised³, it should be at least 20 days since the initial test.
- For patients with **suspected or presumptive COVID-19** (test negative but high clinical suspicion; test not performed), all the following minimum conditions must be met:
 - No fever for at least 24 hours without fever-reducing medication.
 - Improvement in symptoms (e.g. stable/improved oxygen requirement, cough controlled, diarrhea <3 episodes/day).
 - It's been at least 10 days since the patient was admitted or began displaying symptoms. For patients with severe to critical illness^{1,2} or who are severely immunocompromised³, it should be at least 20 days since the patient was admitted or began displaying symptoms.

CDC COVID-19 PATIENT DISCHARGE EDUCATION

10 things you can do to manage your COVID-19 symptoms at home

Accessible Version: <https://www.cdc.gov/coronavirus/2019-nCoV/if-you-are-sick/steps-when-sick.html>

If you have possible or confirmed COVID-19:

1. **Stay home** from work and school. And stay away from other public places. If you must go out, avoid using any kind of public transportation, ridesharing, or taxis.



2. **Monitor your symptoms** carefully. If your symptoms get worse, call your healthcare provider immediately.



3. **Get rest and stay hydrated.**



4. If you have a medical appointment, **call the healthcare provider** ahead of time and tell them that you have or may have COVID-19.



5. For medical emergencies, call 911 and **notify the dispatch personnel** that you have or may have COVID-19.



6. **Cover your cough and sneezes** with a tissue or use the inside of your elbow.



7. **Wash your hands often** with soap and water for at least 20 seconds or clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol.



8. As much as possible, **stay** in a specific room and **away from other people** in your home. Also, you should use a separate bathroom, if available. If you need to be around other people in or outside of the home, wear a mask.



9. **Avoid sharing personal items** with other people in your household, like dishes, towels, and bedding.



10. **Clean all surfaces** that are touched often, like counters, tabletops, and doorknobs. Use household cleaning sprays or wipes according to the label instructions.



031582-4 07/01/2020

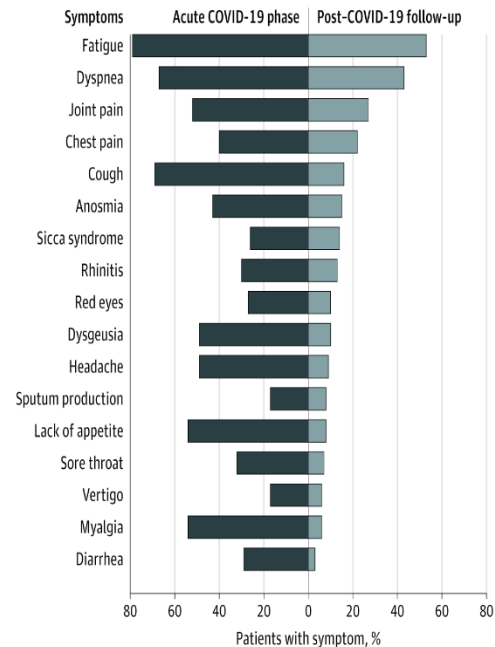
[cdc.gov/coronavirus](https://www.cdc.gov/coronavirus)

1/17/2020

From: **Persistent Symptoms in Patients After Acute COVID-19**

JAMA. 2020;324(6):603-605. doi:10.1001/jama.2020.12603

11/7/2020



COVID recovered patients frequently experience persistent symptoms that are not related to contagiousness or infectiousness. Ongoing research into "Long COVID" or "Long Haulers"

Figure Legend:

COVID-19–Related Symptoms The figure shows percentages of patients presenting with specific coronavirus disease 2019 (COVID-19)–related symptoms during the acute phase of the disease (left) and at the time of the follow-up visit (right).

WHY DO WE HAVE COVID DEDICATED UNIT(S)?

