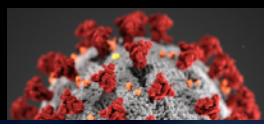


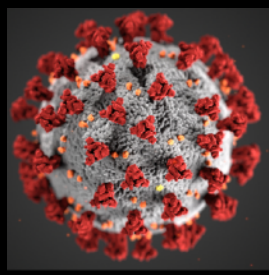
Demystifying COVID-19

B V Murali Mohan MD, MRCP(UK), SCE(RespMed)(UK), FRCP(Glasgow)
Senior Consultant, Pulmonology and Internal Medicine
Narayana Health - Mazumdar Shaw Medical Center
Bangalore

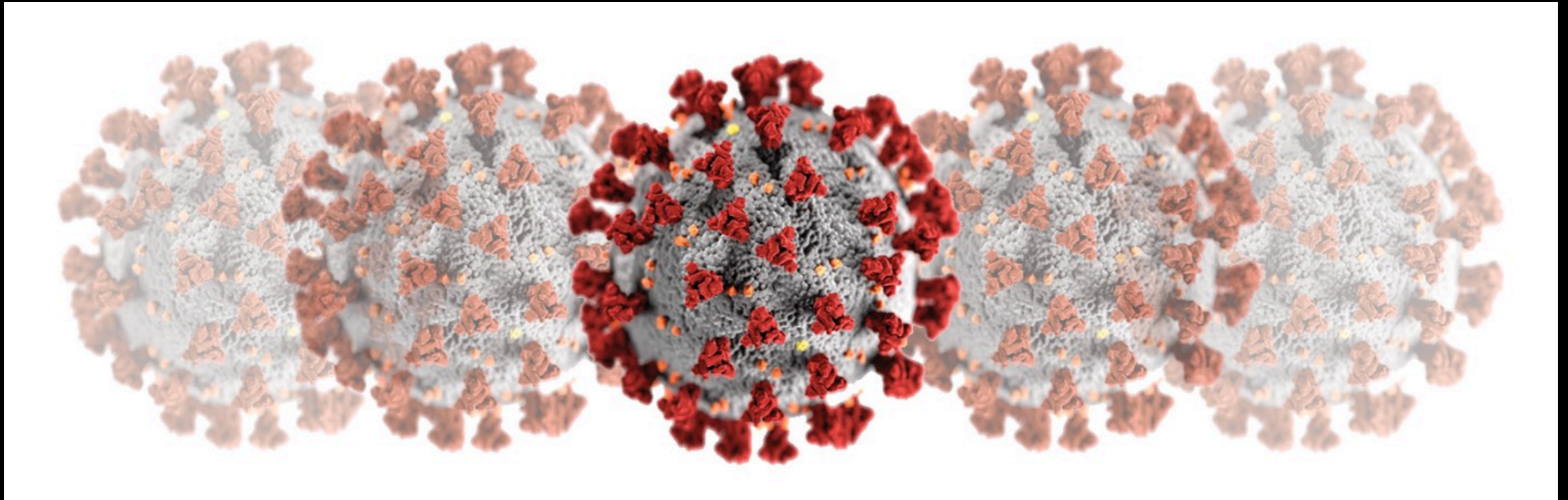


*"There are known
knowns. These are
things we know that we
know. There are known
unknowns. That is to
say, there are things
that we know we don't
know. But there are also
unknown unknowns.
There are things we don't
know we don't know."*

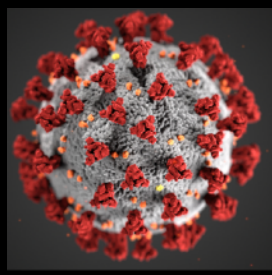
Donald Rumsfeld



The virus



Coronaviruses - Family of respiratory viruses, named for the crown-like spikes on their surface

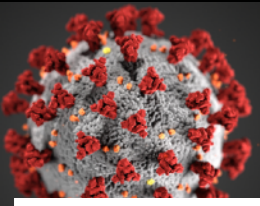


Why COVID-19?

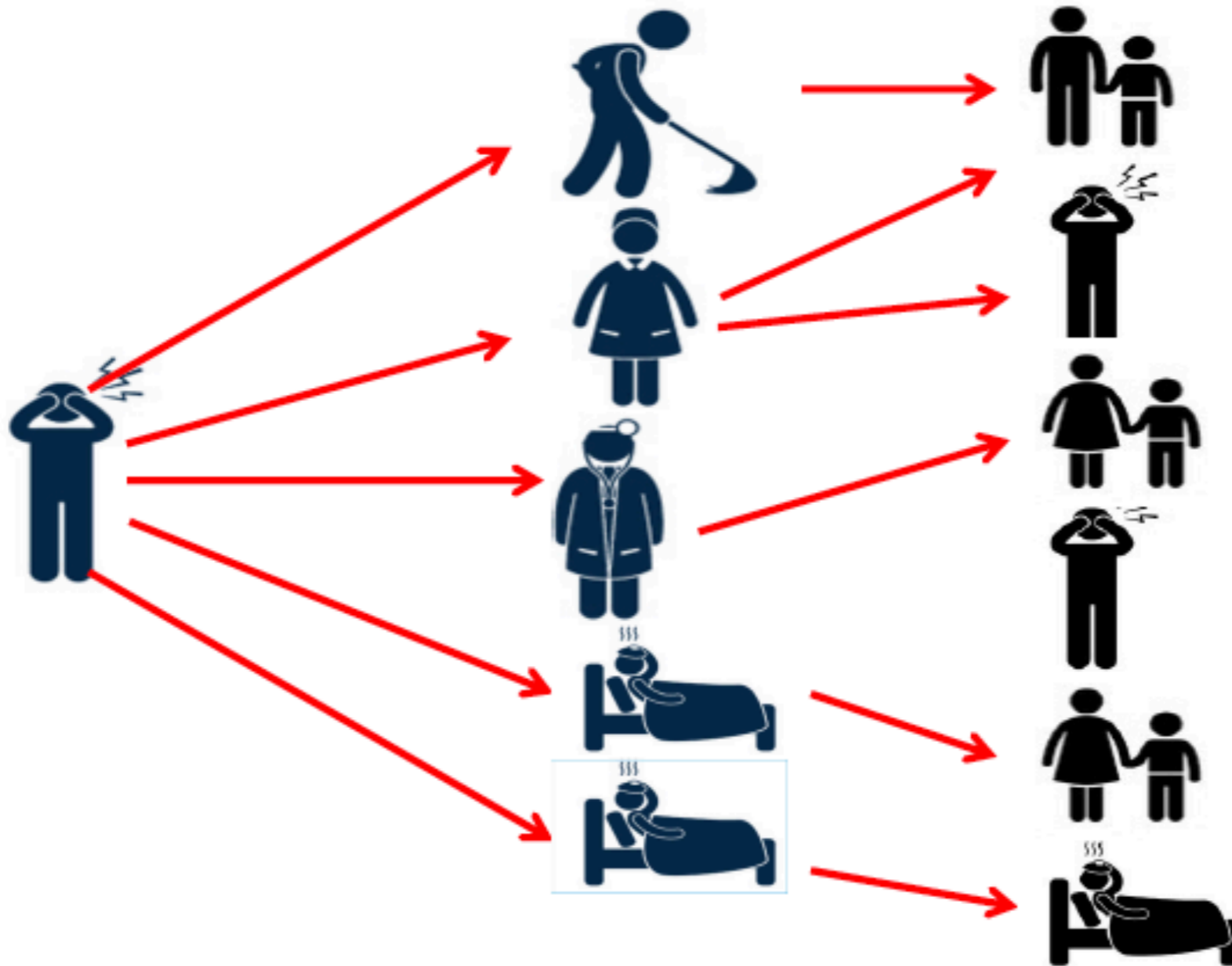
COrona- VIrus Disease -2019

- Mutates frequently quickly, acquires new qualities
- Has been circulating for decades amongst humans
- Cause range of diseases

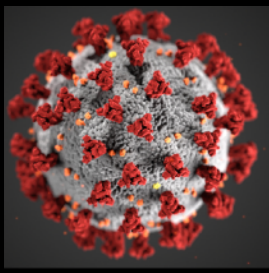




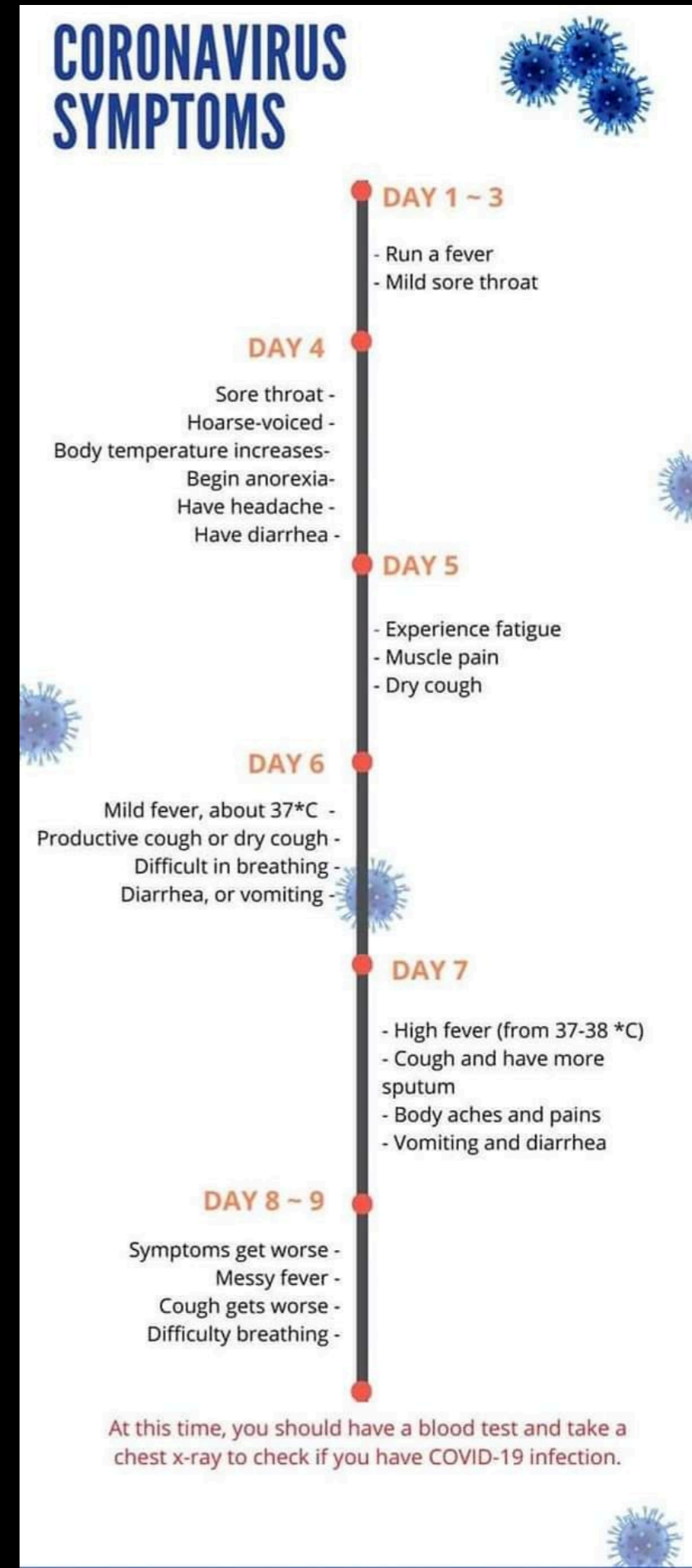
Who is at risk of infection?

