

# COVID-19 – November 2020 Update

Steven D. Burdette, MD, FIDSA, FACP

Professor of Medicine

Wright State University Boonshoft School of Medicine

Medical Director of Infection Prevention

Miami Valley Hospital

# Coronavirus disease in humans

## Common human coronaviruses

- HCoV-229E
  - HCoV-NL63
  - HCoV-HKU1
  - HCoV-OC43
- Detected by the respiratory pathogen panel multiplex PCR

## Novel coronaviruses

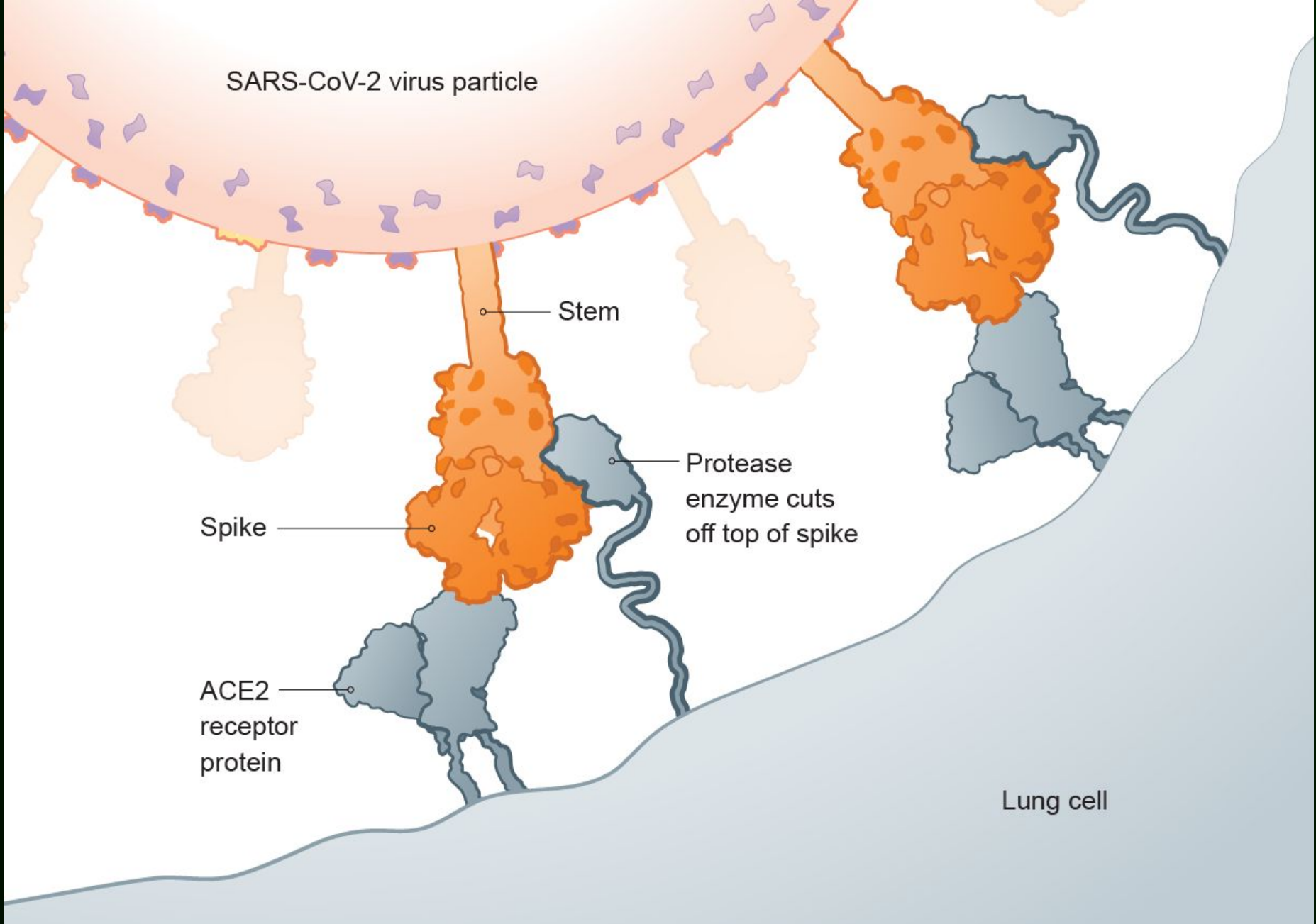
- Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) - 2003
- Middle East Respiratory Syndrome Coronavirus (MERS-CoV) - 2012
- Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) - 2019

# Wuhan, China: population over 11 million people



SARS-CoV-2 first isolated from BAL samples obtained on December 30, 2019

Initial cases linked to the Huanan Wholesale Seafood Market



Credit: Veronica Falconieri Hays

# Coronavirus Pandemic Timeline

Medscape



DEC 31, 2019

WHO is informed of cases of pneumonia of unknown etiology detected in Wuhan City, China



JAN 11, 2020

Report of first known death due to an illness caused by novel coronavirus



JAN 30, 2020

The WHO declares "public health emergency of international concern"



FEB 7, 2020

Chinese medic who tried to warn about the virus dies from COVID-19



FEB 29, 2020

US reports its first COVID-19 death



MAR 3, 2020

WHO warns of "severe and mounting disruption" to global supply of PPEs



MAR 11, 2020

WHO declares COVID-19 a pandemic



MAR 23, 2020

WHO's director general says COVID-19 pandemic "is accelerating"



MAR 24, 2020

After a week with almost no new cases, China announces that Wuhan lockdown will be partially lifted on April 8



