

Kenneth Kubitschek
MD, FACP, CMD

COVID-19

What Did We Learn?
Where Do We Go from Here?

2020

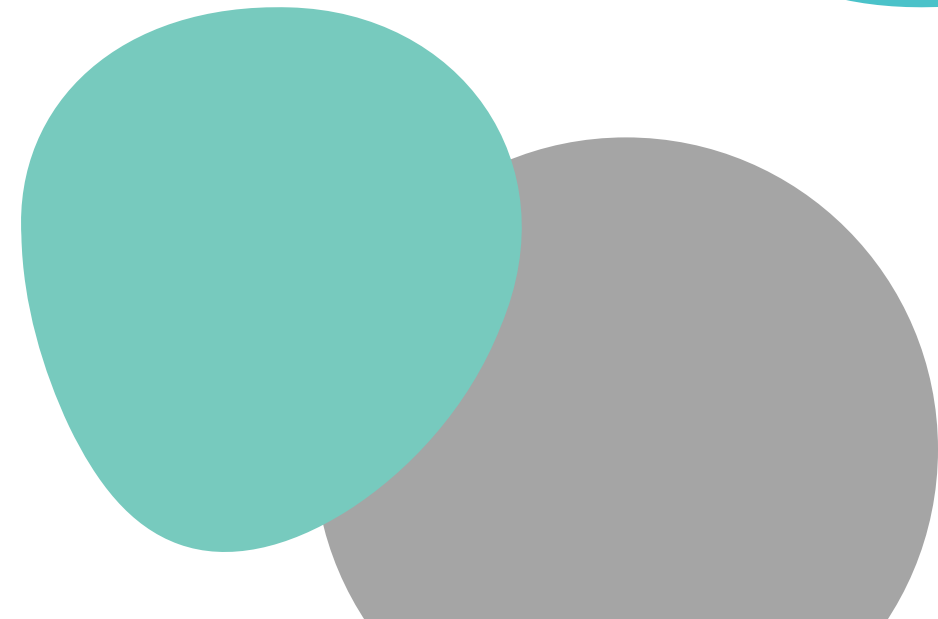
Planning for the future of long-term care

Going Once...

Going Twice...

Hey, it's not going!

My Personal Facility Story



Dr. Kenneth Kubitschek

MD, FACP, CMD

Co-founding partner for GEHRIMED

Chief Medical Officer & Board Member
Geriatric Practice Management Corp

Chief Executive Officer
Carolina Internal Medicine Associates
(18 Provider Internal Medicine Group)



Agenda

Learning objectives of this presentation

- **Brief history & Missteps**
- **Infectivity/Transmission**
- **Safety rules**
- **Testing/Mortality/Treatment**
- **Impact on LTC facilities and patients**
- **Impact on LTC providers**
- **The future (**presuming there is one**)**
- **QUIZ**

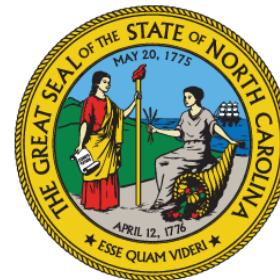
Disclosure

I am on information overload!

Some of my daily
COVID-19 Feeds:

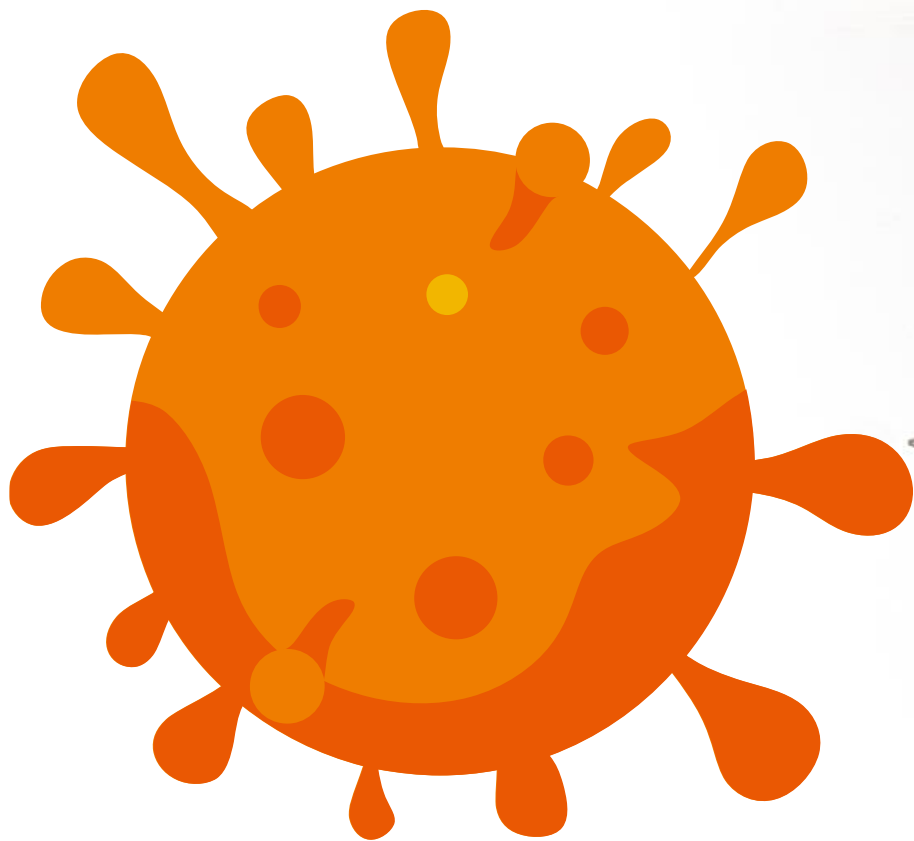


...and more! Including:
Hospital System
Local Medical Society
Malpractice Carrier