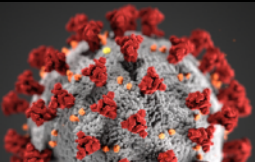


Everyone



What are the symptoms of COVID-19?





Symptoms of COVID-19



Early Stage:

Fever (>38C)

AND

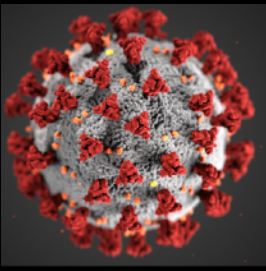
Respiratory symptoms:

- Cough
- Shortness of breath
- Runny nose
- Weakness
- Malaise
- Nausea/vomiting
- Diarrhea
- Headache

Advanced Stage:

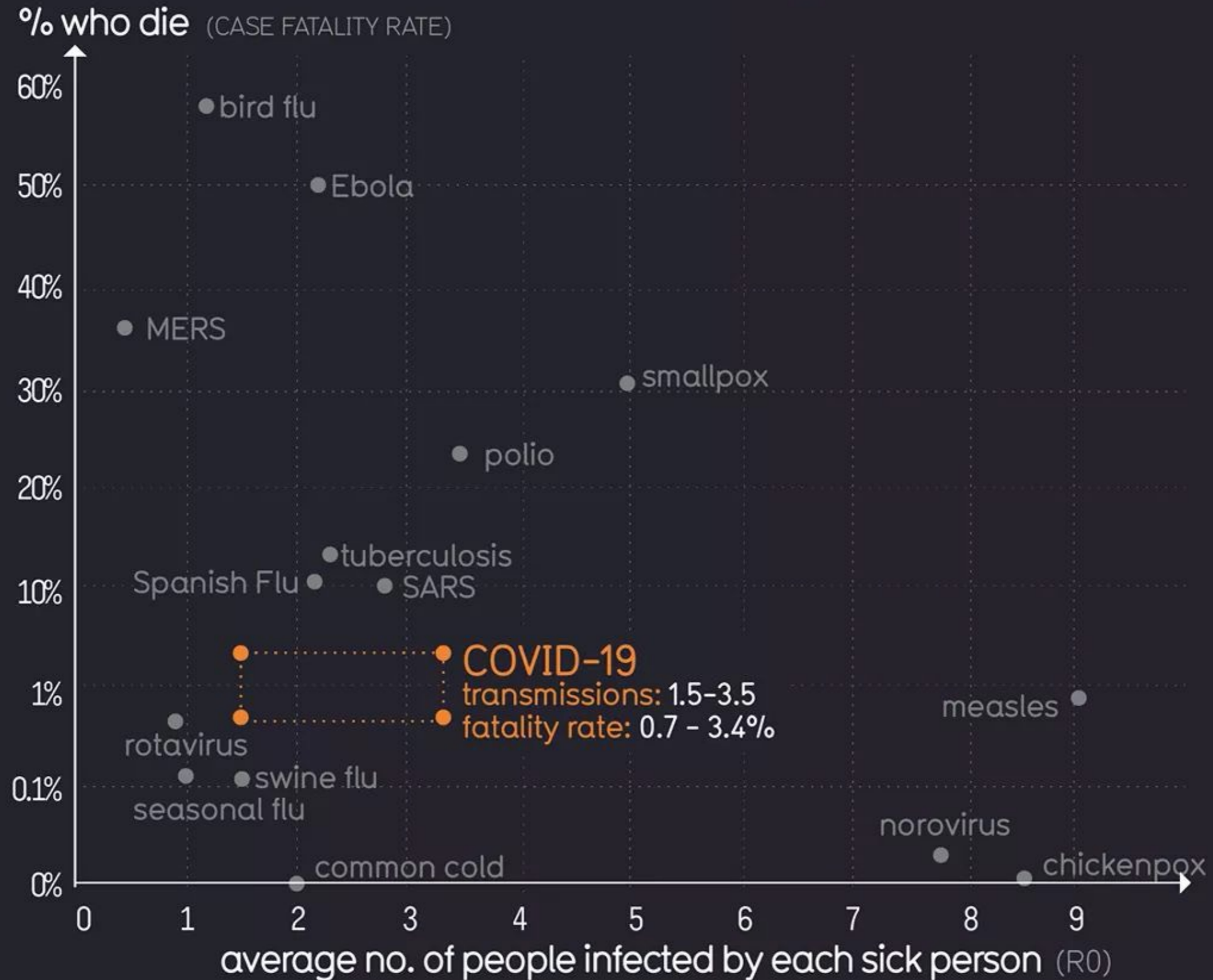
All of the earlier symptoms plus

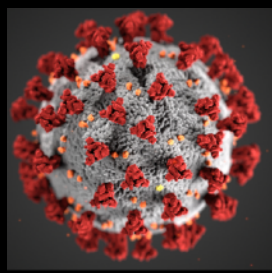
- Pneumonia
- Bronchitis



How Contagious & Deadly is It?

We don't fully know yet but it's in **this range**

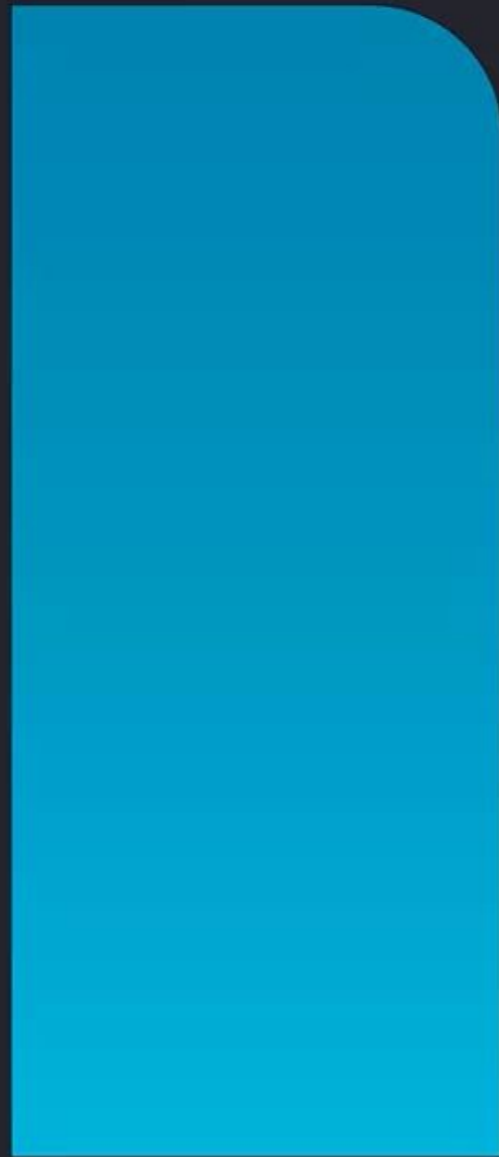




The Majority of Infections are Mild

Seriousness of symptoms

80.9%



MILD
Like flu, stay at home

13.8%

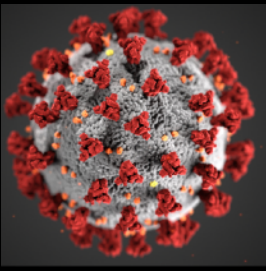


SEVERE
Hospitalization

4.7%

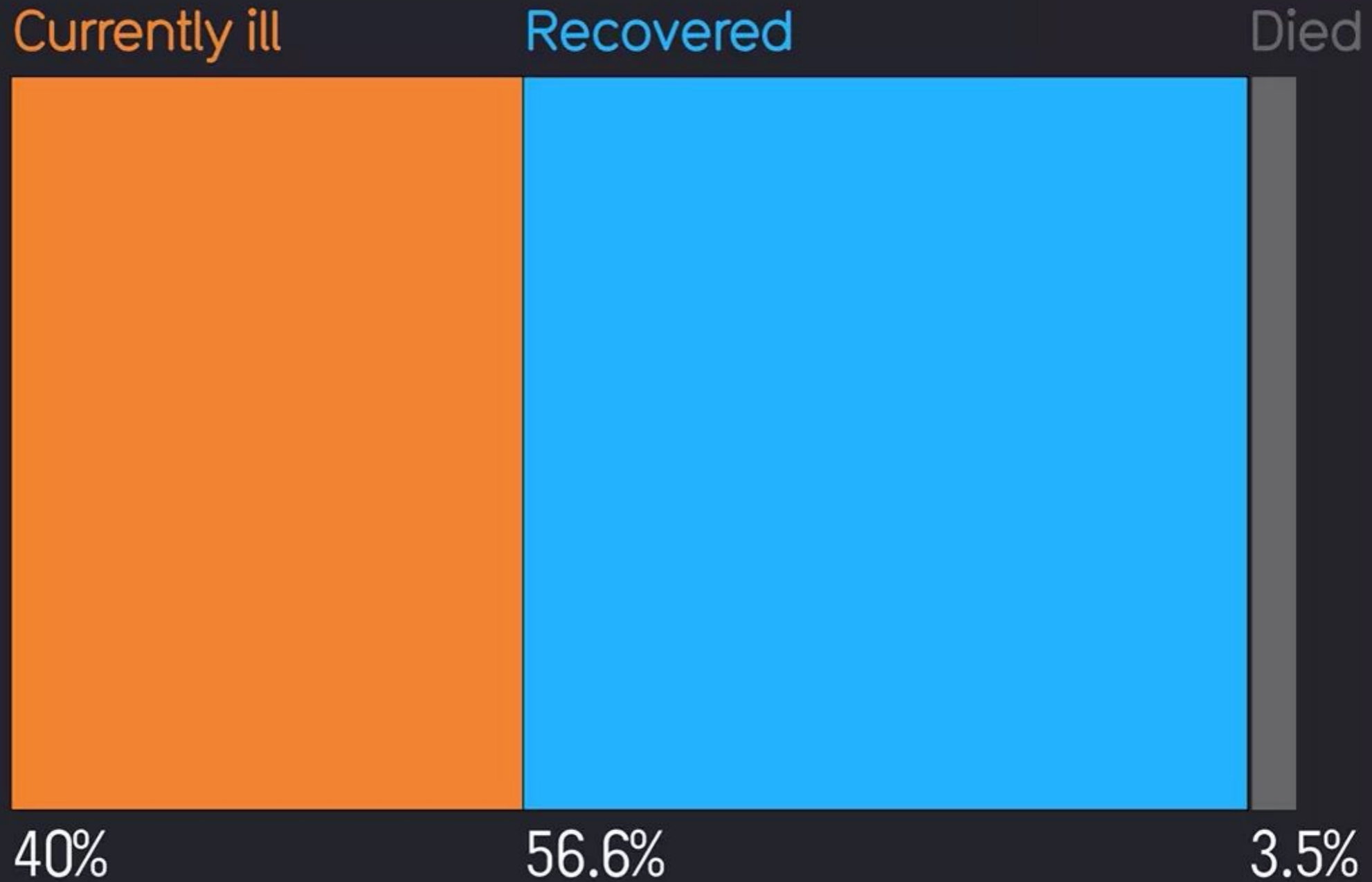


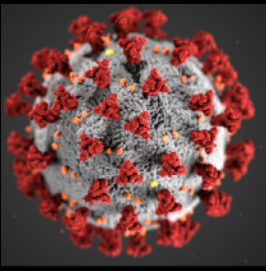
CRITICAL
Intensive care



The Majority of People Recover

Of total worldwide confirmed cases...