Tokyo Olympics and Paralympics postponed until 2021

Select to view counts by daily or cumulative

Daily Count

### Cases

**267,356**

\* Preliminary

Total Cases: 267,356



### Hospitalizations

**21,290**

\* Preliminary



### Deaths

**5,623**

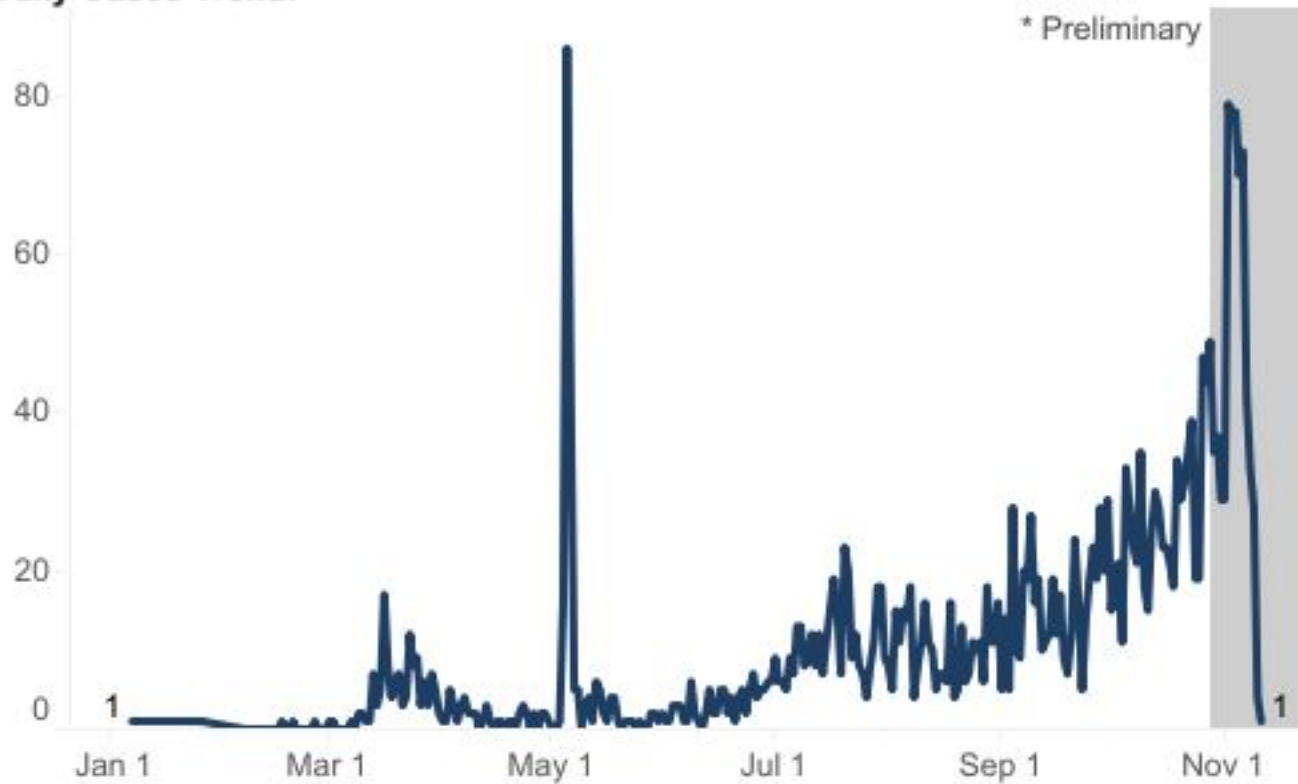
\* Preliminary



## Miami | Cases

Total Cases: 2,979

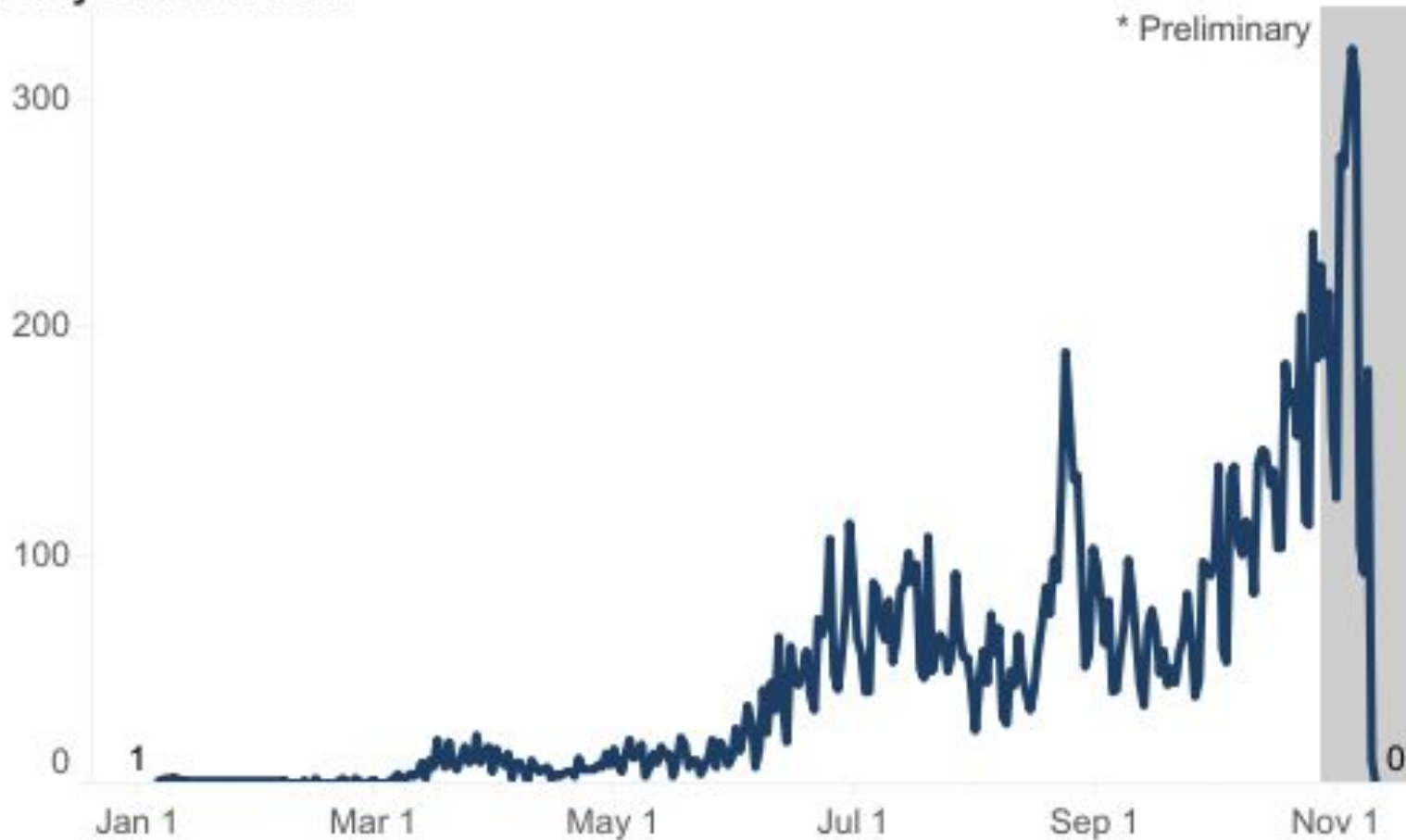
### Daily Cases Trend:



# Montgomery | Cases

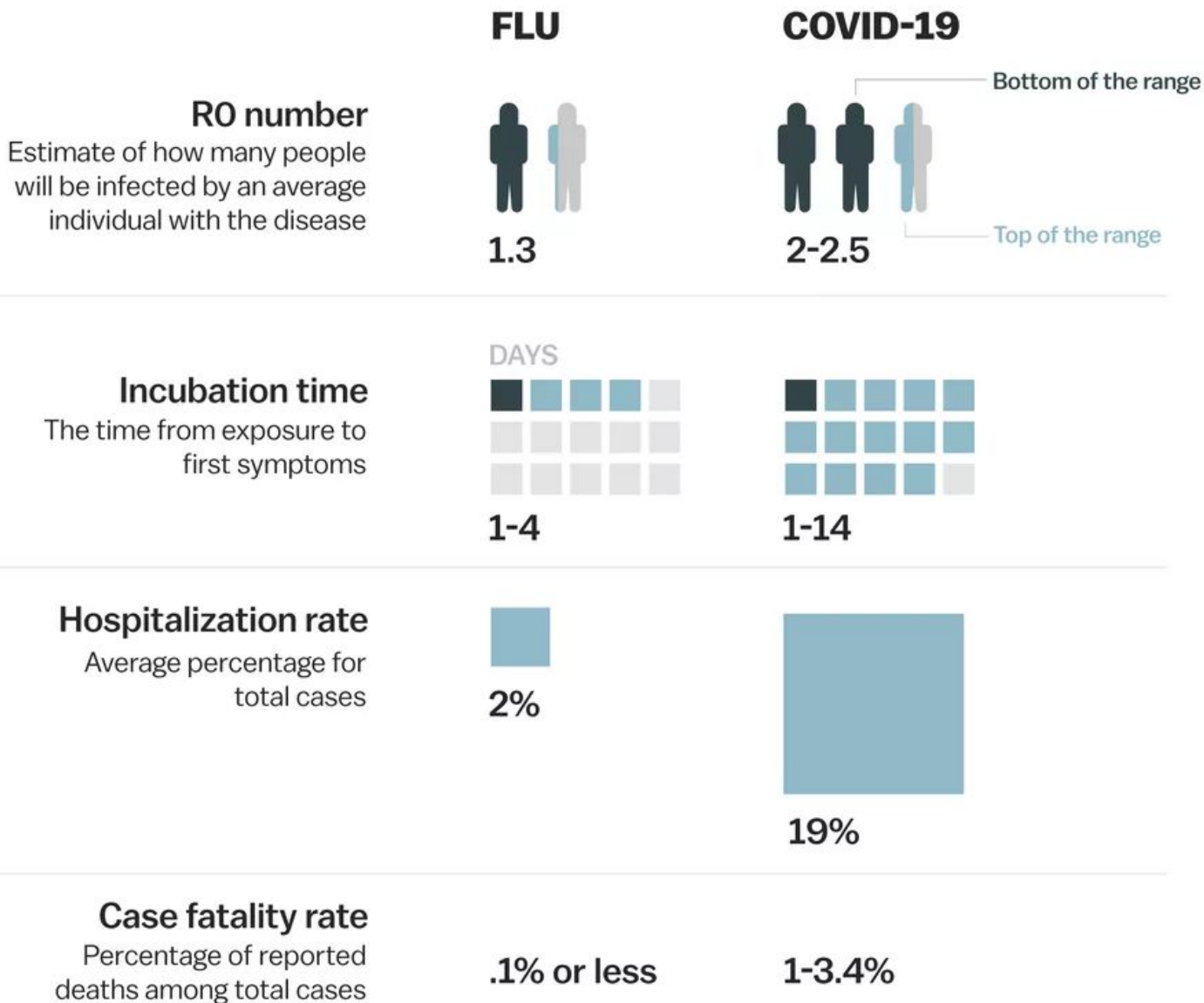
Total Cases: 14,820

## Daily Cases Trend:

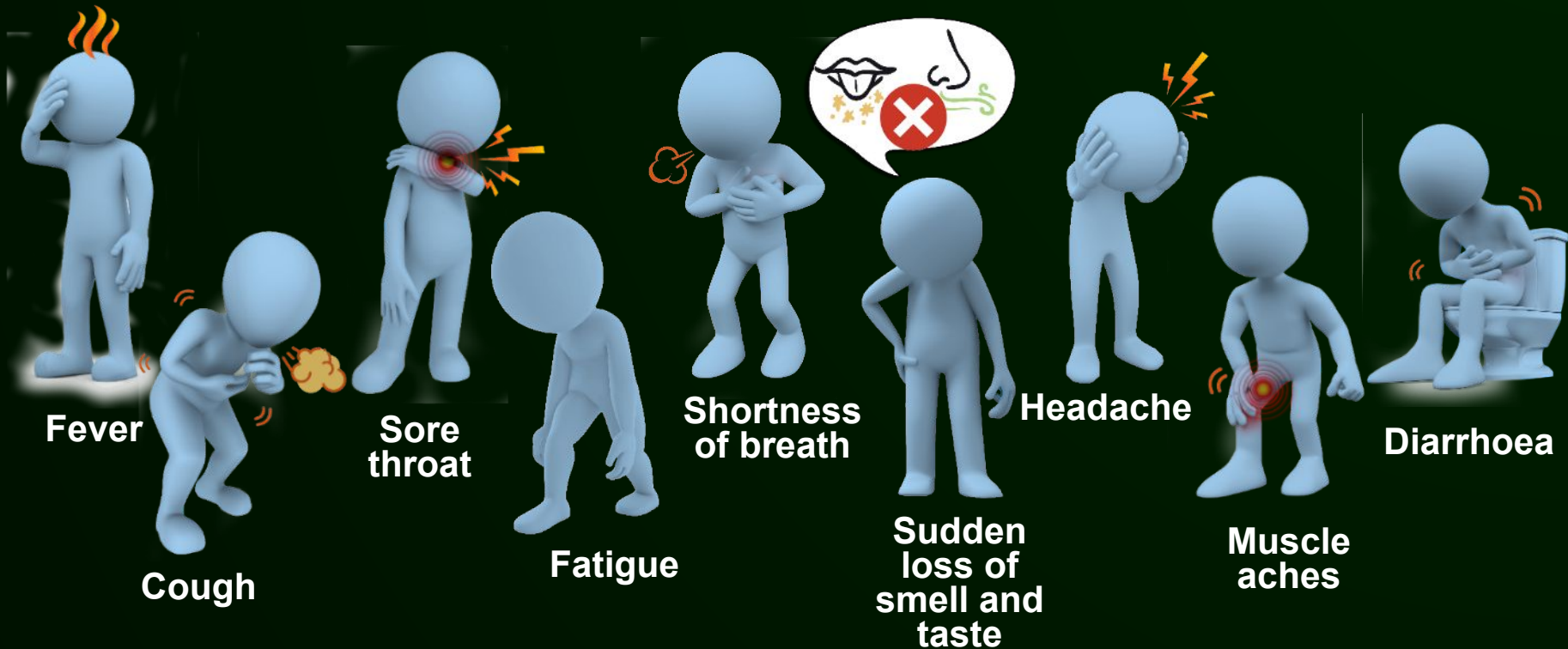




# How seasonal flu and Covid-19 compare



# Symptoms start like many other illnesses



Some people have no symptoms, **most** have a mild illness. But it can be severe or even fatal.