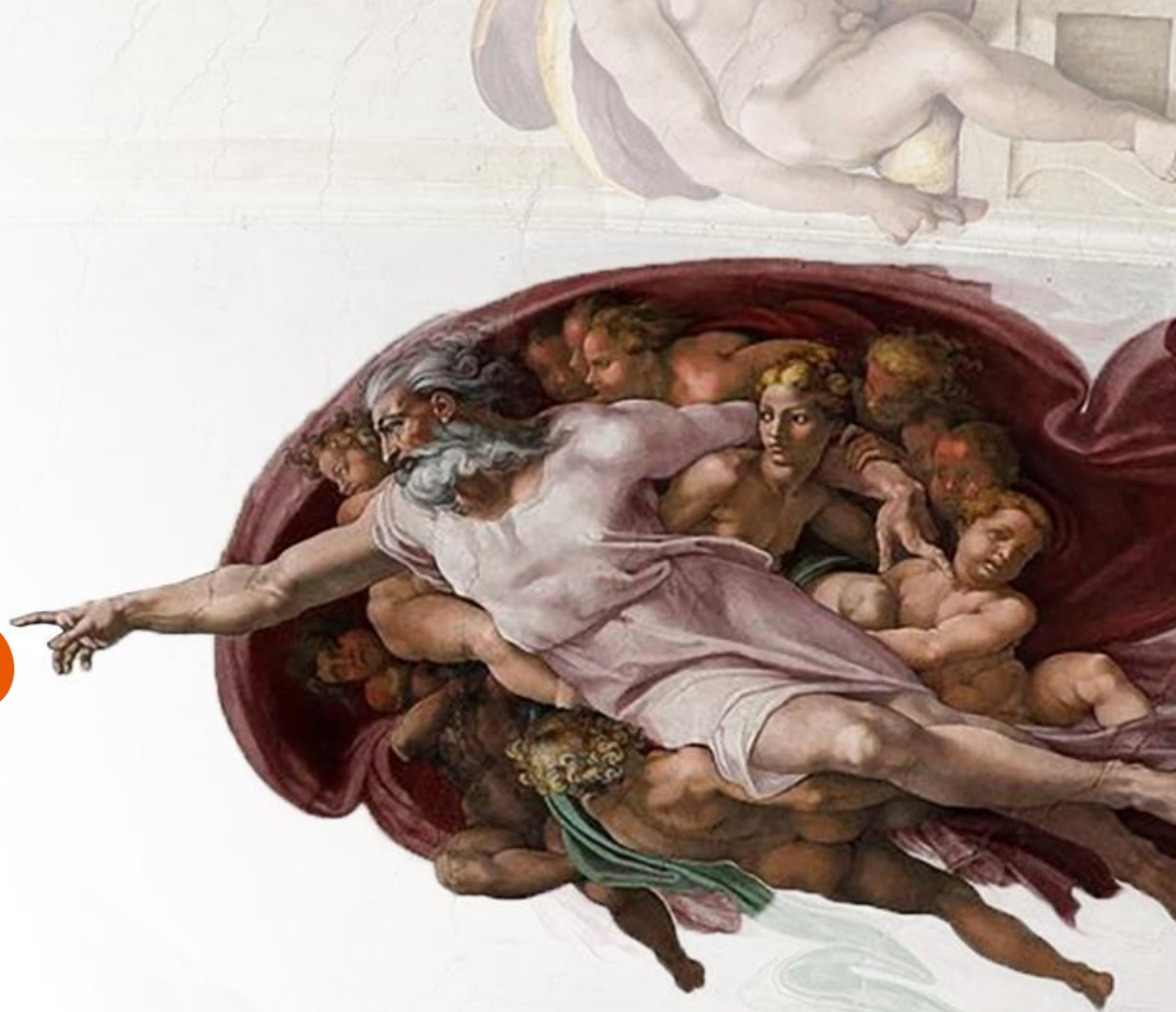


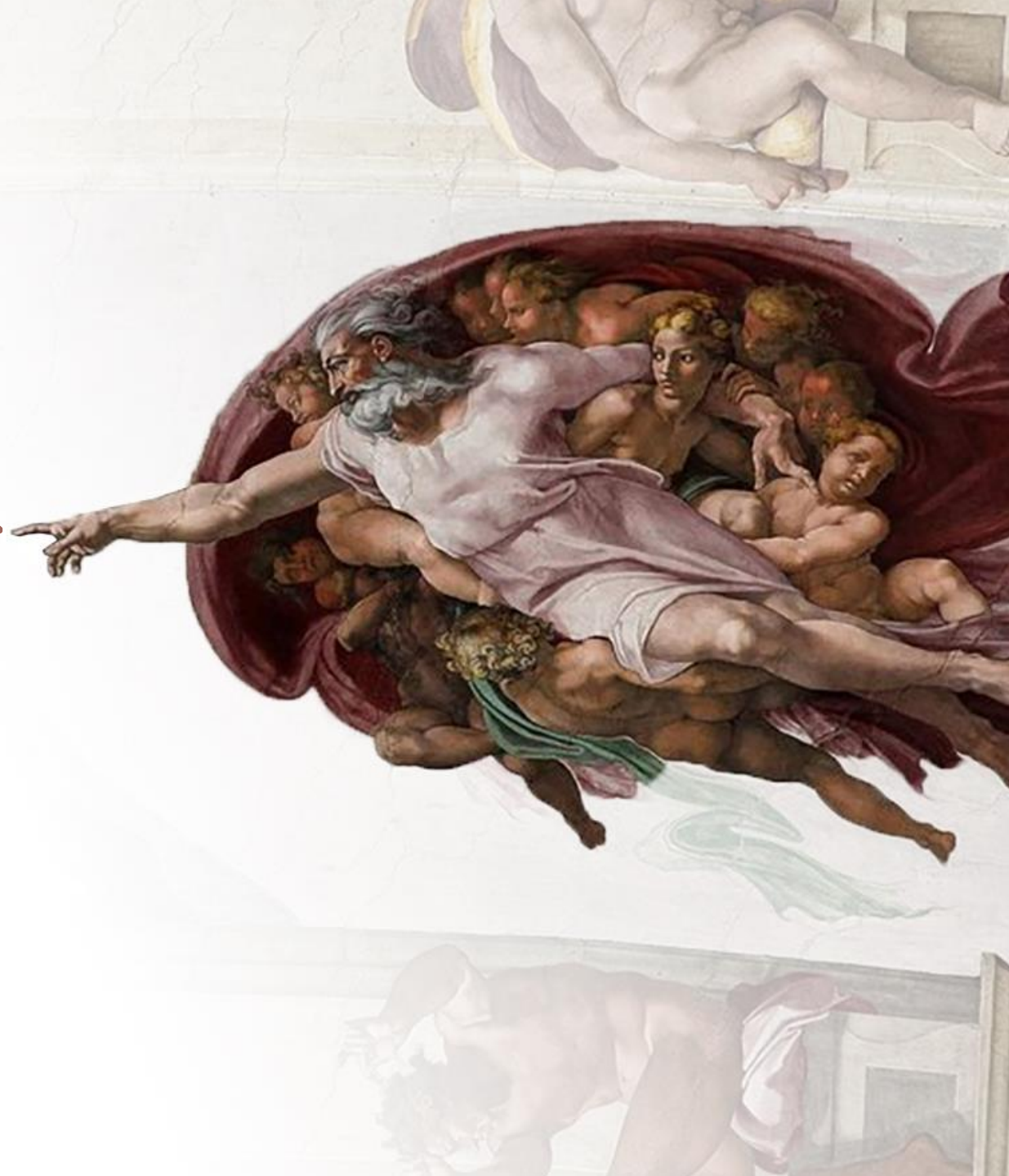
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A Brief History



In the
beginning...



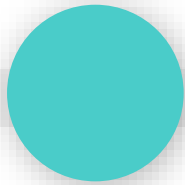


Enter the
'flying hamster'



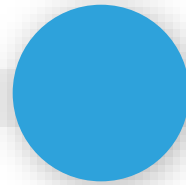
The COVID-19 Timeline

DEC 31, 2019



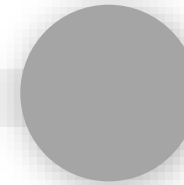
WHO office in China picked up a media statement about cases of 'viral pneumonia' in Wuhan province

JAN 9, 2020



Chinese authorities determine the outbreak was caused by a novel coronavirus

JANUARY 11

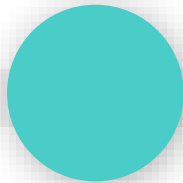


China reports first coronavirus related death

Planning for the future of long-term care

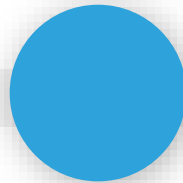
The COVID-19 Timeline

JANUARY 13



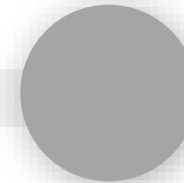
First case outside of China is documented in Thailand

JANUARY 21



First US case confirmed in Washington state after travel to Wuhan

JANUARY 24

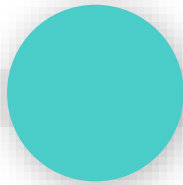


The first European cases are noted in France. All of whom traveled from Wuhan

Planning for the future of long-term care

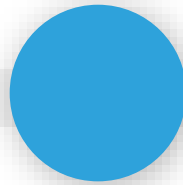
The COVID-19 Timeline

FEBRUARY 5



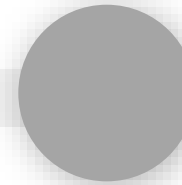
Diamond Princess cruise ship is quarantined off the coast of Japan with 700 cases

FEBRUARY 11



WHO names the novel coronavirus "COVID-19"

FEBRUARY 29

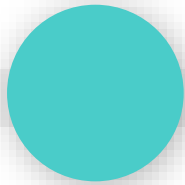


First US reported death in Washington state

Planning for the future of long-term care

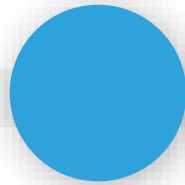
The COVID-19 Timeline

MARCH 5



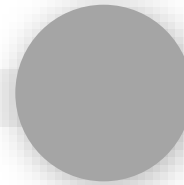
While other countries have run millions of tests, the CDC has tested only 1,234 patients

MARCH 11



My daughter's Australian roommate tests positive as the 13th case in Western Australia. Daughter becomes a nomad.

MAY 27

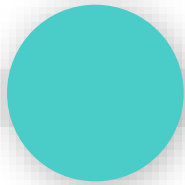


US reaches 100,000 deaths from COVID-19

Planning for the future of long-term care

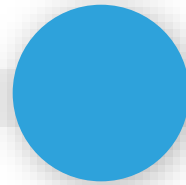
The COVID-19 Timeline

SEPTEMBER 21



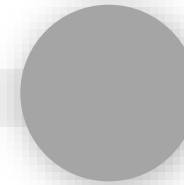
US reaches 200,000 deaths
from COVID-19

SEPTEMBER 28



COVID death toll reaches 1
million people, worldwide

OCTOBER 2



President & First Lady test
positive for COVID-19

Planning for the future of long-term care

The Present

~225,000 US fatalities

A large, irregular teal shape with rounded edges, resembling a splash or a cloud, centered on the page. It contains the text 'Mistakes Made'.

Mistakes Made



Missteps

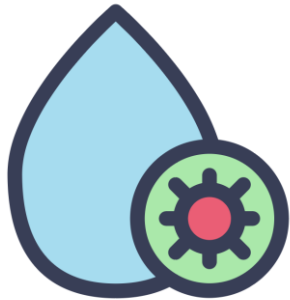
- 1 CDC chooses to not utilize the WHO primer sets
- 2 CDC kits based on PCR testing; smallest contaminants can ruin it completely
- 3 Contaminated CDC kits delay testing for 6 weeks
- 4 FDA prevents state and commercial labs from developing their own diagnostic tests
- 5 Gov. Cuomo orders all NY facilities to accept patients with COVID-19 from hospitals
- 6 Wearing a mask becomes a political issue
- 7 Lack of national response leads to widely variable state's responses. Lockdown didn't last long enough to control transmission.