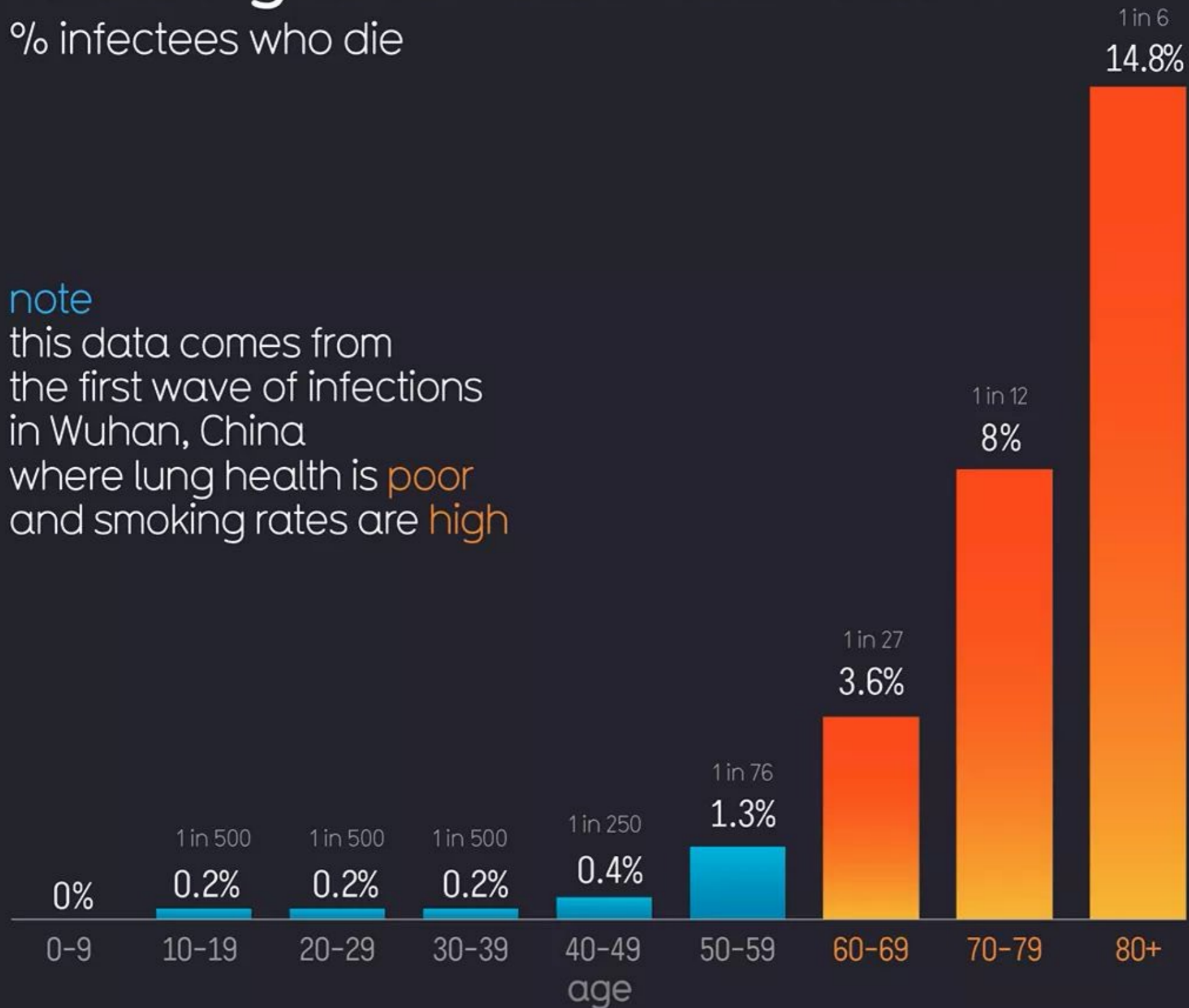


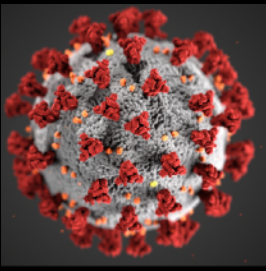
Those Aged 60+ are Most At Risk...

% infectees who die

note

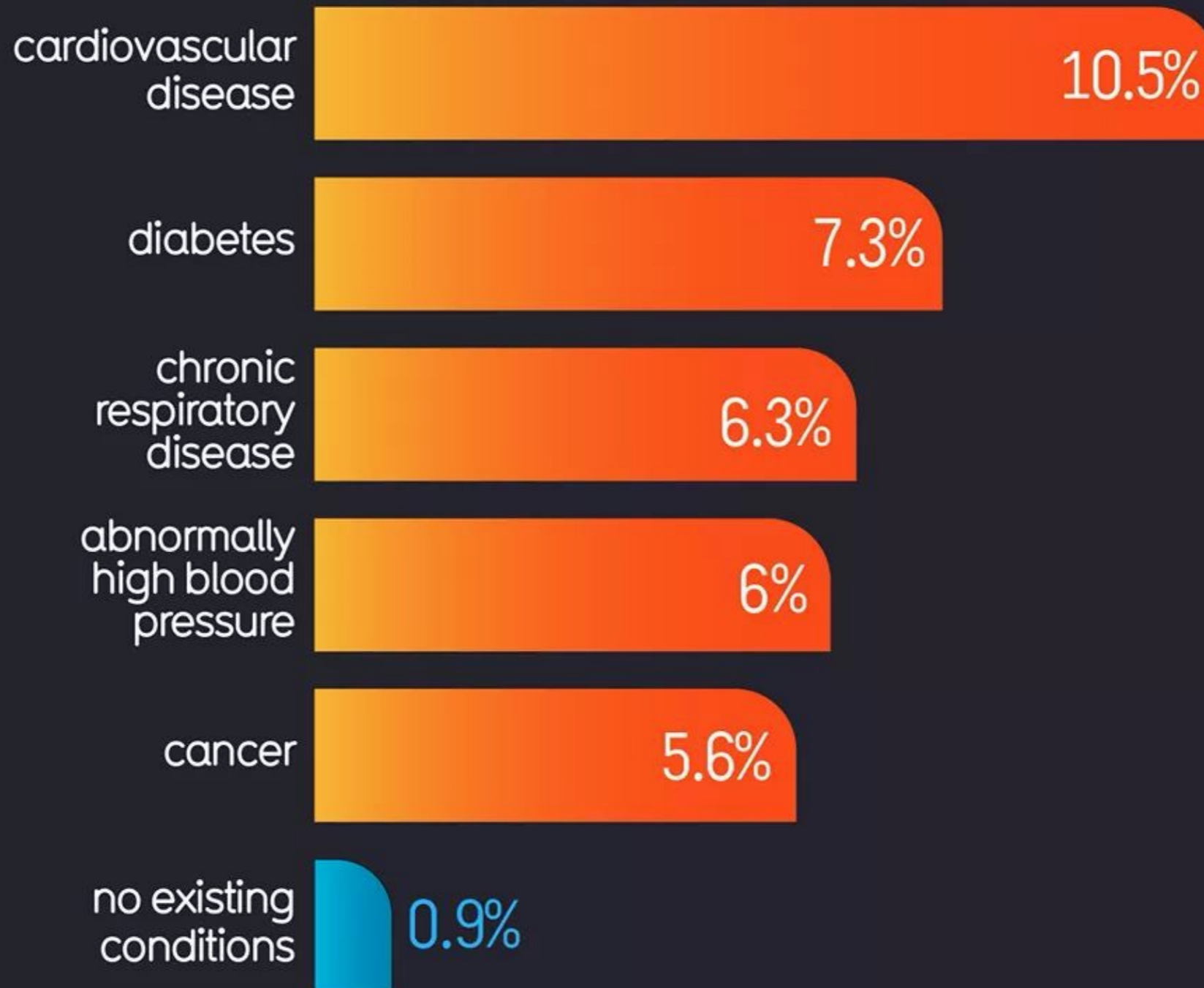
this data comes from the first wave of infections in Wuhan, China where lung health is **poor** and smoking rates are **high**

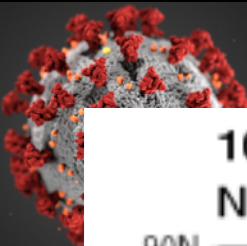




Especially Those with Existing Conditions

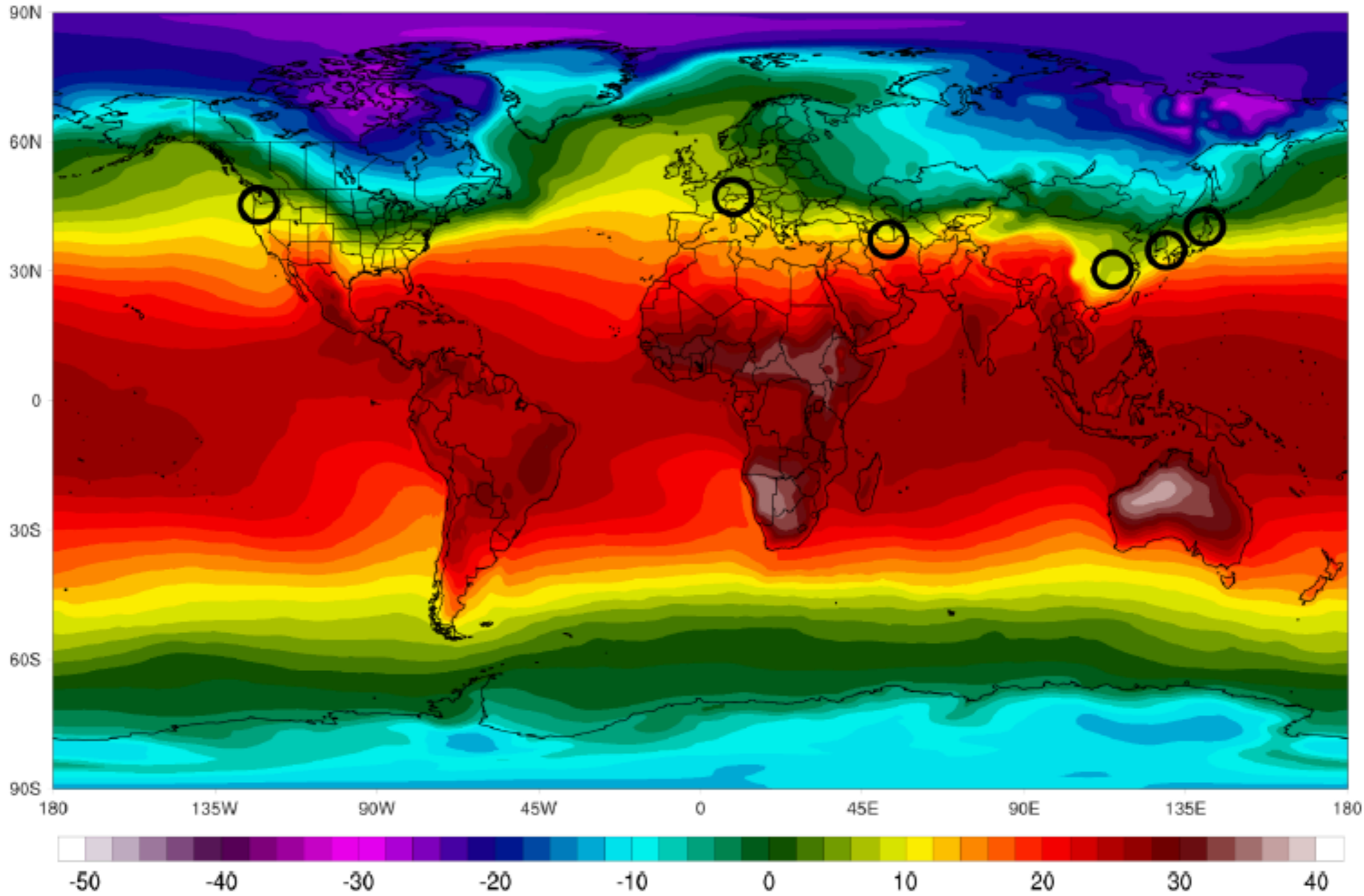
% with other *serious ailments* who die

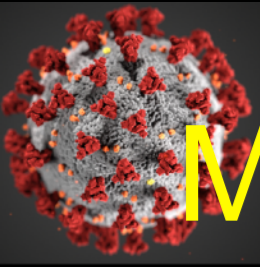




1000hPa Temperature (°C) NDJFM 2019

ECMWF ERA-Interim





Myth: COVID-19 will die out in summer and will not reach warm countries

From the evidence so far, the new coronavirus can be transmitted in ALL AREAS, including areas with hot and humid weather.