**Table 1.** Symptoms Compatible with COVID-19

<p>Symptoms may appear <b>2-14 days after exposure to the virus.</b></p> <p>People with these symptoms or combinations of symptoms may have COVID-19*</p>	<p><i>Respiratory symptoms alone</i></p> <ul style="list-style-type: none"><li>• Cough</li><li>• Shortness of breath or difficulty breathing</li></ul> <p><i>Or at least two of these symptoms</i></p> <ul style="list-style-type: none"><li>• Fever</li><li>• Chills</li><li>• Repeated shaking with chills</li><li>• Muscle pain</li><li>• Headache</li><li>• Sore throat</li><li>• New loss of taste or smell</li></ul>
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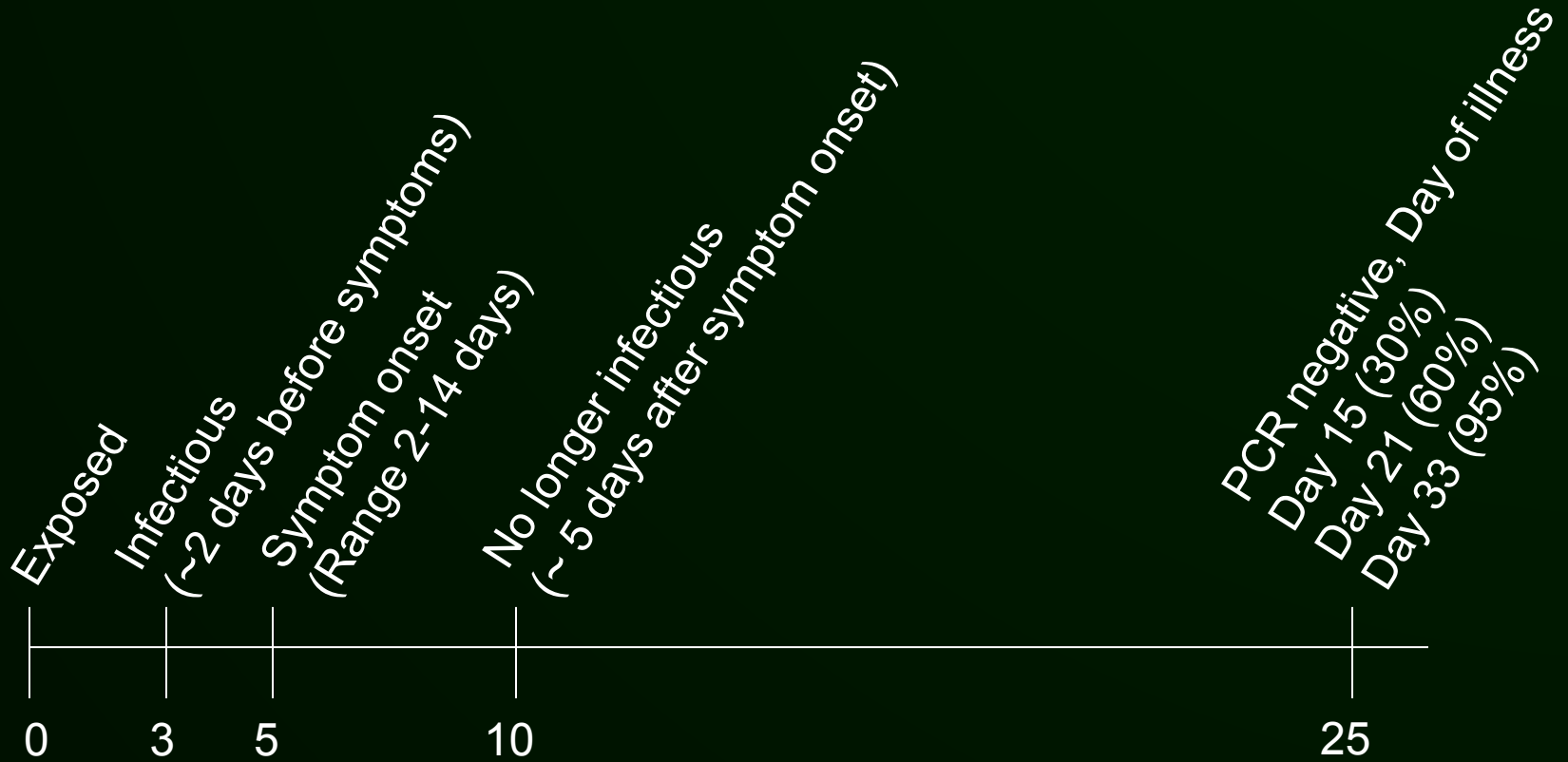
Children have similar symptoms to adults and generally have mild illness.

\*This list is not all inclusive.

Centers for Disease Control and Prevention. Symptoms of Coronavirus. Available at:

<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>. Accessed 3 May 2020.

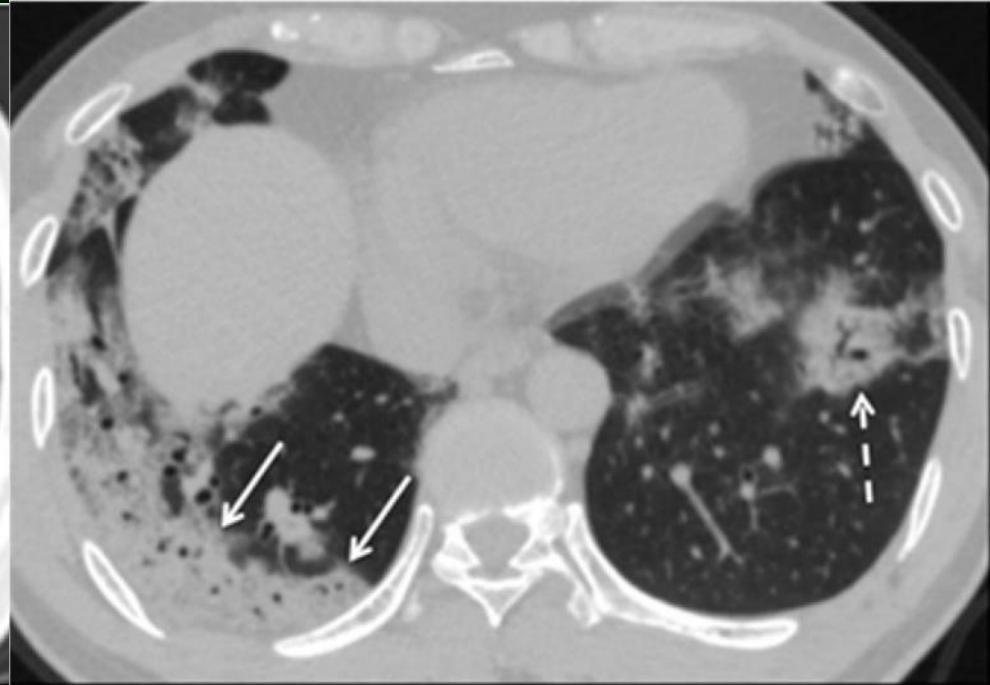
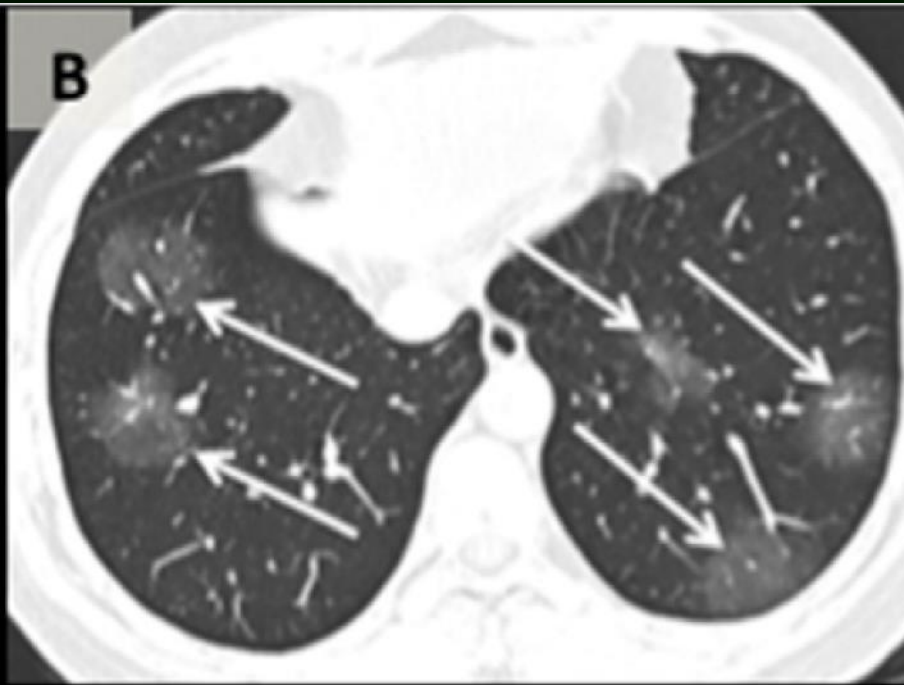
# Clinical Course



# Chest CT: ground glass opacities progressive airspace opacities

Early

Late



# × **MULTI-SYSTEM INFLAMMATORY SYNDROME IN CHILDREN**

If your child has symptoms contact your doctor immediately. Call 311 if you need a doctor.