A large, irregular teal shape with rounded edges, resembling a splash or a cloud, which serves as a background for the main title text.

Infectivity & Transmission

Transmission

SARS-CoV2 is transmitted to varying degrees through:

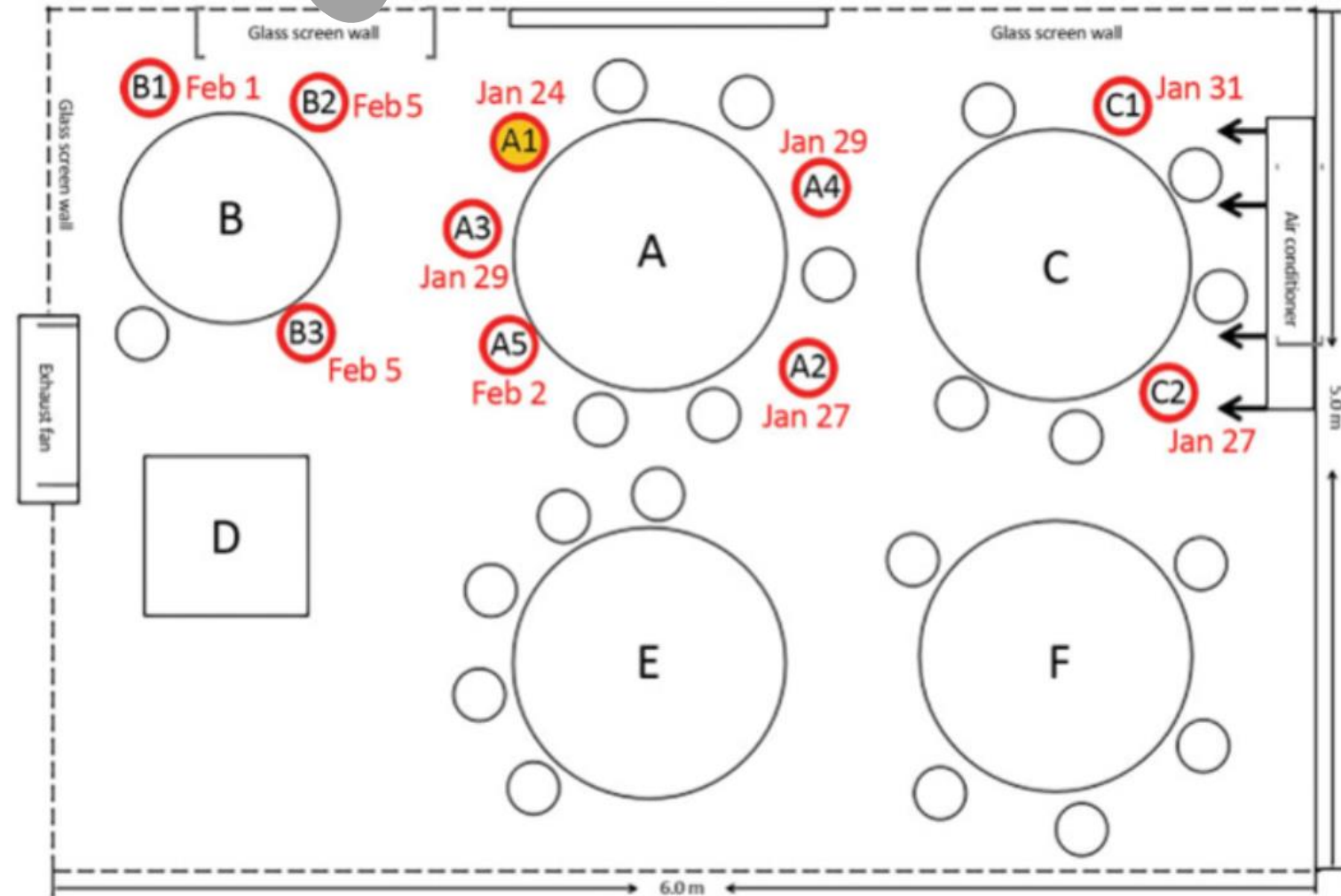


About 40-45% of infections
are asymptomatic.