Regardless of climate, adopt protective measures if you live in, or travel to an area reporting COVID-19.

The best way to protect yourself against COVID-19 is by frequently cleaning your hands. Eliminate viruses that may be on your hands and avoid infection that could occur by then touching your eyes, mouth, and nose.

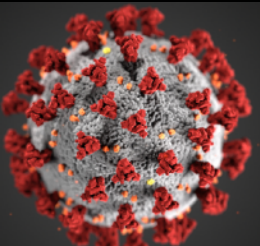
FACT:

The new coronavirus can be transmitted in areas with hot and humid climates



#Coronavirus

#COVID19

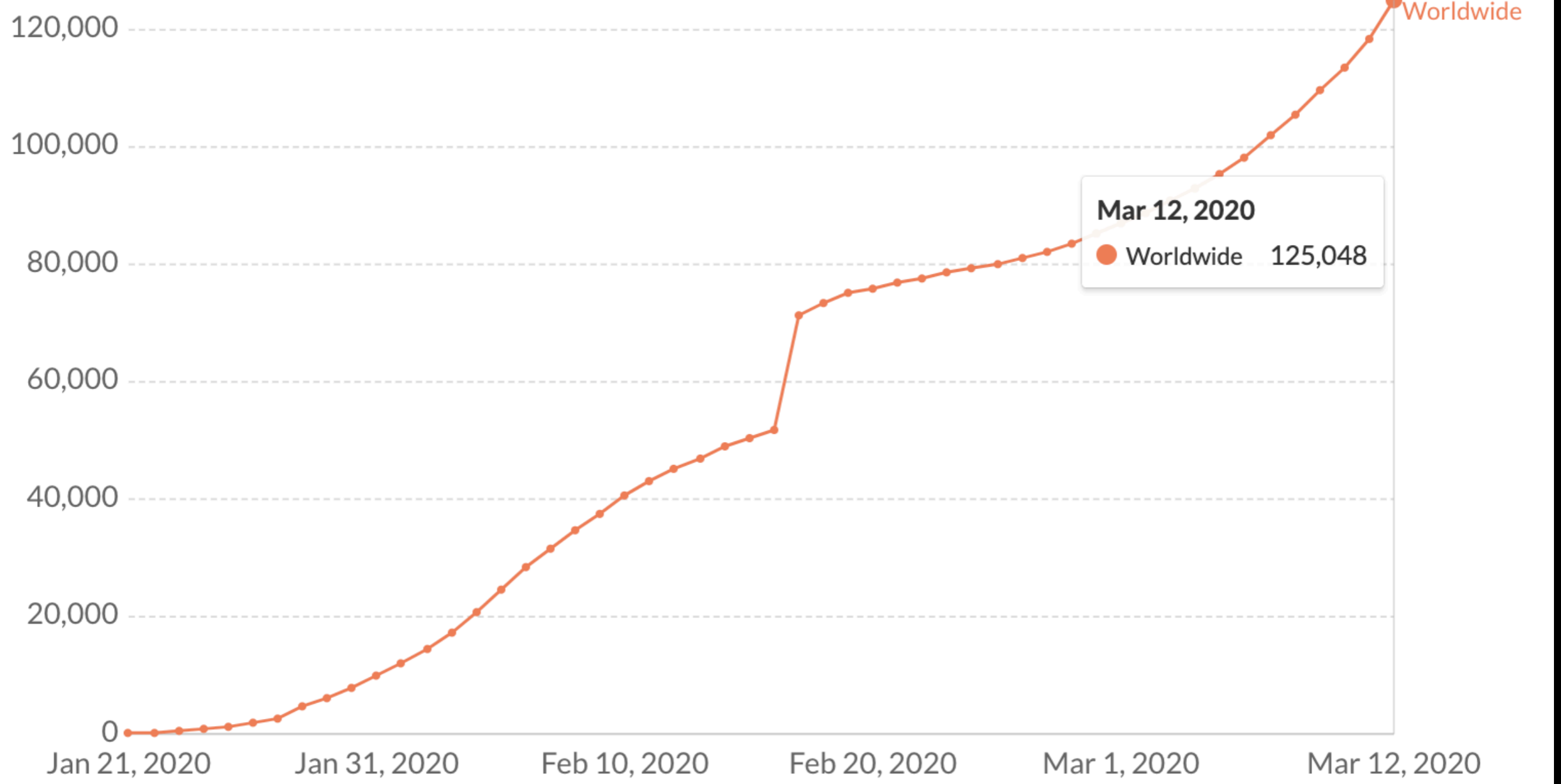


Total confirmed COVID-19 cases

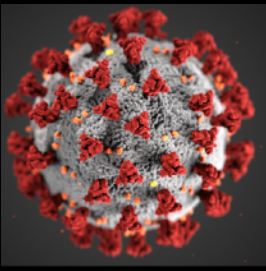
The large increase in the number of cases globally and in China on Feb 17 is the result of a change in reporting methodology. It is explained at OurWorldInData.org/Coronavirus

Our World
in Data

LINEAR



Source: World Health Organization daily Situation Reports [COVID-19]



How does COVID-19 compare with Seasonal flu?

Case fatality rates: COVID-19 vs. US Seasonal Flu

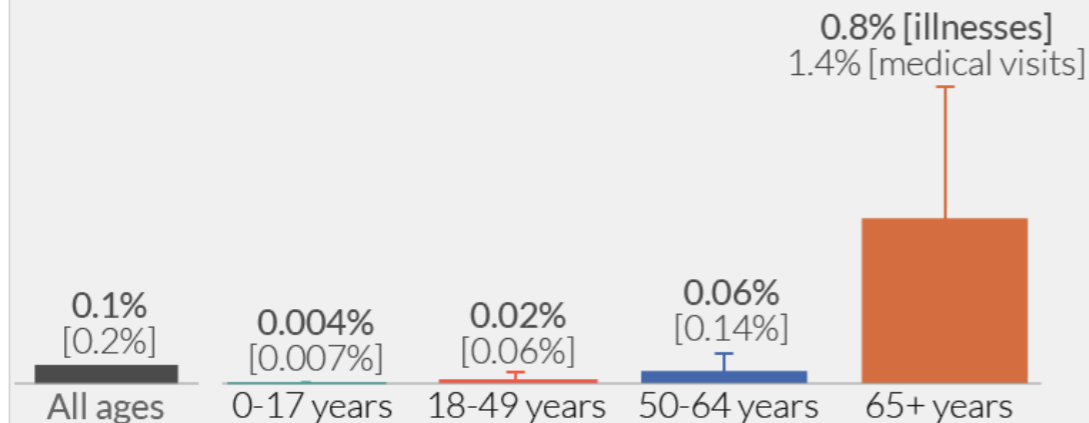
Our World in Data

Case fatality rate (CFR) is specific to a location and time. It is calculated by dividing the total number of deaths from a disease by the number of confirmed cases.

Seasonal Flu

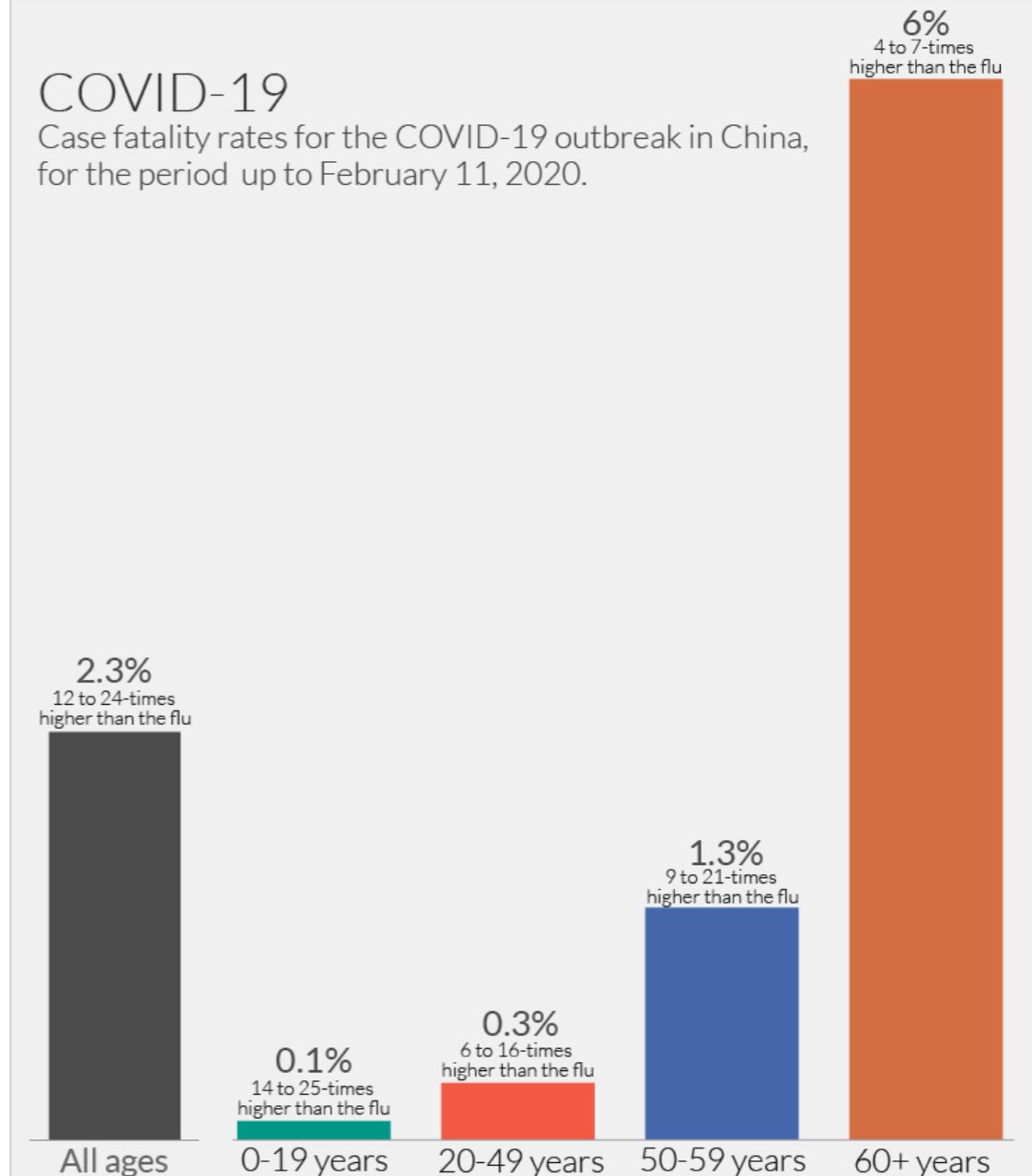
Case fatality rates for the influenza season 2018-19 in the USA.