## **Common symptoms include**

Persistent fever

Irritability or sluggishness

Abdominal pain, diarrhea, vomiting

Rash

Conjunctivitis (red or pink eyes)

Enlarged lymph node “gland” on one side of the neck

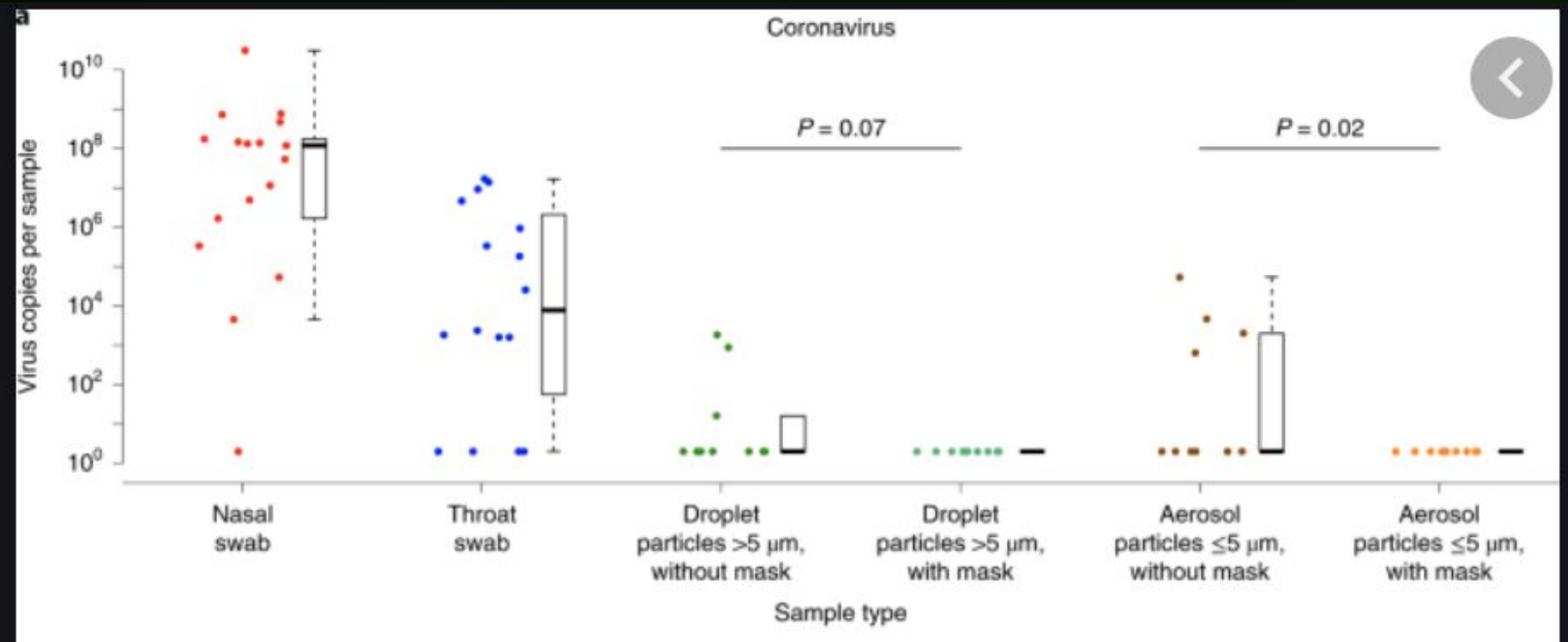
Red cracked lips or red tongue

Swollen hands and feet

# Does masking work?

- <https://www.nejm.org/doi/full/10.1056/nejmc2007800>







# What is the best mask to wear?



## FACE MASKS 101 TYPES OF MASKS

### GOOD

Scarves & Fabric Masks



#### PROS

Make your own, washable, comfortable, blocks coarse droplets

#### CONS

One protective layer, doesn't block fine or ultrafine droplets

### BETTER

Surgical Masks (Spit Masks)



#### PROS

Two protective layers, comfortable, blocks coarse and fine droplets

#### CONS

Only one use, doesn't block ultrafine droplets

### BEST

KN95 / N95 / FFP2 Respirators



#### PROS

Several protective layers, seals tight to block coarse, fine, & ultrafine droplets