Anthony S. Fauci, M.D.,
NIAID Director, NIH

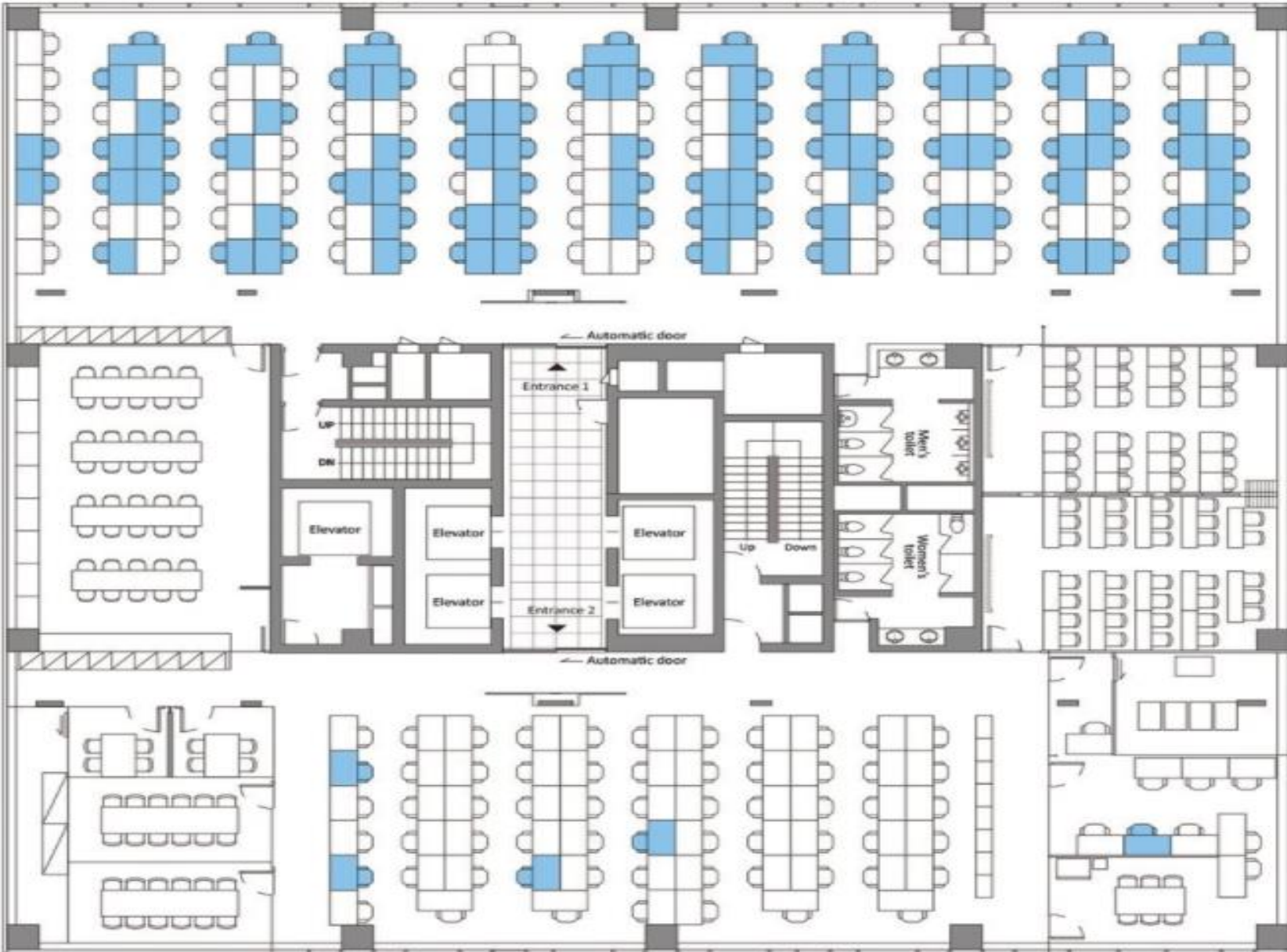


Restaurant Outbreak



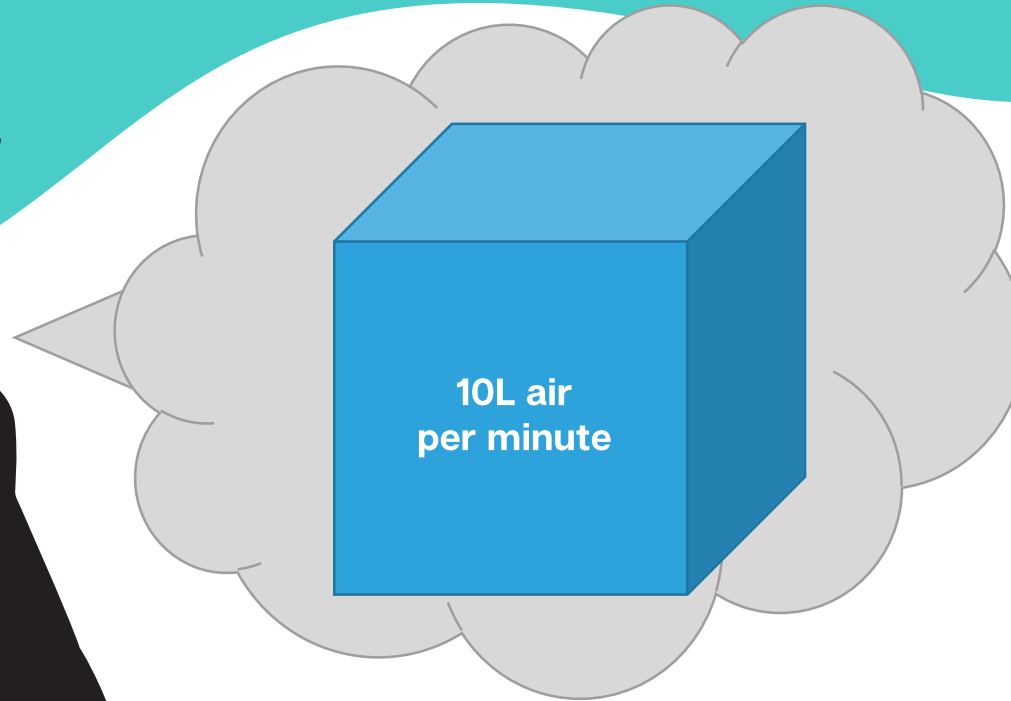
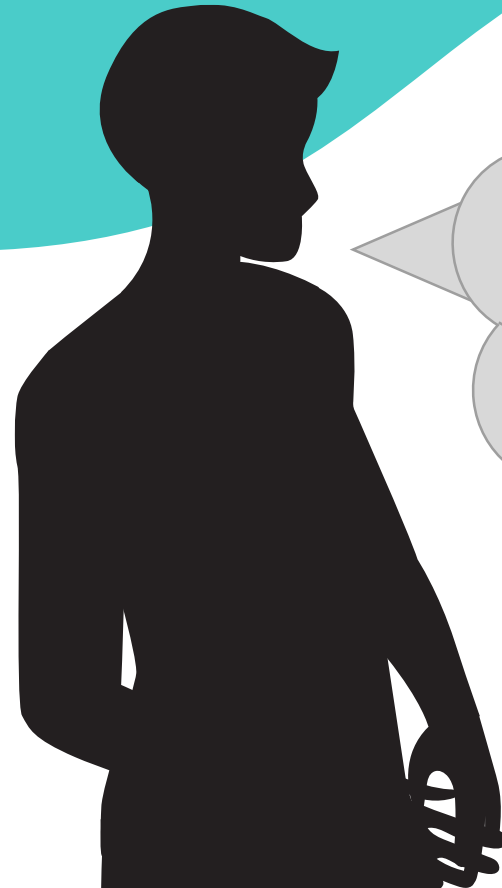
<https://www.erinbromage.com/post/the-risks-know-them-avoid-them>

Call center Outbreak

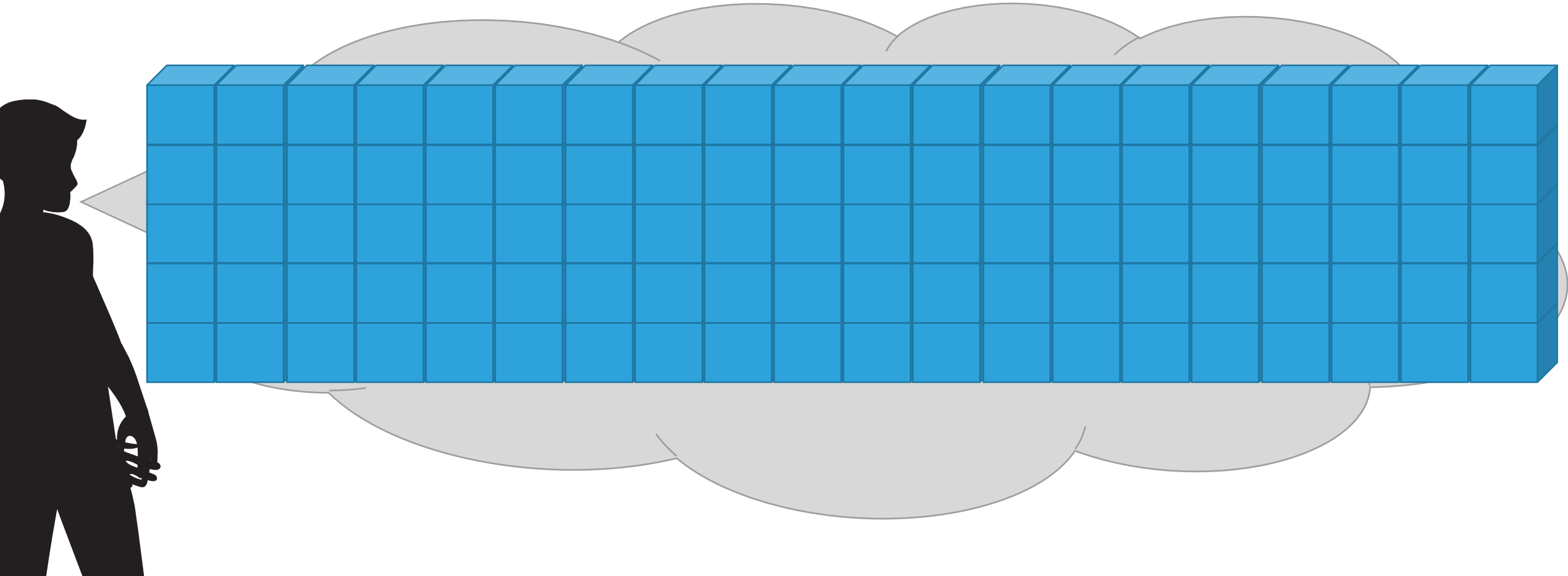


Why bars are bad news

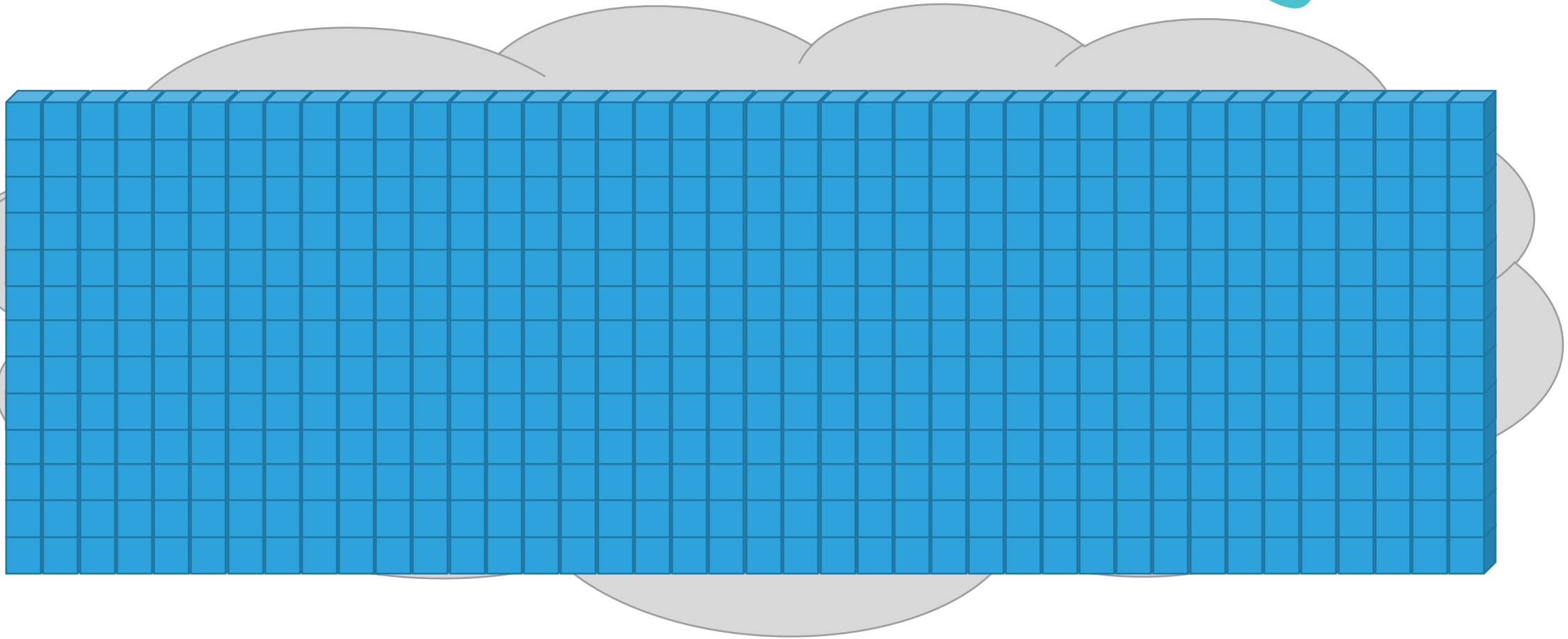
An adult breathes 12-15 times per minute, exhaling about 10 liters of air.