Symptomatic cases are calculated based on models which aim to account for underreporting – figures based on medical visits are therefore also shown in square brackets, which may be a closer comparison to COVID-19 case fatality rates.

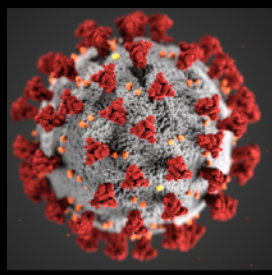


COVID-19

Case fatality rates for the COVID-19 outbreak in China, for the period up to February 11, 2020.

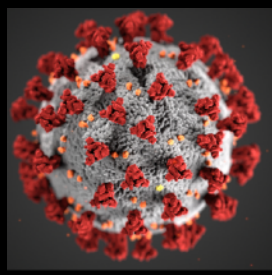


Data: Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. *Vital surveillances: the epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19)—China, 2020*. China CDC Weekly. US Influenza data is sourced from the US Centers for Disease Control and Prevention (CDC).

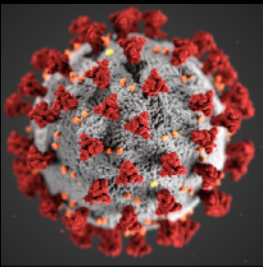


Why is there breathing difficulty?

- Both lungs get affected by a pneumonia, which can later lead to a condition called ARDS
- The greater the number of associated health problems that the person has, the greater is the risk of multiple organs failing, and of death



So what should one do?



"plus ça change, plus c'est la même chose"

"the more things change, the more they stay the same"



THE Anatomy of A PLAGUE DOCTOR EUROPE, 1616-1721

GLASS EYES

PROTECTIVE PEEPERS

Built into the hood, these allowed the doctor to see without exposing their eyes to the outside air. The entire design of the outfit, attributed to French physician Charles de Lorme and extensively worn during devastating outbreaks in mid 17th-century Europe, was to conceal every part of the body from poisonous air or 'miasma' that was thought to cause disease.

CANE

MULTIPURPOSE INSTRUMENT

Despite their elaborate protection, doctors still kept contact with infected patients and the poorest echelon of society, who they were tasked with treating, to a minimum. The cane was used to examine infected victims, instruct family members on where and how to treat the wounds and generally keep people at bay.

OVERCOAT

GREASY BODY ARMOUR

The full-length leather coat covered the doctor from head to toe. Aside from metal armour, leather was the toughest wearable material around and so was considered robust enough to keep the plague at bay. For added protection, all the garments were covered in wax or animal fat to further repel miasma and sufferers' bodily fluids.

BREECHES

PROTECTING THE VULNERABLE

One of the plague's nastiest symptoms was its vigorous early assault on the lymph glands around the groin, neck and armpits. For this reason, the heavy hood covered the neck and upper chest, while heavy leather breeches were worn on the legs.



HAT

HEALER'S HELMET

The leather hat was a staple uniform for Medieval doctors and the wide brim was thought to add protection. It was worn by the plague doctors during the 1665 London outbreak, despite the fact most weren't qualified physicians - the majority had fled London along with their rich clientele. However, the ineffective treatments administered by both meant this made little difference to sufferers.

BEAK MASK

OMINOUS AVIAN

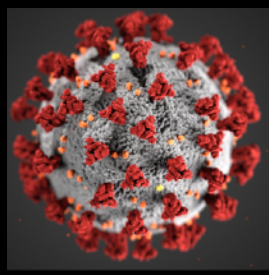
The beak was the most recognisable part of the doctor's outfit. It's long cavity was stuffed with herbs, flowers and essential oils in the belief this would counteract miasma. But its sinister design was known to inspire terror in the sick.

GLOVES

PLAGUE GAUNTLETS

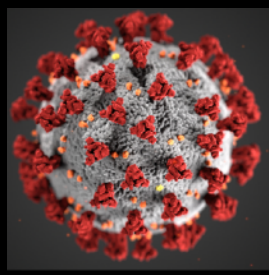
The final covering of the hands may have kept the doctors safe, but in actual fact they did more harm than good, spreading the disease as they visited victims and condemning entire families who they ordered to be quarantined alongside an infected member of the household.





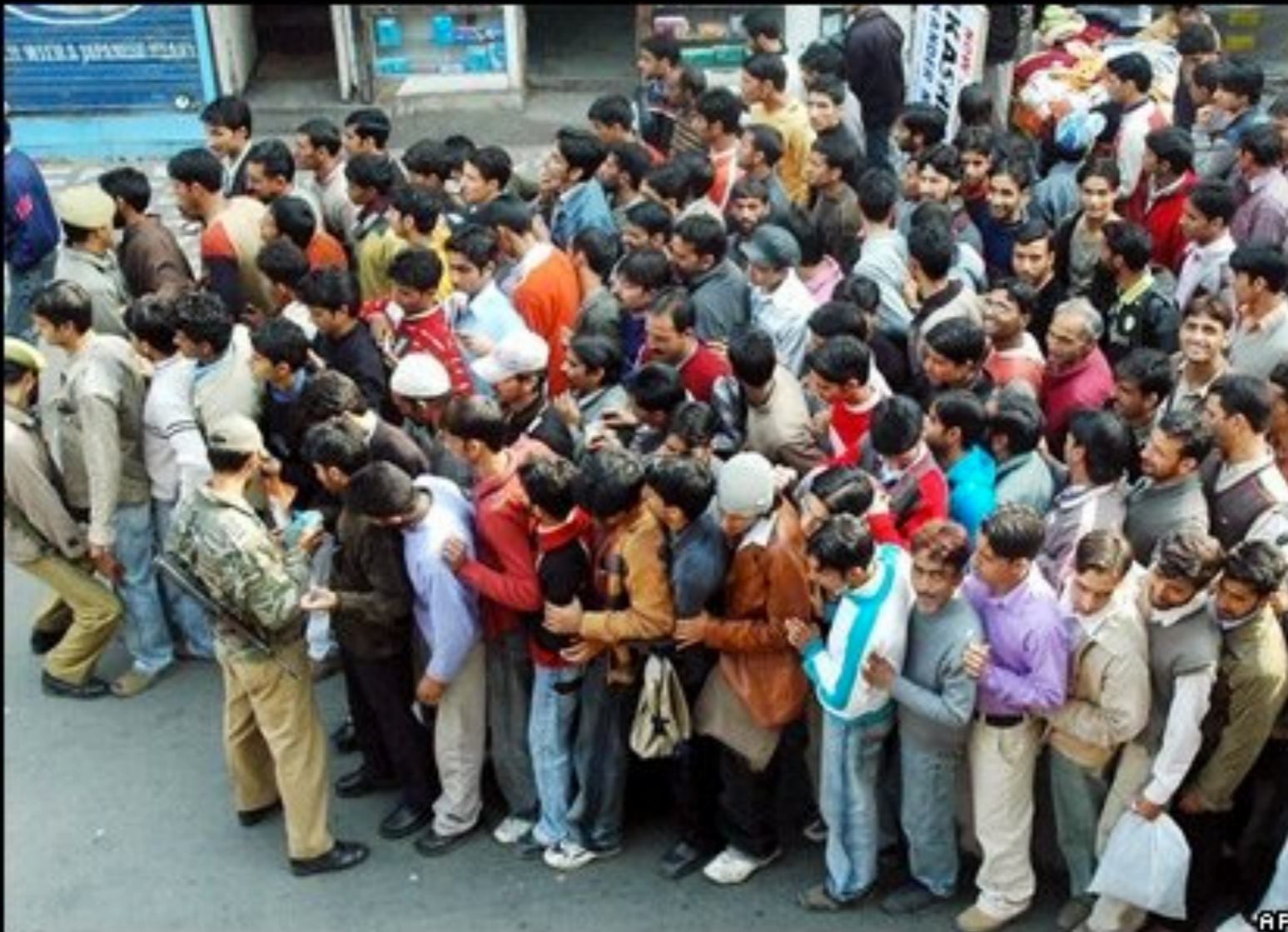
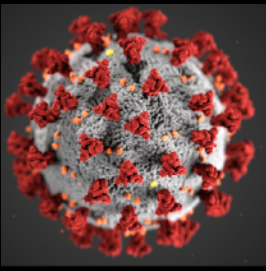
General Precautions

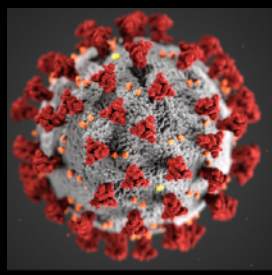
- **Follow the culture of 'Namaste'**
- **Practice hand-hygiene at all times**
- **Avoid close contact, with anyone showing symptoms of respiratory illness such as coughing and sneezing.**
- **Wear a mask only if you have respiratory symptoms such as cough or runny nose**
- **Maintain safe food practices, i.e eat well-cooked food which has been prepared hygienically**
- **Avoid travel to farms, live animal markets or where animals are slaughtered**



Social distancing

- Keep preferably at two arm's length, minimum one arm length
- Maintain a distance of optimally 6 feet, minimum 3 feet from a person who is sneezing or coughing

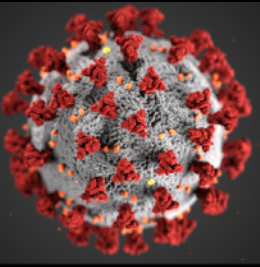




Wash hands frequently, correctly

Use a hand sanitiser

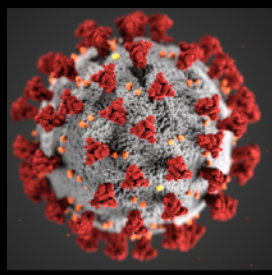
Use an alcohol-based sanitizer that contains at
least 70% alcohol.



The germs and bacteria hide at a place, where it is hard to kill them. So, we need to wash our hands properly. Now follow with me these seven steps.

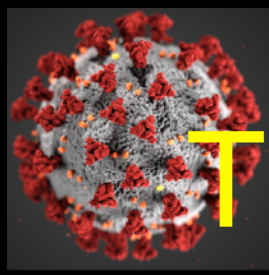
Washing hands instructions





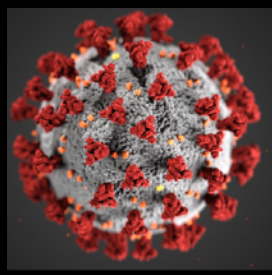
Hand washing



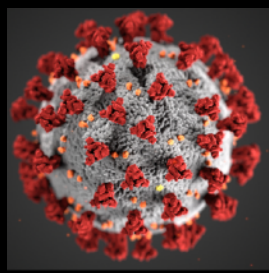


The coronavirus can sit on surfaces for 6-12 hours, maybe even longer

- Clean and disinfect frequently touched items and surfaces with a regular household cleaning spray or wipe.
 - It is thought that the corona virus may survive on surfaces for a few hours or up to several days.
- Avoid touching your eyes, nose, and mouth with unwashed hands.