- Any unit should be able to manage COVID patients safely by following transmission precautions accordingly.
 - Post signage, communicate status, diligent hand hygiene and PPE use, etc.
- COVID units are a strategy to improve the allocation and use of resources (i.e. staffing and supplies).
- Allows for the preservation of PPE (to avoid or in the event of supply shortages).
- Where possible, provision of dedicated staffing for better patient coordination including:
 - Bed management
 - Nursing
 - Infectious Disease Physician
 - Attending Physicians



11/7/2020

EXPOSURES

- Infection Prevention usually sends out exposure workup to unit managers and coordinates with Employee Health to track exposures
- Exposure definitions via table below based on current CDC guidance
- ***KEEP task, duration and PPE of staff and patient in mind!***

	Prolonged ¹ Close ² Contact								Aerosolizing ³ Procedure	
	HCP	Patient	HCP	Patient	HCP	Patient	HCP	Patient	HCP	Patient
Mask or Respirator	Yes	Yes	Yes	No	No	Yes or No	Yes	No	No Respirator	Yes or No
Eye Protection	Yes or No	NA	Yes	NA	Yes or No	NA	No	NA	No	NA
Gown & Gloves	Yes or No	NA	Yes or No	NA	Yes or No	NA	Yes or No	NA	No	NA
Exposure Outcome:	NO exposure occurred		NO exposure occurred		Exposure Occurred		Exposure Occurred		Exposure Occurred (if any of above not worn)	

UPDATED COMMUNITY EXPOSURE

DEFINITION:

- Previous language: defined close contact as someone who spent at least 15 mins within 6ft of a person with a confirmed case.
- **New: “close contact” defined as someone who was within 6ft of an infected person for a total of 15 mins or more over a 24 hr period.**
- People who are considered close contacts are supposed to quarantine.
- More information:
<https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/appendix.html#contact>



HAI TRANSMISSION RISK:

11/7/2020

Incidence of Nosocomial COVID-19 in Patients Hospitalized at a Large US Academic Medical Center



Methods:

Medical records for all patients who first tested positive for SARS-CoV-2 RT-PCR on hospital day 3 or later or within 14 days of discharge were reviewed



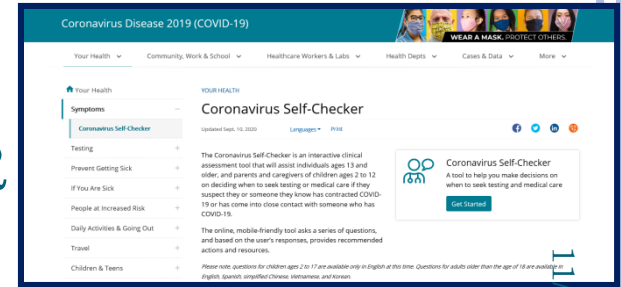
- 12/697 (1.7%) hospitalized patients tested positive for SARS-CoV-2 infection after admission.
- Only **1 patient** acquired SARS-CoV-2 infection while hospitalized through exposure to **a visiting** asymptotically infected spouse.

- 11/8,370 (0.1%) patients tested positive for SARS-CoV-2 infection within 14 days of discharge.
- In one person, infection was likely hospital-acquired.

Conclusion

Nosocomial COVID 19 infection is rare. The risk is mitigated by **strong infection prevention practices** and serial evaluation of symptomatic

NEW! CDC SYMPTOM CHECKER



A minute ago



Do they have any of the following? (check any)

- Fever or feeling feverish (such as chills, sweating)
- Cough
- Mild or moderate difficulty breathing (breathing slightly faster than normal, using extra muscles around the chest to help breathe)
- Sore throat
- Muscle aches or body aches
- Vomiting or diarrhea
- Stomach ache or pain in abdomen
- New loss of taste or smell
- Rash
- Red eyes
- Congestion or runny nose
- Other symptoms

Submit



In the two weeks before they felt sick, did they care for or have close contact (within 6 feet of an infected person for at least 15 minutes) with someone with symptoms of COVID-19, tested for COVID-19, or diagnosed with COVID-19?