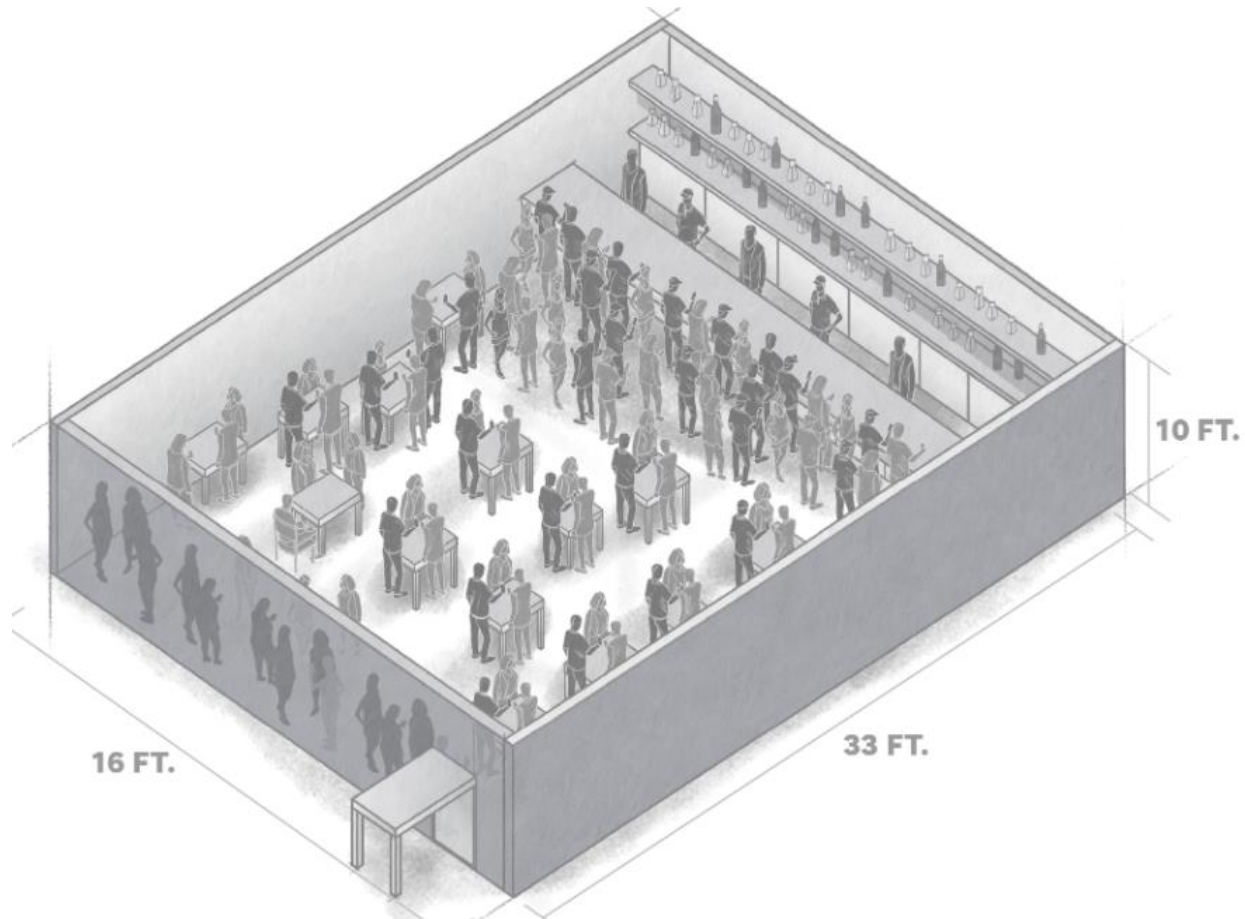
In 10 minutes, one person can exhale about 100L of air.



In one hour, that same person can exhale about 600L of air.

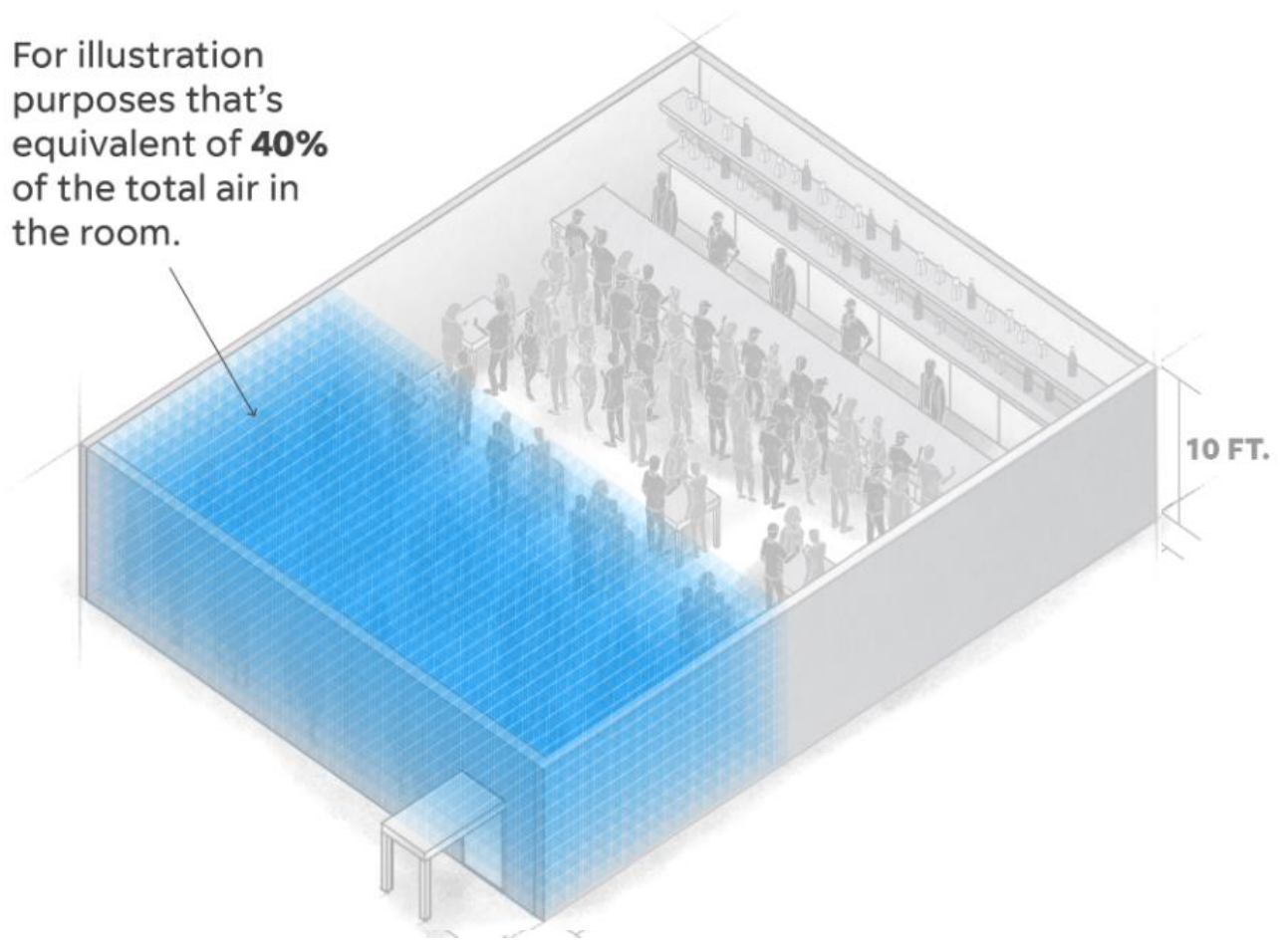


Let's say 100 people are in a bar:
The bar is 10m long by 5m wide and 3m high
This equals **150,000 liters**