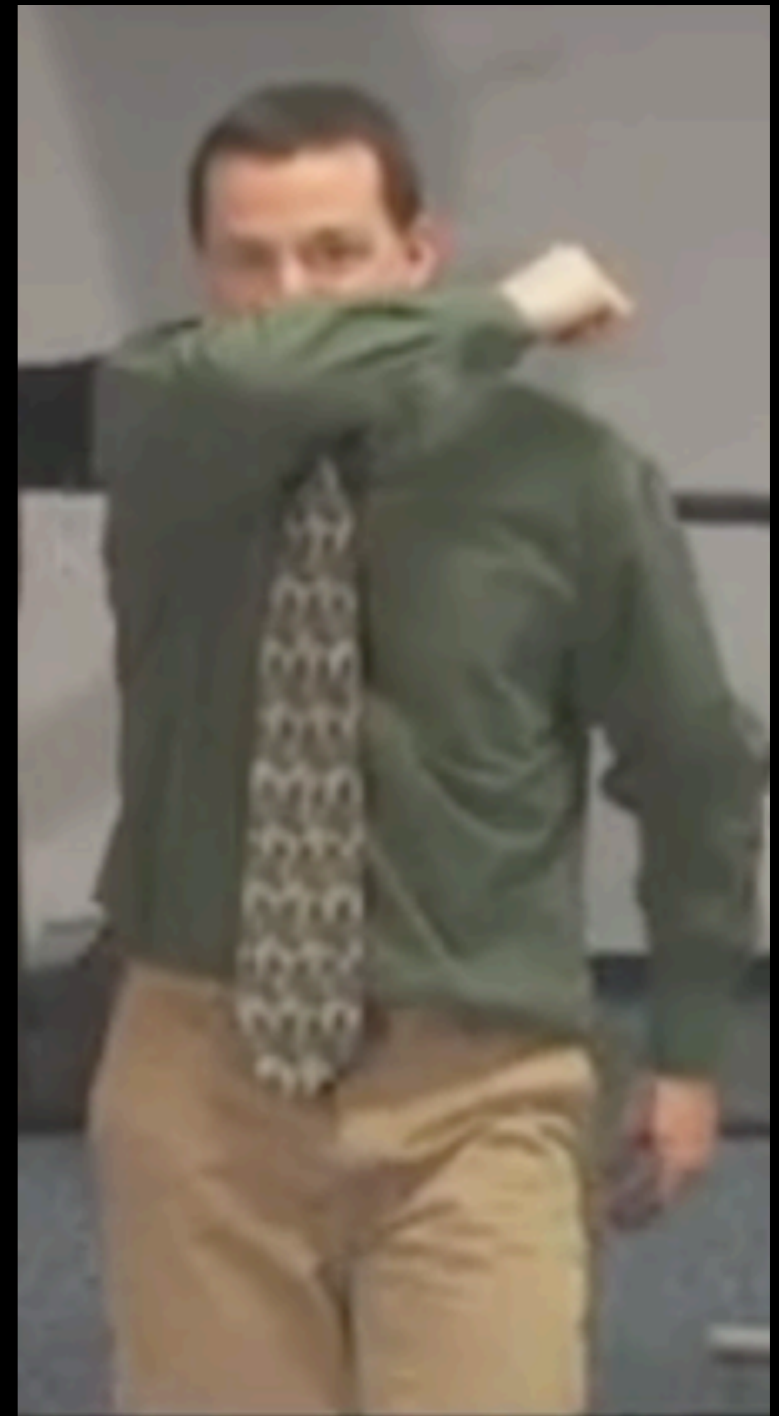


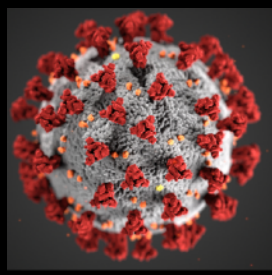
- Avoid close contact with people who are sick
- Stay home if **you** are sick



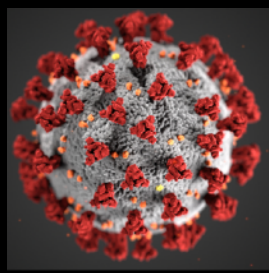
Cough etiquette

- Cover your mouth and nose when you cough or sneeze
- How?
- If you use a tissue, cough into the tissue and DO NOT stuff it back into your pocket!
- Throw the tissue into a covered trash can and wash your hands



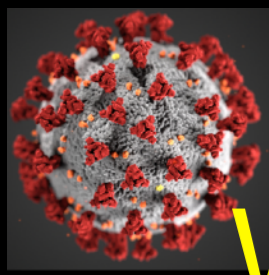


ТЕЛЕГРАМ КАНАЛ - КБ



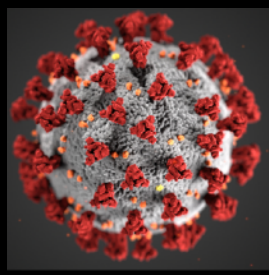
Self -quarantine

- It may take up to 14 days to develop symptoms once exposed to this virus.
- If you have traveled to an area affected by this virus, or come into contact with someone who has travelled abroad in that time, you should stay home for at least 14 days.
- Stay informed and do not panic. Get your information from approved sources- the WHO, CDC or India government health authorities e.g., Dept of HFW



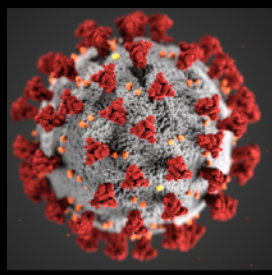
When should you seek medical help?

- If cold or fever alone, stay at home and use a mask
- Avoid close contact with others
- If you have fever, troublesome cough and shortness of breath, only then seek medical help
- In Bangalore, at the moment, the place to go to is RGICD
- BMCRI also has testing facilities



Face mask myths

- Face masks were designed to prevent the surgeon from transmitting infection to the patient, not to prevent him from getting infected
- Three-ply surgical masks are enough for this purpose
- N-95 masks are needed only by doctors performing procedures that cause the respiratory secretions to get aerosolised
- DO NOT use up masks unnecessarily.



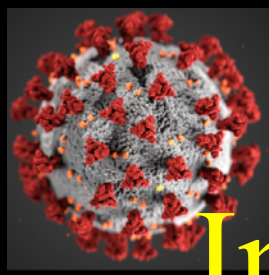
Use of masks by general public

4.1. Persons having no symptoms are not to use mask

Medical masks should not be used by healthy persons who are not having any symptoms because it create a false sense of security that can lead to neglecting other essential measures such as washing of hands.

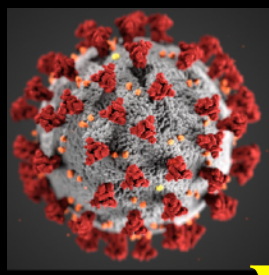
Further, there is no scientific evidence to show health benefit of using masks for non-sick persons in the community.

In fact erroneous use of masks or continuous use of a disposable mask for longer than 6 hours or repeated use of same mask may actually increase risk of getting an infection. It also incurs unnecessary cost.



In such situation, more effective steps are:

- ★ Wash hands frequently with soap and water for 40 seconds. An alcohol based hand sanitizer with 70% alcohol must be used for 20 seconds.
- ★ If hands are dirty or soiled, do not use alcohol based hand sanitizer, but wash hands preferably with soap and water.
- ★ While coughing or sneezing cover nose and mouth with handkerchief, paper tissue. If handkerchief or tissue paper is not available cough into the flexed elbow. Dispose of tissue immediately after use and wash hands.
- ★ Refrain from touching **face, mouth, nose and eyes.**
- ★ Stay at least a metre away from those coughing or sneezing.
- ★ Monitor your body temperature.



When and who should use medical masks (apart from health care worker).

4.2.1. When a person develops cough or fever.

Use of medical three layer masks when ill, will prevent your infection from spreading to others. However you also need to wash your hands frequently to avoid spreading infection to others.

4.2.2. While visiting a healthcare facility.

4.2.3. When you are caring for an ill person.

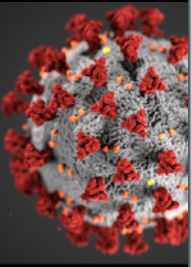
4.2.4. Close family contacts of such suspect/confirmed cases undergoing home care should also use Triple layer medical mask.

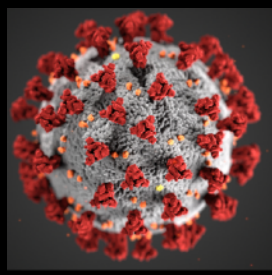
How do I use a face mask?

- 1 Wash hands for at least 20 seconds prior to putting on a face mask.
- 2 Place face mask over nose and mouth. Ensure a tight seal with no gaps and secure elastics or straps.



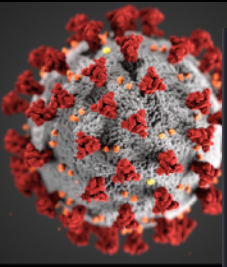
- 3 Avoid touching the front of the face mask. If you do, wash hands for at least 20 seconds.
- 4 Remove the face mask without touching the front. Discard in a closed bin.
- 5 Wash hands again for at least 20 seconds.





Some don'ts

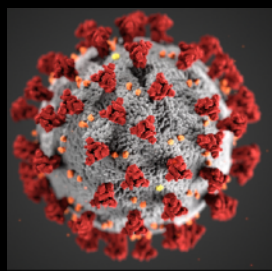
- There is no vaccine, and despite claims to the contrary, its not going to be around for some time.
- Do not post messages and increase the panic - forward only messages that actually come from the WHO, MoHFW or CDC