A minute ago



Do any of these apply to them? (check any)

- Lung disease, such as moderate to severe asthma or cystic fibrosis
- Born premature
- Serious heart condition, such as congenital heart defect
- Weakened immune system or taking medications that may cause immune suppression
- Obesity
- Diabetes, chronic kidney disease, or liver disease
- Cancer
- HIV
- Blood disorder, such as sickle cell disease or thalassemia
- Neurologic condition, such as cerebral palsy
- Smoking or Vaping
- None of the above

Submit

Just now



In the last two weeks, have they attended or spent time in a group setting (e.g. school, dormitory, daycare)?

Yes

No





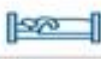





Just now

11/17/2020

FLU vs. COVID

CDC link on FLU vs. COVID-19:
<https://www.cdc.gov/flu/symptoms/flu-vs-covid19.htm>

1/17/2020

Coronavirus or Something Else?				
Symptoms	Coronavirus <small>Symptoms range from mild to severe</small>	Flu <small>Abrupt onset of symptoms</small>	Cold <small>Gradual onset of symptoms</small>	Allergies
 Fever	Common	Common	Rare	Sometimes
 Cough	Common	Common	Common	Sometimes
 Headache	Sometimes	Common	Rare	Sometimes
 Aches and Pains	Sometimes	Common	Common	No
 Fatigue	Sometimes	Common	Sometimes	Sometimes
 Sore Throat	Sometimes	Sometimes	Common	No
 Shortness of Breath	Sometimes <small>(In more serious infections)</small>	No	No	Common
 Sneezing	Rare	No	Common	Common
 Stuffy Nose	Rare	Sometimes	Common	Common
 Diarrhea	Rare	Sometimes	No	No

CDC.gov/coronavirus

beaumont
HEALTH

FLU & COVID SEASON: DAMPENED EFFECT OR TWINDEMIC? **TBD**

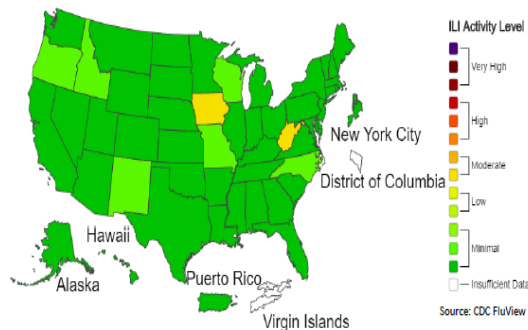
1/17/2020



Michigan Flu Focus
Weekly Influenza Surveillance Report
October 16, 2020 Vol. 18; No. 02
Week Ending October 10, 2020 | WEEK 41
Editor: Sue Kim
Editor email: KimS2@michigan.gov

Data provided in this report are preliminary and will be updated as additional data is received

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2020-21 Influenza Season Week 41 ending Oct 10, 2020



Note: This graph represents ILI activity levels reported to ILINet. Geographic spread of influenza has been suspended for the 2020-2021 influenza season

Updates of Interest

Nationally, seasonal influenza activity remains low.

For information on influenza and COVID-19 during the 2020-2021 influenza season, please visit the following link to CDC's website:

<https://www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm#Flu-and-COVID-19>