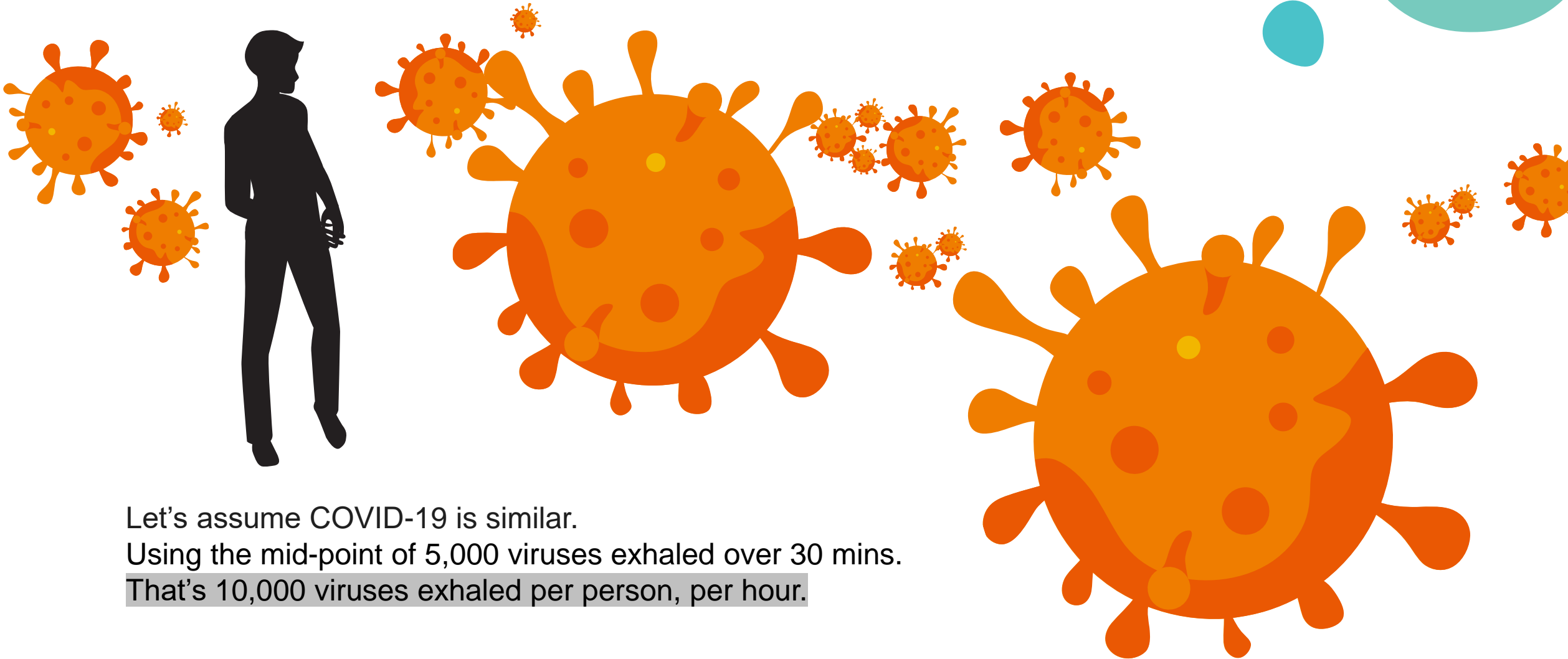


The crowd stays for **1 hour**.
100 people breathing for 60 mins. **100x600L**
60,000 liters of air per hour

For illustration purposes that's equivalent of **40%** of the total air in the room.



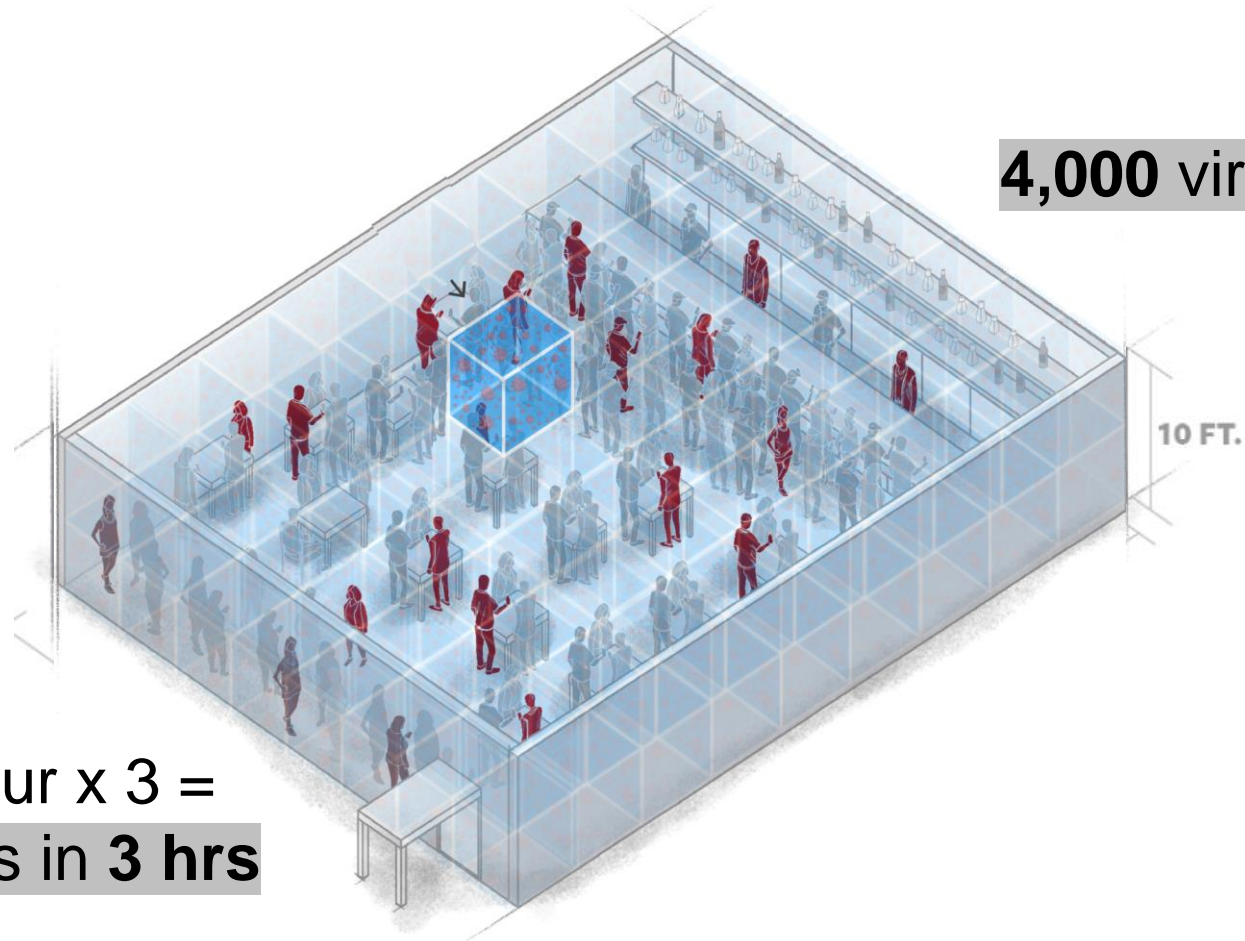
According to a 2013 study of people with influenza,
Participants breathed out 1,000 – 10,000 virus particles every 30 minutes.



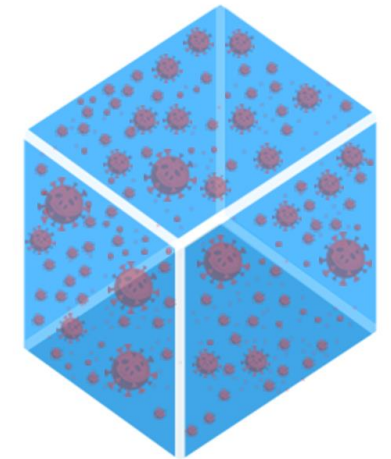
Let's assume COVID-19 is similar.
Using the mid-point of 5,000 viruses exhaled over 30 mins.
That's 10,000 viruses exhaled per person, per hour.

20 people are infected in that same bar:
That's 200,000 viruses per hour.

This number will increase each hour by **200,000**.
According to studies the virus can survive in the air for up to 3 hours.



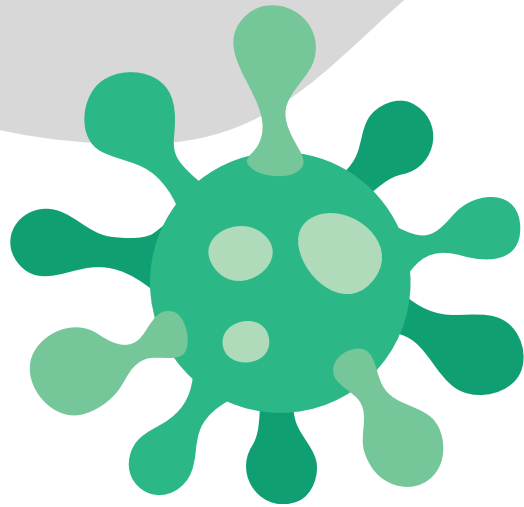
4,000 viruses per cubic meter



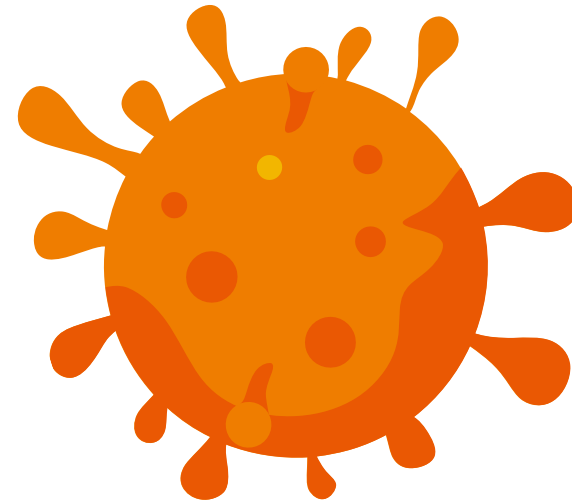
Approx. size:
1 cubic meter

200,000 per hour x 3 =
600,000 viruses in **3 hrs**

How many particles does it take to make you sick?