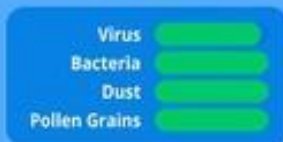
#### CONS

Must seal tight, save for medical workers and immunocompromised

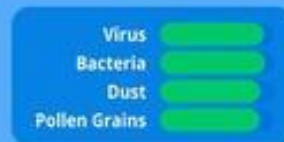
# TYPES OF FACE MASKS



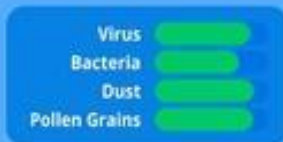
N95



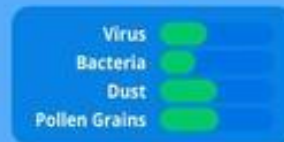
FFP1



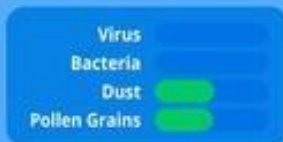
Surgical  
Mask



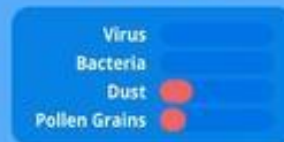
Active  
Carbon Mask



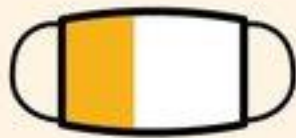
Non-woven  
Fabric Mask



Sponge  
Mask



## Percent Effectiveness in Blocking Droplets (by mask type)



1 layer T-shirt material  
**43.3%**



2 layer T-shirt material  
**98.6%**

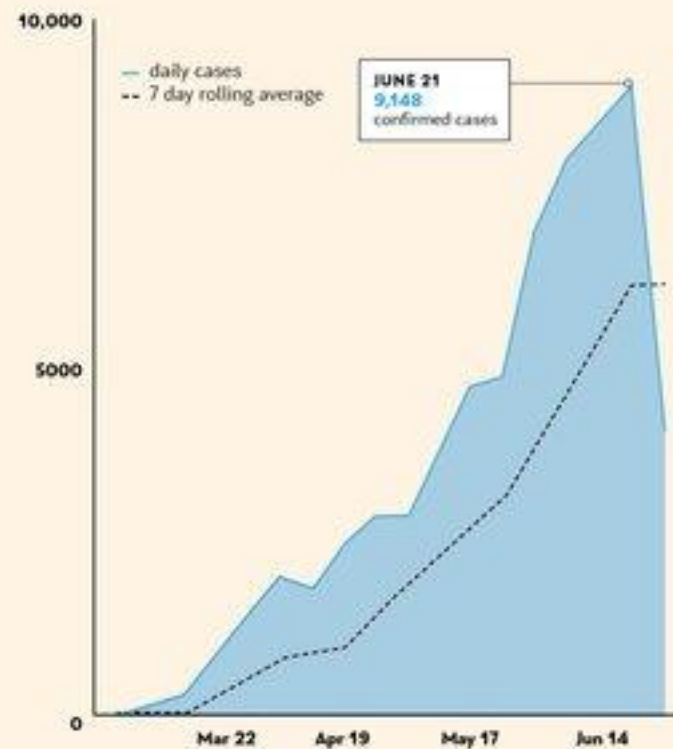


3 layer T-shirt material  
**99.98%**

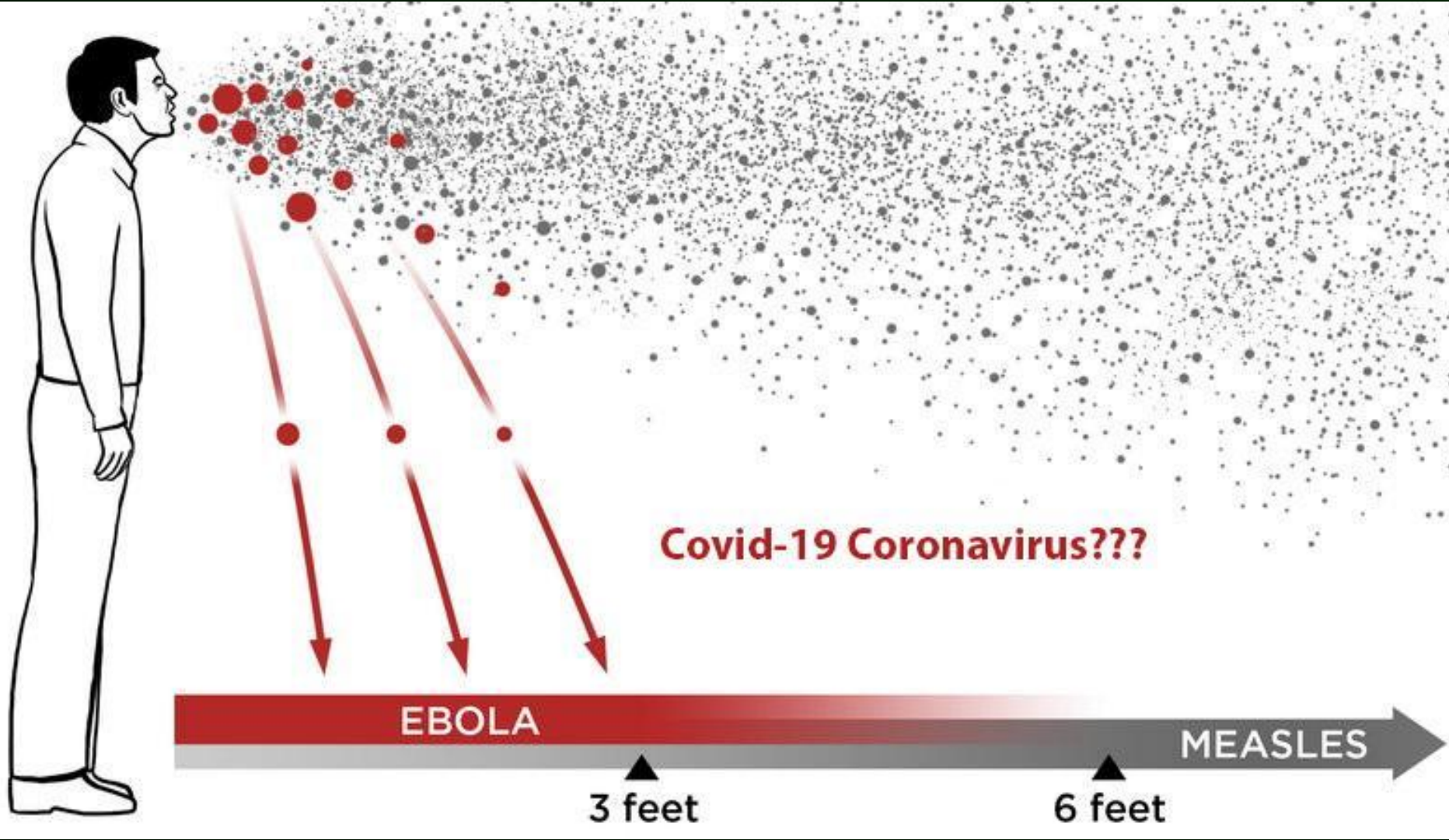


Medical-grade mask  
**96.3%**

## Daily Lab-Confirmed Covid-19 Cases in North Carolina



- Is 6' between people really enough?