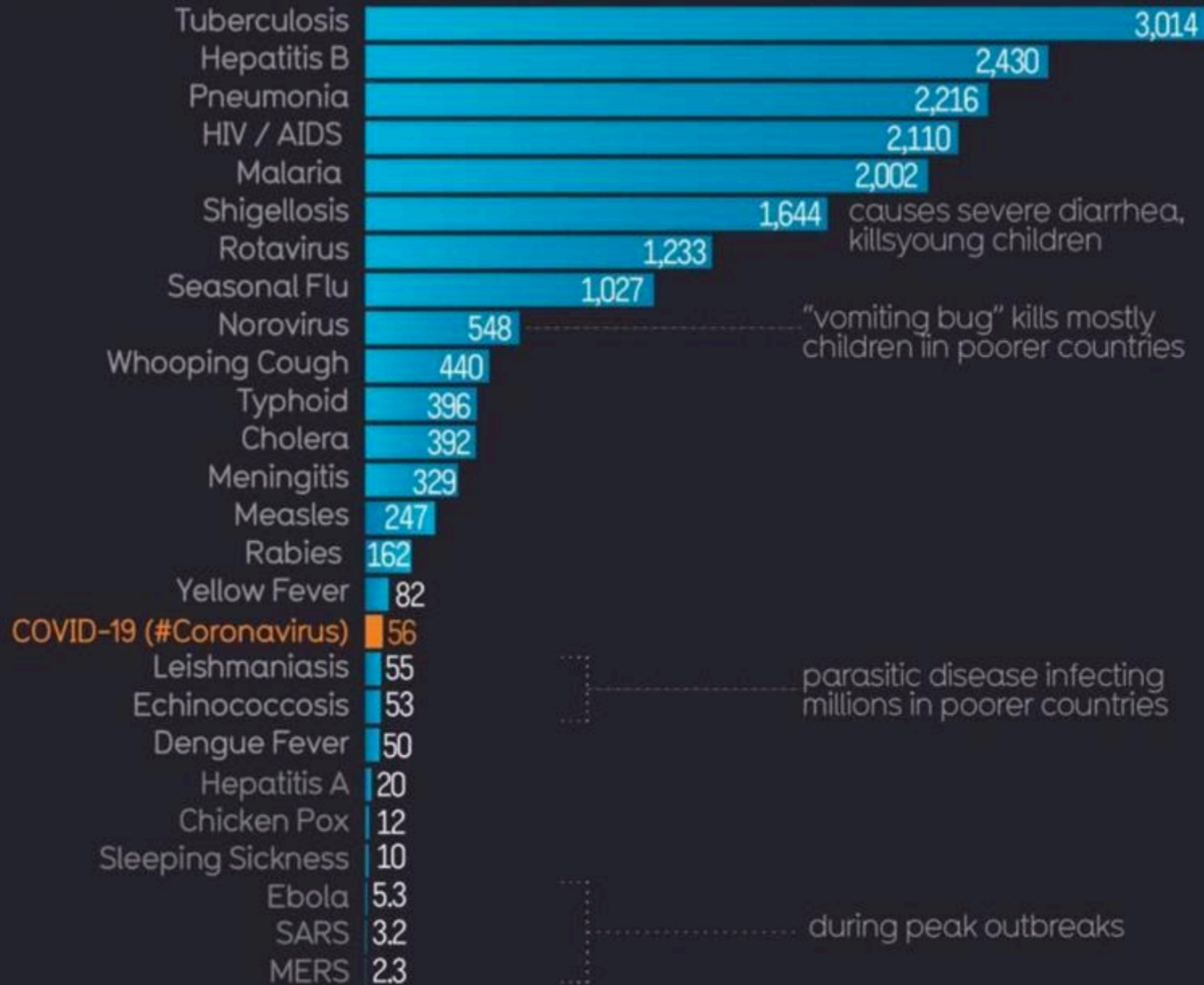
Mentions in the Media

SARS 56.2 million	HIV 40m	MERS 23.2m	Ebola 11.1m	Pneumonia 5m	Measles 2m	TB 2.9m
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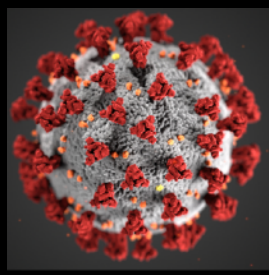
COVID-19 #Coronavirus
1.1 billion



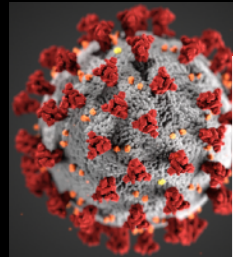
Disease Deaths per Day Worldwide



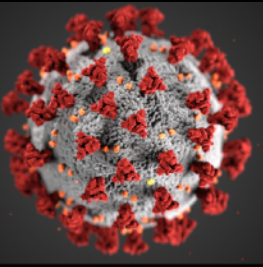
updated 9h Mar 2020



- Don't go around buying up all the masks, sanitisers and unevidenced medicines in sight!
PLEASE!



To the people who have bought 27 bottles of soap leaving none on the shop shelves for others, you do realise that to stop getting coronavirus, you need other people to wash their hands too,



What about companies?

Chart 18: Slide from a Webinar of the American Hospital Association, communicating best guesses on the impact of the Coronavirus in the US healthcare system in 2020

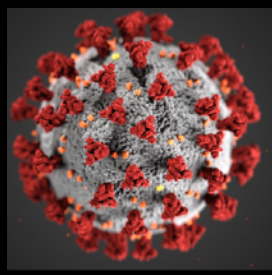
Best Guess Epidemiology

- $R_0 = 2.5$; Doubling time 7-10 days
 - Community attack rate = 30-40%
 - Cases requiring hospitalization = 5%
 - Cases requiring ICU care = 1-2%
 - Cases requiring ventilatory support = 1%
 - CFR = 0.5%
- Community epi wave 2 months
- US: 96 million cases
- US: 4.8 million admissions
- US: 1.9 million ICU
- US: 1 PPV
- US: 480,000 deaths
- **PREPARE FOR DISEASE BURDEN ROUGHLY 10X SEVERE FLU SEASON**



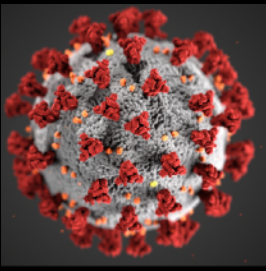
AHA webinar

Source: *Dr. James Lawler, professor at the University of Nebraska Medical Center, for the American Hospital Association, via Business Insider, <https://www.businessinsider.com/presentation-us-hospitals-preparing-for-millions-of-hospitalizations-2020-3>*



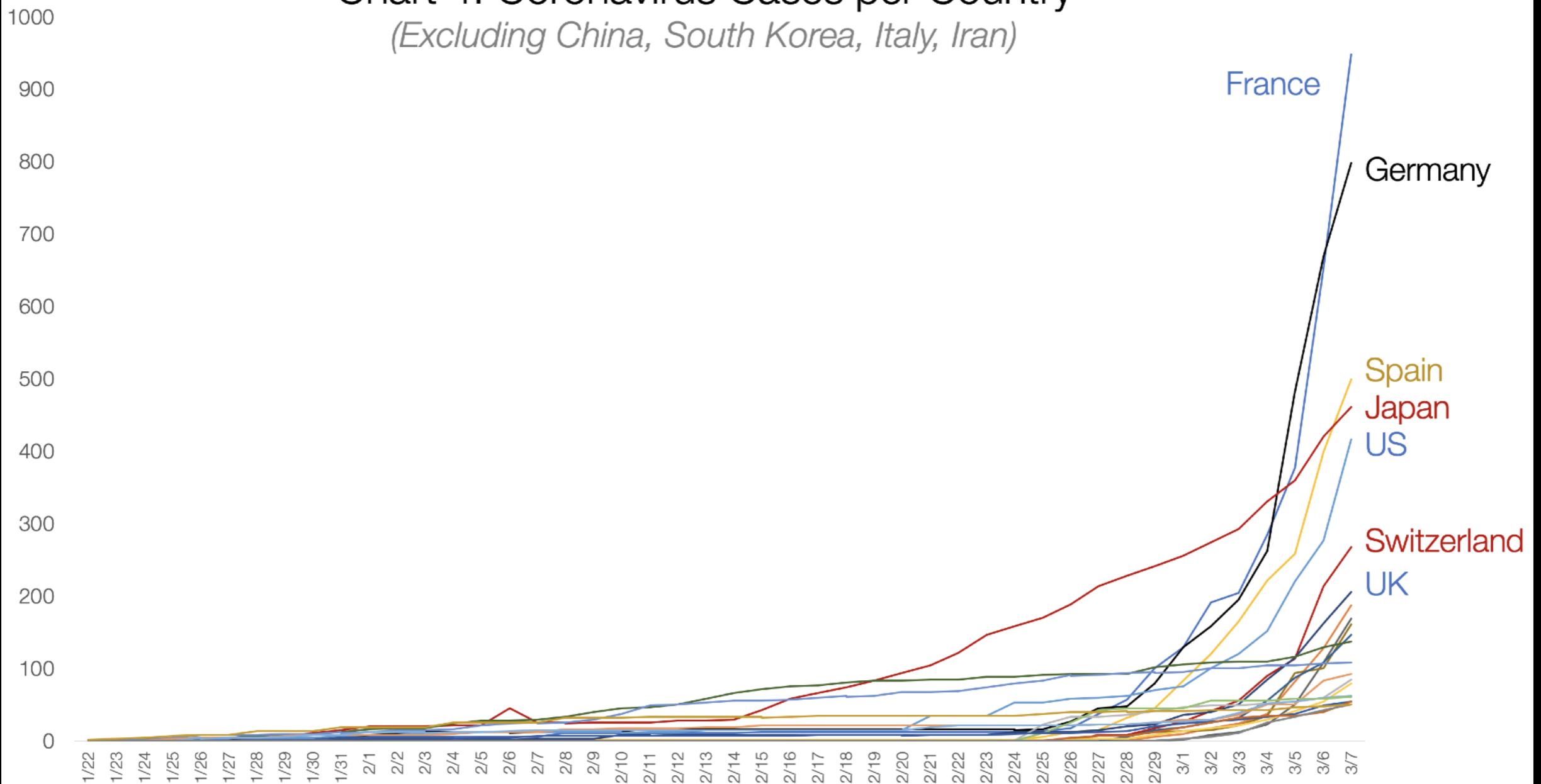
***“Never let a
good crisis go
to waste”***





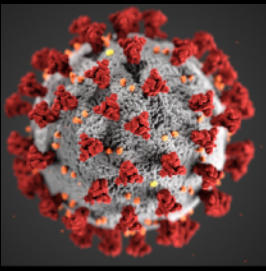
What about companies?

Chart 4: Coronavirus Cases per Country
(Excluding China, South Korea, Italy, Iran)



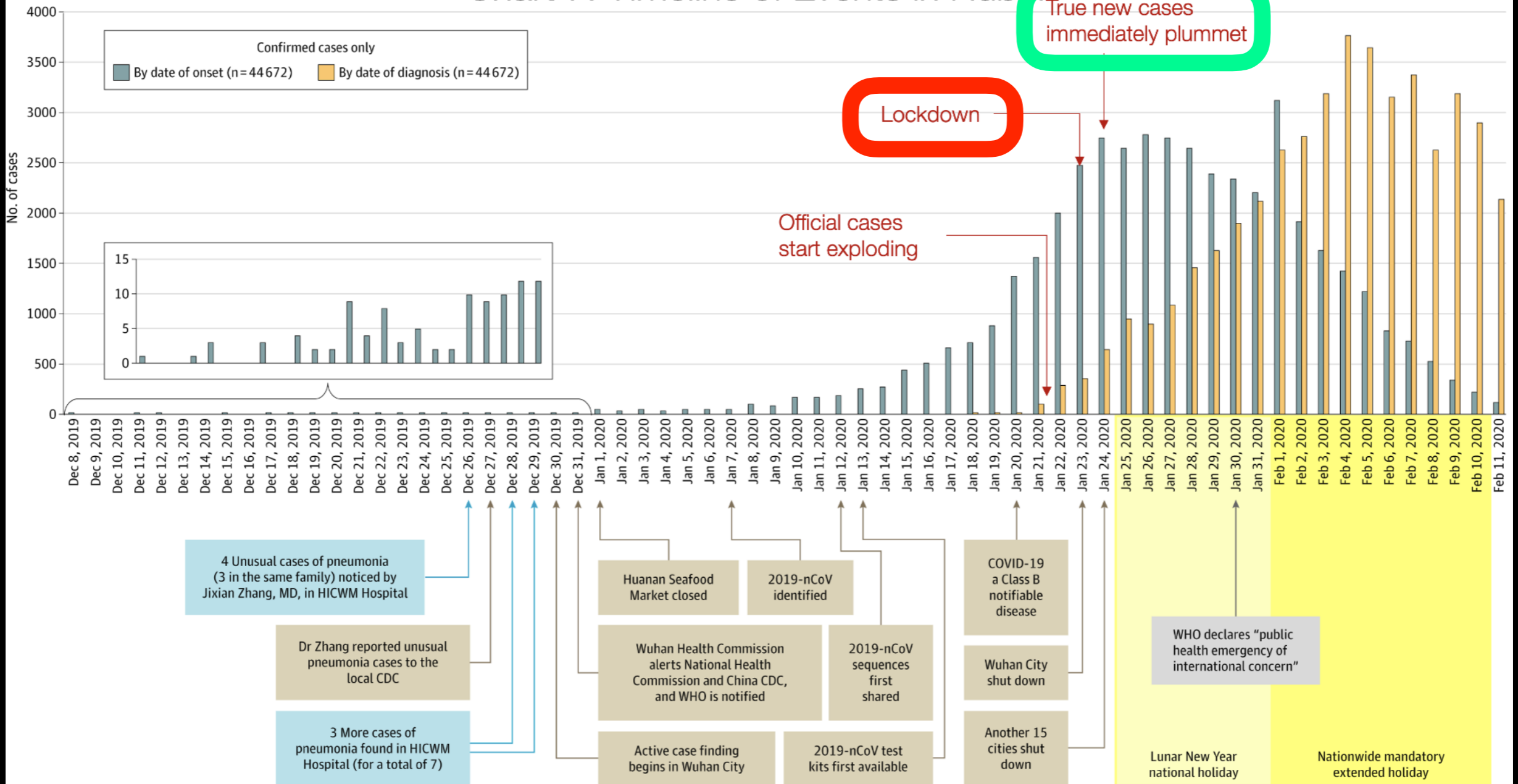
Source: Tomas Pueyo analysis from primary data from Github:

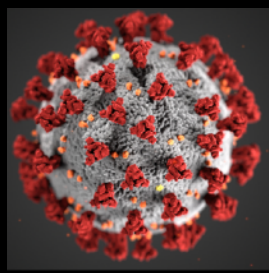
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv



What about companies?