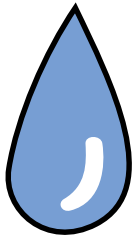
**SARS (Severe Acute Respiratory Syndrome)
outbreak of 2003**
Just a few hundred particles



**SARS-CoV-2 of 2019
(COVID -19)**
Infectious dose appears to be similar

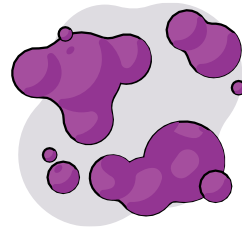
It's Not Whether You Were Exposed **It's How Much and How Long**

"The dose makes the poison"



Large droplets

Contain large volumes,
but drop quickly



Aerosolized particles

Linger for hours, but
dose is small



Know your three “W’s”

WEAR

A smile even when you see pictures of crowded restaurants and bars.

WAIT


At least one to two years before it begins to feel safe again.

WASH

Away the tears when you see people failing to wear masks.

‘Variolation’ as we await a vaccine

Variolation

vari·o·la·tion | \ ,var-ē-ə-'lā-shən  \

Medical Definition of *variolation*

: the deliberate inoculation of an uninfected person with the smallpox virus (as by contact with pustular matter) that was widely practiced before the era of vaccination as prophylaxis against the severe form of smallpox

There is suggestive evidence that wearing a mask reduces the amount of virus to which you are exposed and “viola”: **variolation**.

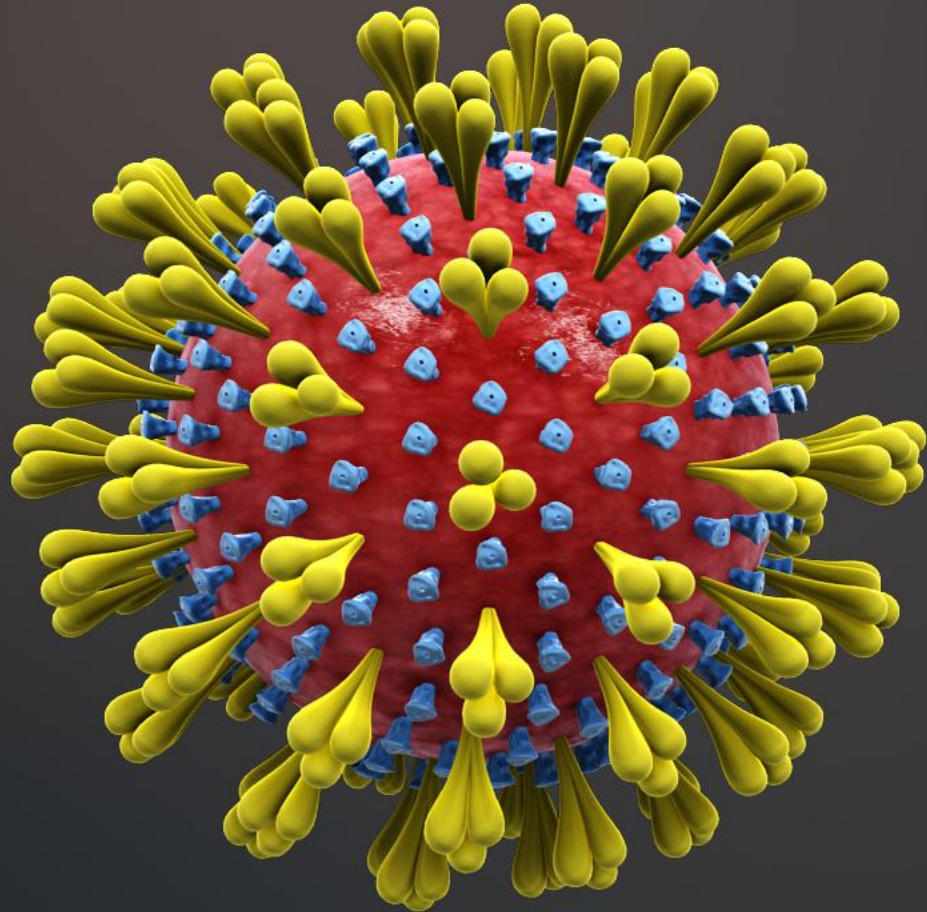
Testing

The majority off all US tests are completely
garbage, wasted.

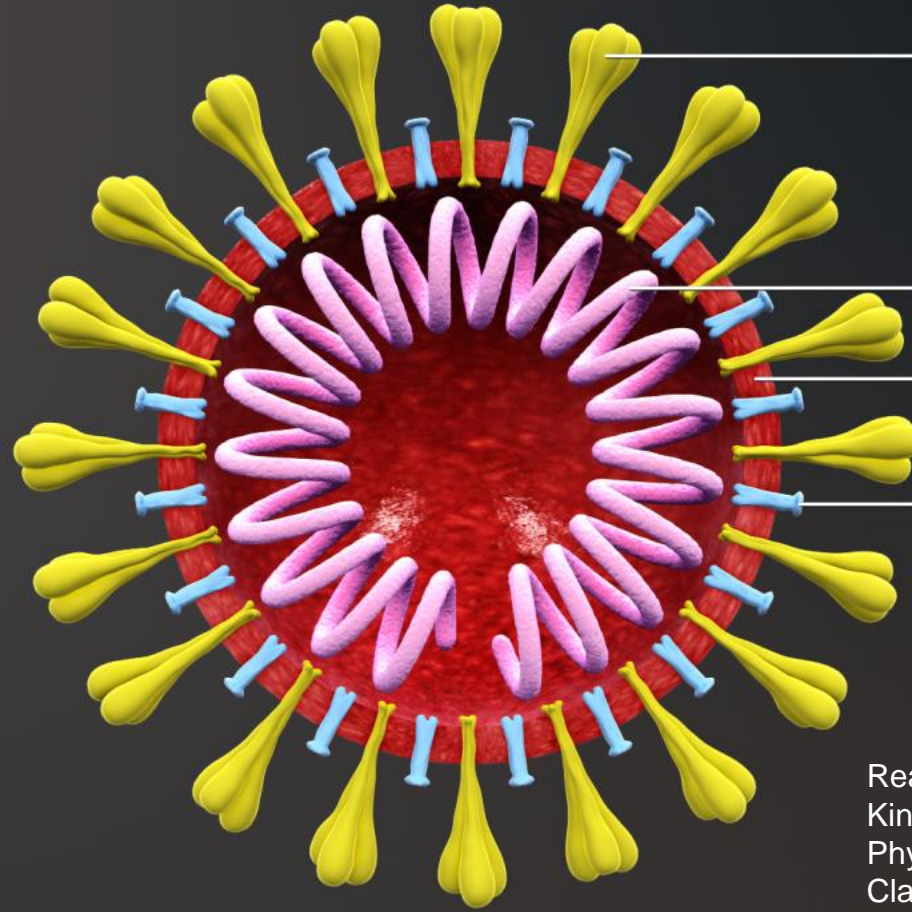
Bill Gates, Co-chair, Bill & Melinda Gates foundation



SARS-CoV-2



Genome size



29,903 bases

Spike Glycoprotein (S)

RNA and N protein

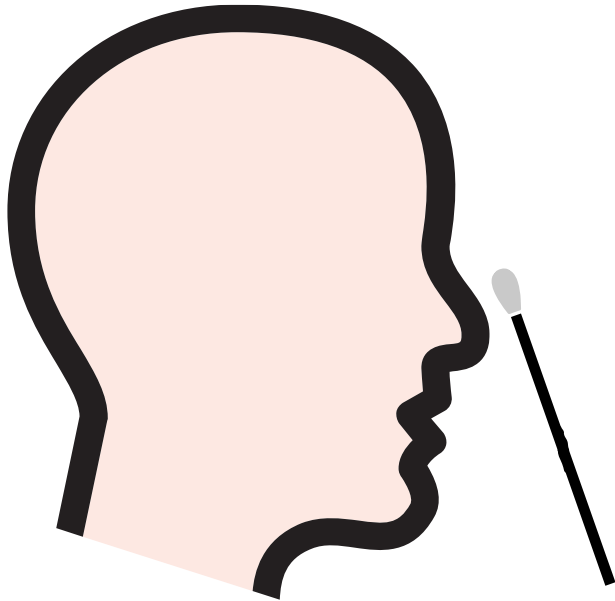
Envelope

Hemagglutinin-esterase dimer (HE)

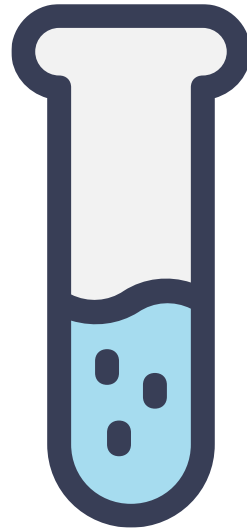
Realm:	Riboviria
Kingdom:	Orthornavirae
Phylum:	Pisuviricota
Class:	Pisoniviricetes
Order:	Nidovirales
Family:	Coronaviridae
Genus:	Betacoronavirus
Subgenus:	Sarbecovirus
Species:	Severe acute respiratory syndrome-related coronavirus

Molecular Test

Detects the genetic material of a virus



Obtain a specimen with
a nasal swab



Extract RNA and
Convert to DNA



Amplify by PCR with
CoV-2 specific primers.