Influenza-associated Pediatric Mortality

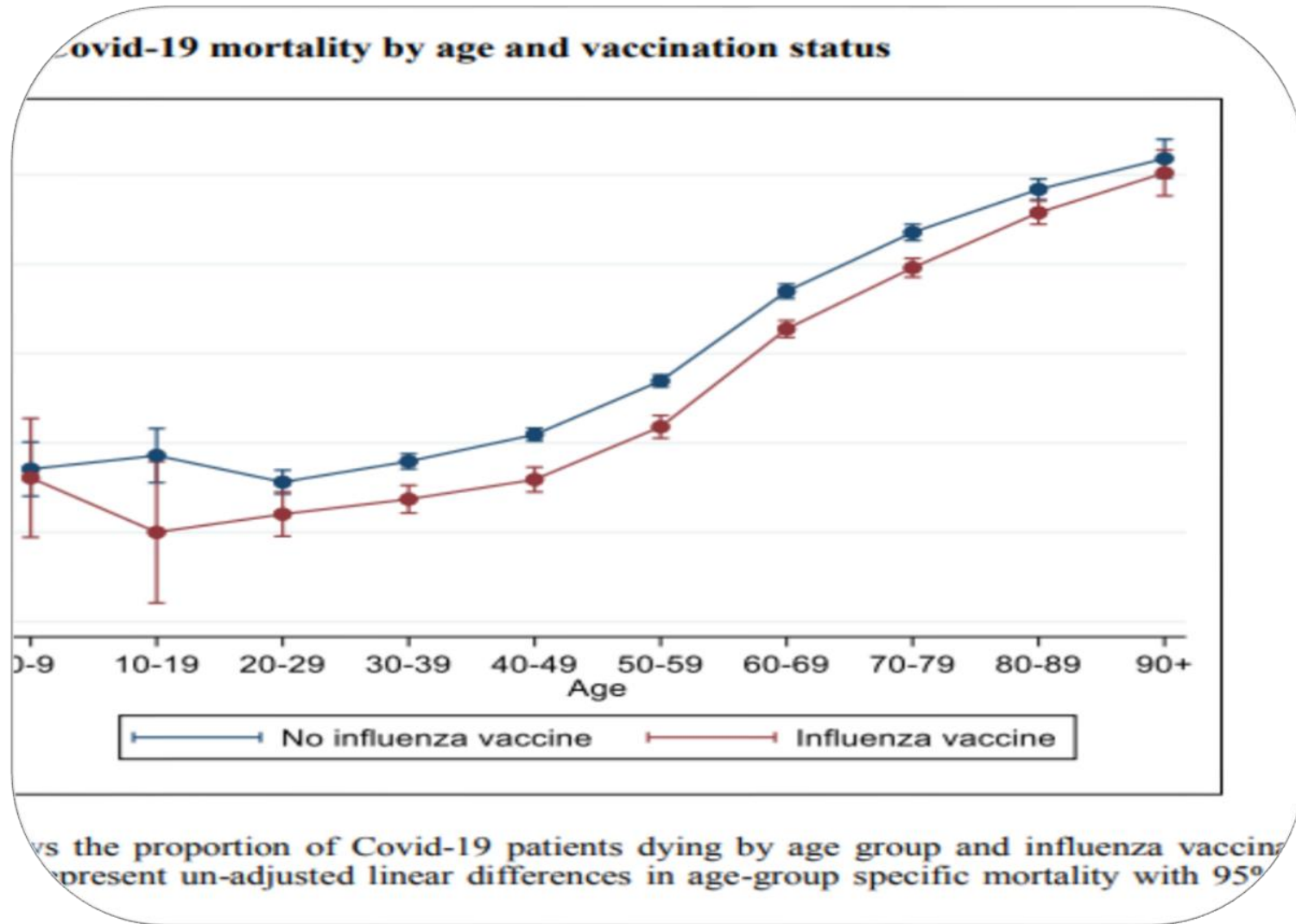
Nationally, no (0) influenza-associated pediatric deaths have been reported thus far for the 2020-2021 flu season.

192 pediatric flu deaths were reported for the past 2019-2020 flu season.