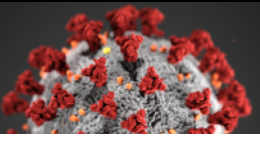
Chart 7: Timeline of Events in Hubei



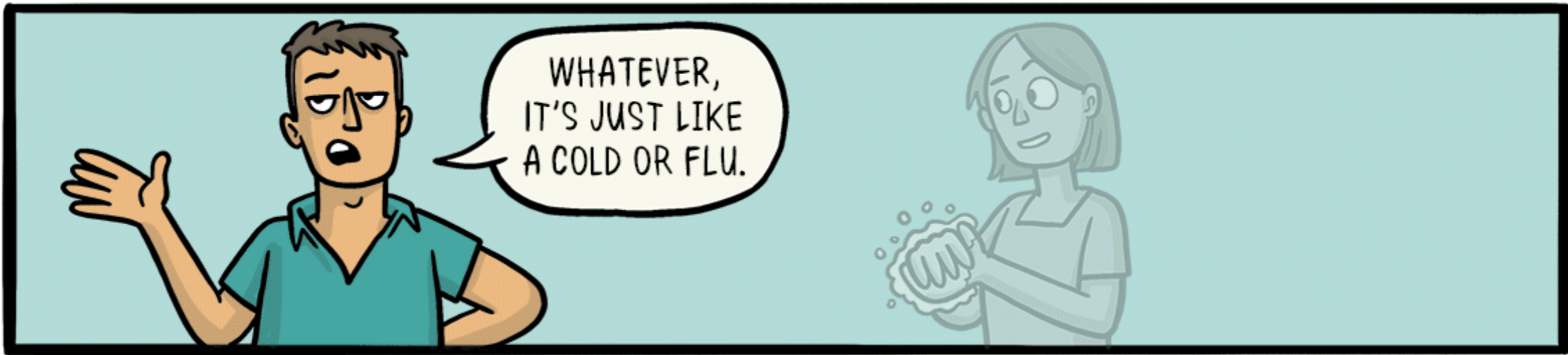
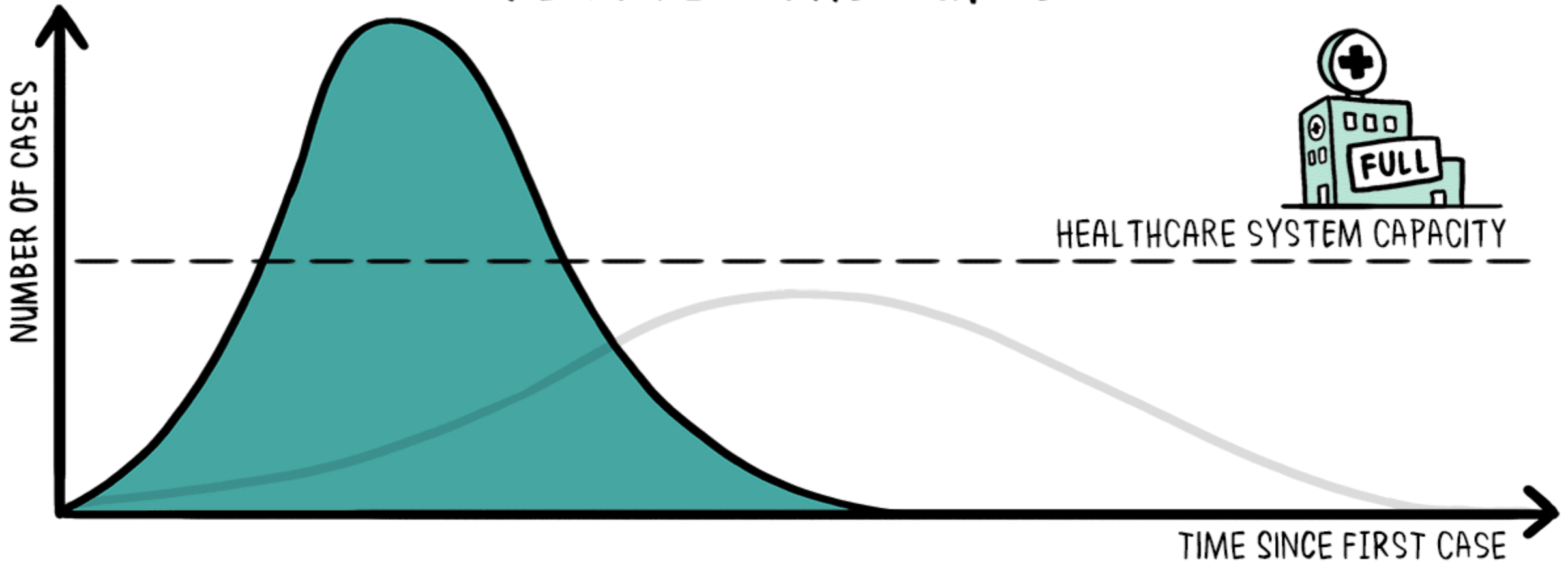


Consider...

- Work from home
- Workplace distancing
- Provide hand sanitisers
- Educate employees
- Work with the government and health authorities

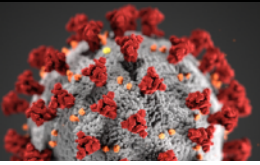


FLATTEN THE CURVE

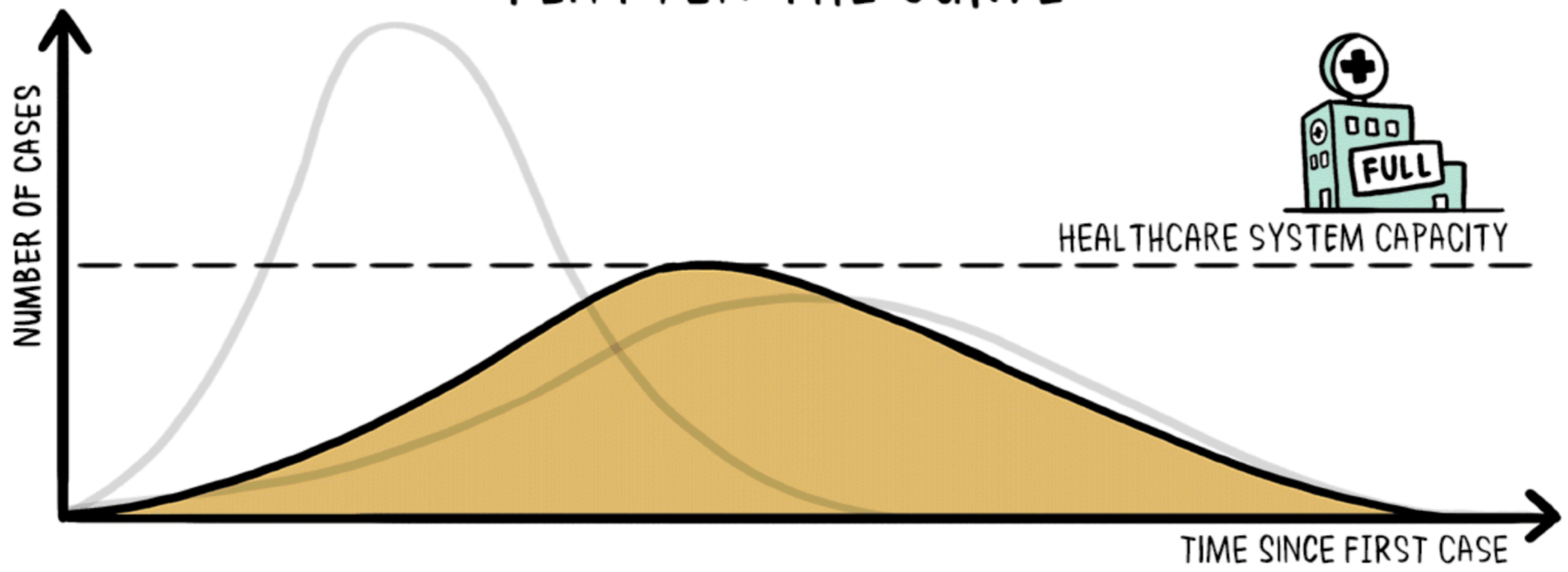


@SIOUXSIEW @XTOTL @THESPINOFFTV

'ADAPTED FROM @DREWAHARRIS, THOMAS SPLETTSTÖBER (@SPLETTE) AND THE CDC' CC-BY-SA



FLATTEN THE CURVE


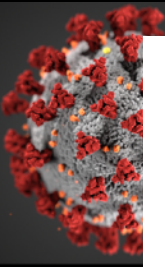


DON'T PANIC BUT BE CAREFUL.

- WASHING HANDS
- NOT TOUCHING FACE
- STAY HOME WHEN SICK

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There was a farmer who grew excellent quality corn. Every year, he won the award for the best grown corn. One year a newspaper reporter interviewed him and learned something interesting about how he grew it. The reporter discovered that the farmer shared his seed corn with his neighbors. “How can you afford to share your best seed corn with your neighbors when they are entering corn in competition with yours each year?” the reporter asked.

“Why sir,” said the farmer, “Didn’t you know? The wind picks up pollen from the ripening corn and swirls it from field to field. If my neighbors grow inferior corn, cross-pollination will steadily degrade the quality of my corn. **If I am to grow good corn, I must help my neighbors grow good corn.**”

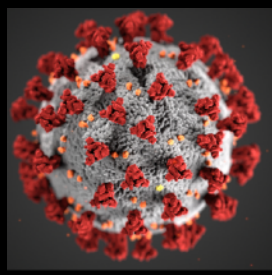
So is with our lives...Those who want to live meaningfully and well must help enrich the lives of others, for the value of a life is measured by the lives it touches. And those who choose to be happy must help others find happiness, for the welfare of each is bound up with the welfare of all.

Call it power of collectivity...

Call it a principle of success...

Call it a law of life.

The fact is, none of us truly wins, until we all win!



Thank you -
let's beat this virus together!