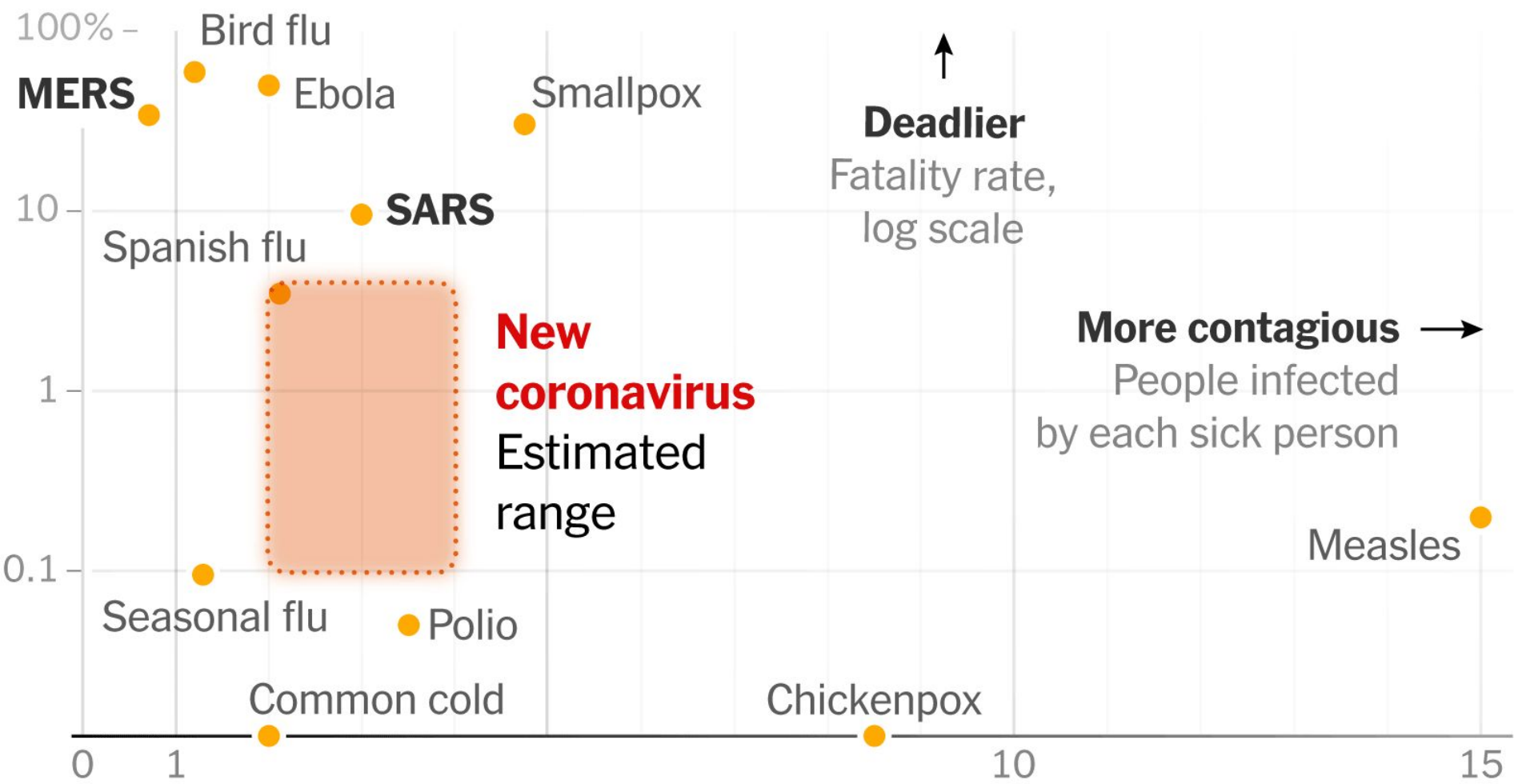


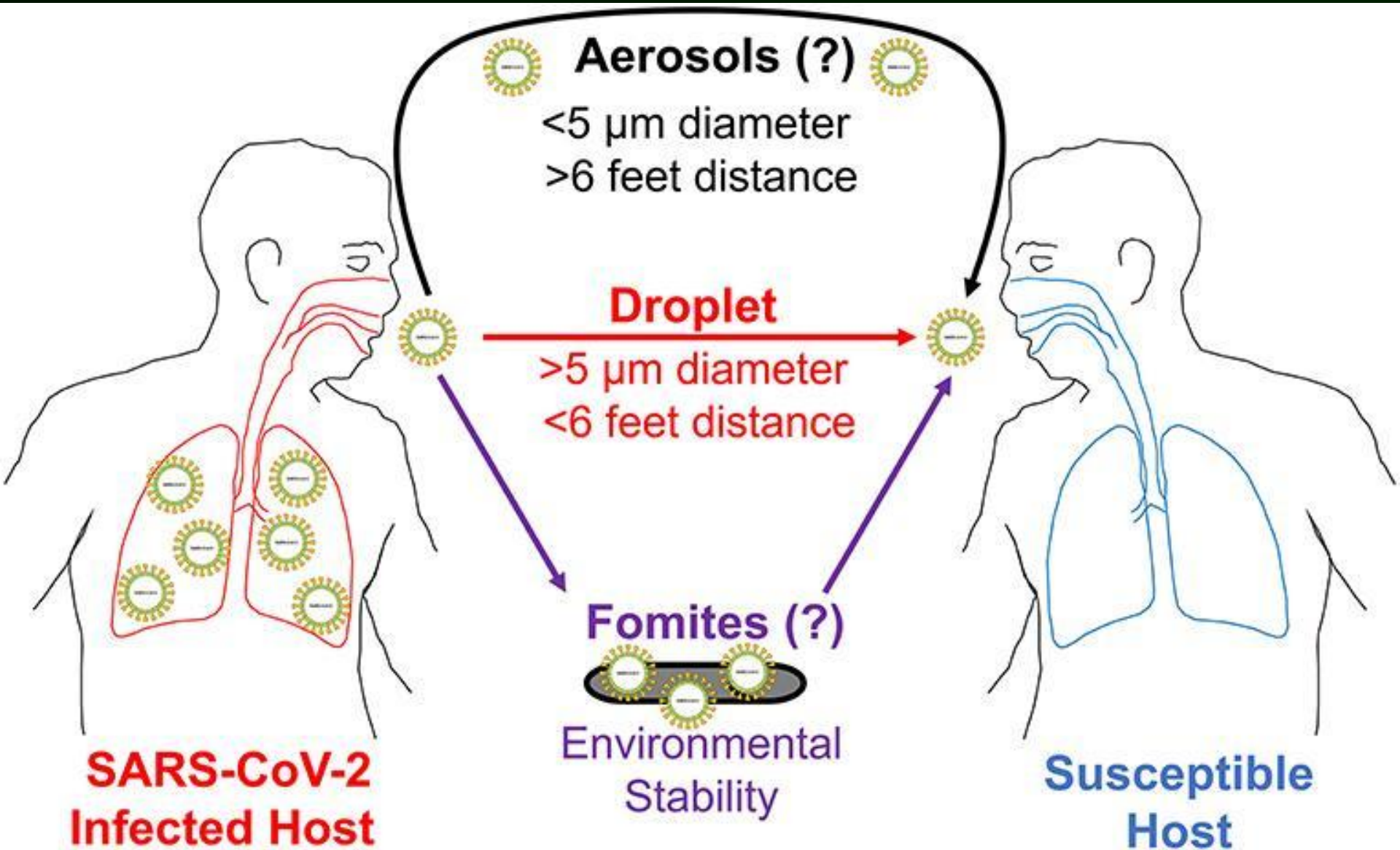
# How far droplets travel



Sources: MIT; FT research

FINANCIAL TIMES







# How do masks help slow the spread of COVID-19?

person with COVID-19	person without COVID-19	chance of spreading COVID-19
 neither person wearing face covering + less than 6 feet apart		very high
 only healthy person wearing face covering + less than 6 feet apart		high
 only person with COVID-19 wearing face covering + less than 6 feet apart		medium
 both wearing face covering + less than 6 feet apart		low
 both wearing face covering + at least 6 feet apart	 	very low
 staying home		virtually none

# Aerosol-Generating Procedures

- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
- Exercise caution if an aerosol-generating procedure (AGP) is necessary
  - An N95 or equivalent or higher-level respirator such as disposable filtering facepiece respirators, PAPR, or elastomeric respirator instead of a facemask, should be used in addition to the other PPE described above, by EMS personnel present for or performing aerosol-generating procedures.
  - Bag valve masks (BVMs), and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
  - If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during AGPs.
  - **If possible, discontinue AGPs prior to entering the destination facility or communicate with receiving personnel that AGPs are being implemented.**

**Table 4.** Risk of SARS Transmission to HCWs Exposed and Not Exposed to Aerosol-Generating Procedures, and Aerosol-Generating Procedures as Risk Factors for SARS Transmission

Type of Aerosol-Generating Procedure*	OR	95% CI
Tracheal intubation	6.6	2.3-18.9
Manipulation of oxygen mask	4.6	0.6-32.5
Tracheotomy	4.2	1.5-11.5
Manipulation of BiPAP mask	4.2	0.6-27.4
Suction before intubation	3.5	0.5- 24.6
Non-invasive ventilation	3.1	1.4-7.2
Manual ventilation before intubation	2.8	1.3-6.4
Collection of sputum sample	2.7	0.9-8.2
Defibrillation	2.5	0.1-43.9
Bronchoscopy	1.9	0.2-14.2
Chest compressions	1.4	0.2-11.2
Insertion of nasogastric tube	1.2	0.4-4.0

OR = odds ratio.

\*Adapted from: Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare workers: a systematic review. *PLoS One* 2012; 7(4): e35797.



Only 1 of these will work



- Do you need a quarantine room at your place of business in case someone is showing symptoms, to isolate them?

# ATTENTION ALL VISITORS

## DO NOT VISIT

if you have fever, shortness of breath, cough, nasal congestion, runny nose, sore throat, nausea, vomiting and/or diarrhea.