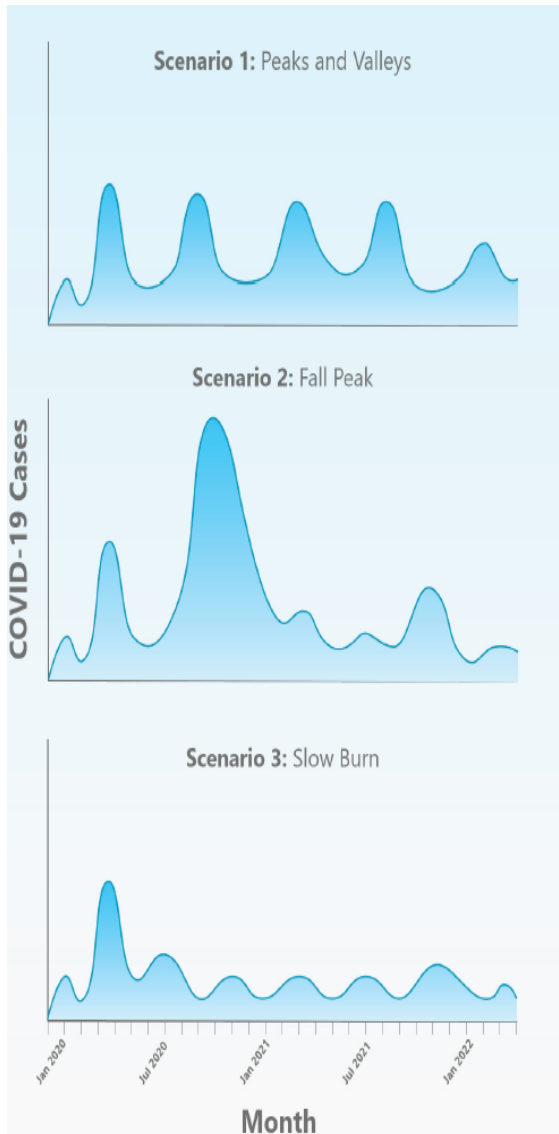
- Preparing for the potential of a second surge of COVID cases during flu season (TBD).
- Public health experts are urging the public to get their influenza vaccinations this year to avoid a surge of flu and COVID cases occurring simultaneously
- Saves healthcare resources
- Positive reports from around the world that flu cases seem to be reduced; still need to monitor as it's early in the season.

EFFECTS OF FLU VACCINATION ON COVID-19 SEVERITY IN HIGH RISK POPULATIONS

11/7/2020



PREDICTIONS: WHAT DOES A “SECOND WAVE” LOOK LIKE?



Series of repetitive smaller waves:
Occurring consistently over the next 1-2 year period, diminishing in 2021

Monster wave in the fall/winter:
Would certainly overwhelm health systems (similar to the 1918-1919 Pandemic)

“Slow Burn”:
Ongoing transmission without a clear wave pattern; may vary based on geography and degree of mitigation measures.

Source: Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota

WHO NEW STATEMENT TO CONSIDER....

WHO official urges world leaders to stop using lockdowns as primary virus control method

Andrew Mark Miller · 10/10/2020



The World Health Organization's special envoy on COVID-19 urged world leaders this week to stop "using lockdowns as your primary control method."



"As infectious disease epidemiologists and public health scientists, we have grave concerns about the damaging physical and mental health impacts of the prevailing COVID-19 policies, and recommend an approach we call Focused Protection," read the petition, known as the Great Barrington Declaration. "Current lockdown policies are producing devastating effects on short and long-term public health."

"We in the World Health Organization do not advocate lockdowns as the primary means of control of this virus," Dr. David Nabarro said to *The Spectator's* Andrew Neil. "The only time we believe a lockdown is justified is to buy you time to reorganize, regroup, rebalance your resources, protect your health workers who are exhausted, but by and large, we'd rather not do it."

11/7/2020

This next month is crucial for the fight against COVID-19!

NEXT STEPS:

- Ongoing mitigation efforts (national, state & local)
- Ongoing screening vigilance needed!
- Allocation of PPE and testing supplies
- Expansion of potential treatments/ therapeutics
- Continue to expand testing as capacity allows
- Ongoing research into epidemiology of this novel virus
- Special populations and post-viral illness
- Immunogenicity studies
- Rapid Vaccine trials and administration plans
- Flu/COVID season preparations



11/7/2020

INFECTION PREVENTION BASICS ARE KEY!

- Encourage ongoing compliance of “the basics to reduce COVID/other respiratory viruses:
 - Masking
 - Social Distancing
 - Hand Hygiene
 - Surface disinfection
 - Reducing large group events
 - Keeping your high risk family members in mind!





KEY MESSAGES DURING THIS PANDEMIC...

- 1) STAY VIGILENT
- 2) BE FLEXIBLE
- 3) BE PREPARED (2ND SURGE LIKELY)

**Continues to be a RAPIDLY
evolving situation...**



NEW CDC LINK OF COVID SCIENTIFIC PUBLICATIONS



[A-Z Index](#)

Search



[Advanced Search](#)

Stephen B. Thacker CDC Library

CDC



COVID-19 Science Update released: September 18, 2020



From the Office of the Chief Medical Officer, CDC COVID-19 Response, and the CDC Library, Atlanta GA. Intended for use by public health professionals responding to the COVID-19 pandemic.

*** Available on-line at <http://www.cdc.gov/library/covid19> ***

[PDF version for this update](#) [PDF - 2 MB]

COVID-19 Science Updates

Here you can find all previous COVID-19 Science Updates.

https://www.cdc.gov/library/covid19/091820_covidupdate.html

In This Update

[Healthcare Setting Associated COVID-19](#)

[Racial Disparities in COVID-19 Morbidity and Mortality](#)

[Epidemiology](#)

[Clinical Treatment & Management](#)

[Laboratory Science](#)

[In Brief](#)

11/7/2020

BEAUMONT HEALTH PUBLIC/PATIENT RESOURCES

ABOUT US CAREERS CONTACT US GIVING  myBeaumontChart LOGIN

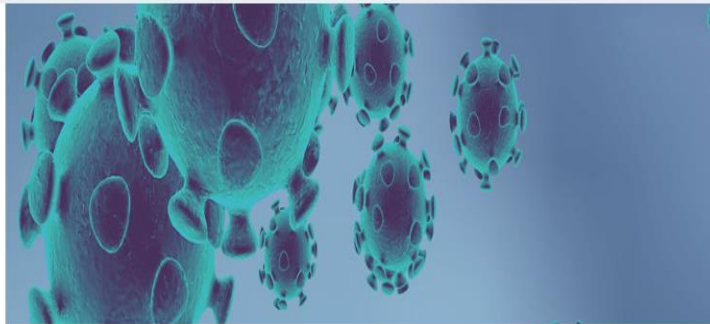
Beaumont

Find a Doctor Treatments & Services Locations Patients & Families 

 Updated Visiting Information

HOME - HEALTH & WELLNESS NEWS - CORONAVIRUS / COVID-19 UPDATES: WHAT TO KNOW

Coronavirus / COVID-19 Updates: What to Know



Safe care. Available at Beaumont Health. [Learn more. >>](#)

<https://www.beaumont.org/health-wellness/coronavirus>

CORONAVIRUS HOTLINE - 800-592-4784

1/7/2020



Testing and Screening

Prevention and Treatment

Signs and Symptoms

Hotlines and Public Information

Giving to Our Health Care Heroes

How does Beaumont determine whether or not to admit a patient with COVID-19 symptoms to the hospital? +

Is a positive COVID-19 test a requirement for admission to the hospital? +

If a patient is not admitted to the hospital, what happens? +

Why are some patients sent home one day, but have much more intense symptoms a few days later? +

How has Beaumont's employee testing process changed since the pandemic began? +

Is it safe for me to deliver my baby at Beaumont? +

Beaumont Classes and Events +



*Thank you, any questions? Email:
Priscila.Bercea@Beaumont.org*

11/7/2020