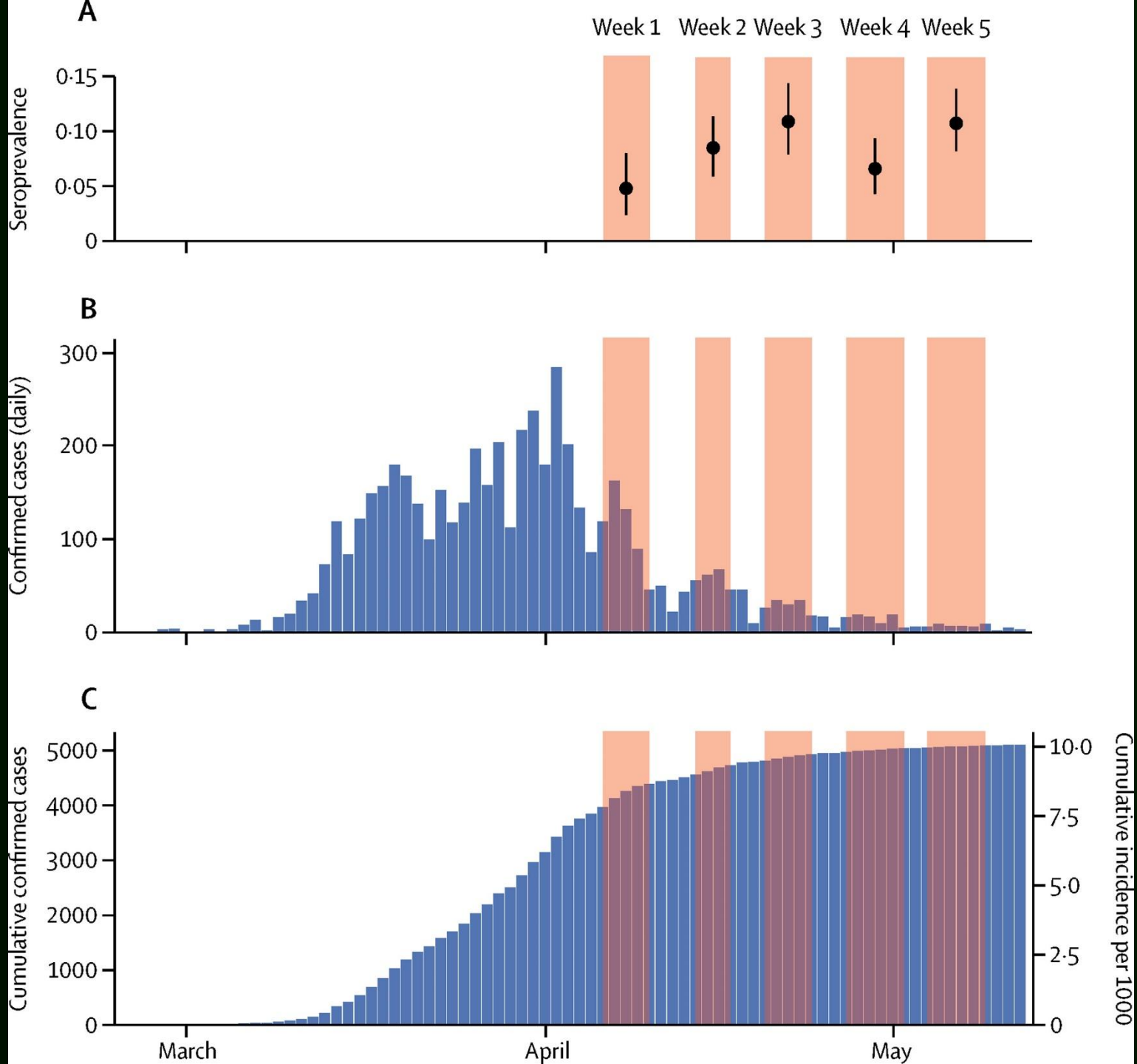


## DO NOT VISIT

**until you are completely recovered.**

Infections like flu and novel coronavirus (COVID-19) are especially dangerous to the residents and can be avoided.

- I know of a lot of people who were extremely sick in December,2019 and January,2020 with pneumonia, severe respiratory problems; could that have been Covid-19?



- If I have been exposed to COVID 19 previously, can I be exposed again?
- If I have been infected by COVID-19, can I be infected again?
- How long does immunity last?
- Can you get it again and again?



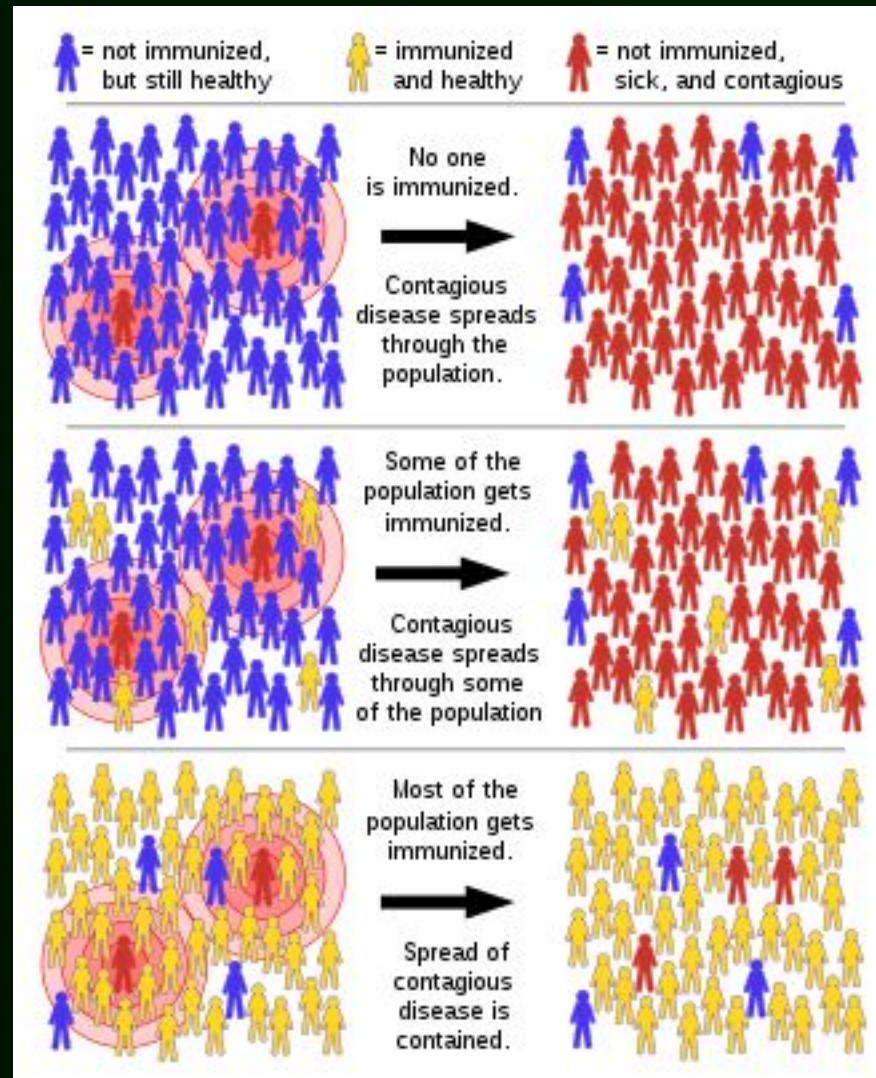
- \* Why are there so many conflicting statements about COVID (incubation period, signs/symptoms)

# Is it 10 days or 14 days to quarantine? I've heard both.

- Quarantine is 14 days (incubation is 3-14 days)
  - Majority of people are symptomatic within 7 days of exposure
- Isolation for actual infection is 10 days for most people out of the hospital
  - Need to be without fever for 24 hours before exposing other people to you

- Who is the best source of info CDC or doctors

# When will this end?



Questions?