Interpret results:
Presence of viral RNA
indicates active infection

When is **Molecular & Antigen** testing useful?

When viral load is highest - within 5 days of symptom onset

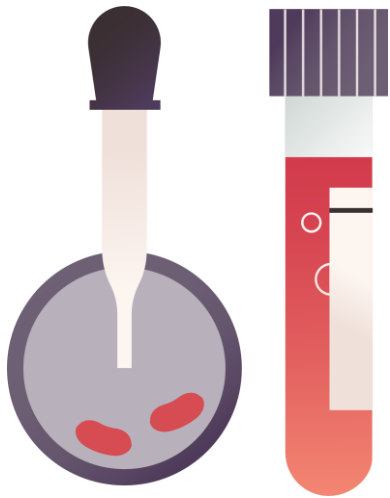
When there has been **known exposure** – can take up to 14 days

As a screening tool for **high-risk** congregate settings

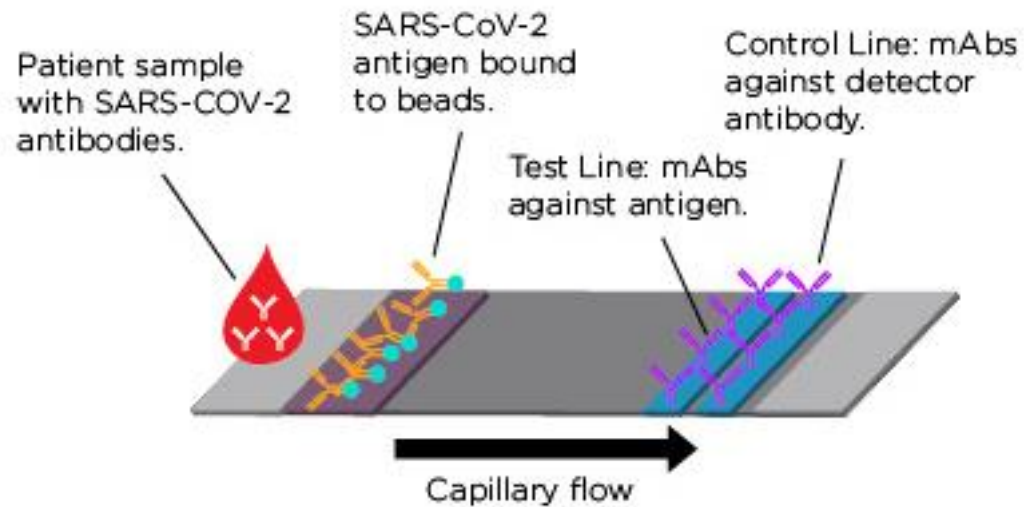
Molecular test when Antigen test negative



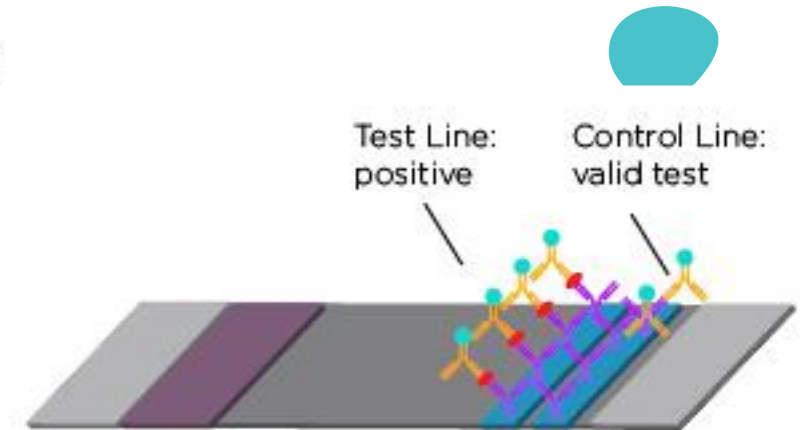
Antibody Tests



Obtain a specimen with a blood sample



Expose specimen to SARS-CoV-2 specific antigens



Interpret results: Color change indicates previous exposure to SARS-CoV-2

Antibody Tests

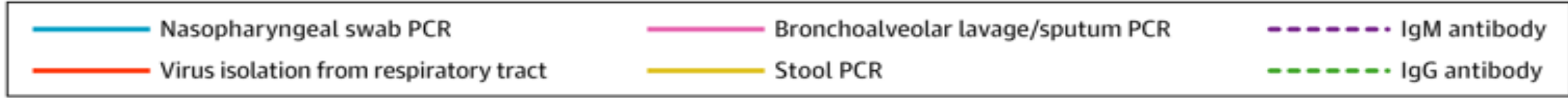
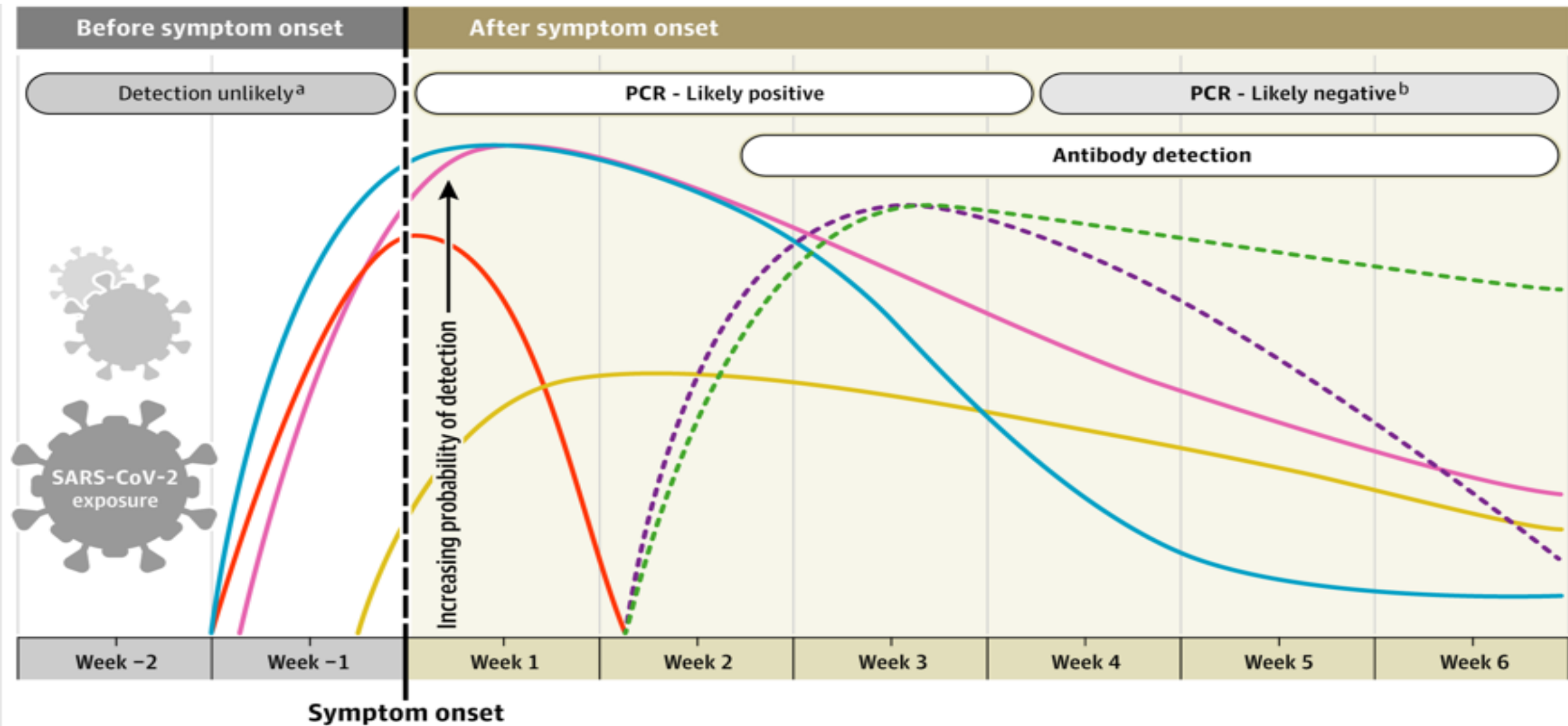
Current Challenges

No FDA Approval

Emergency Use
Authorization only

Variable
sensitivities and
specificities

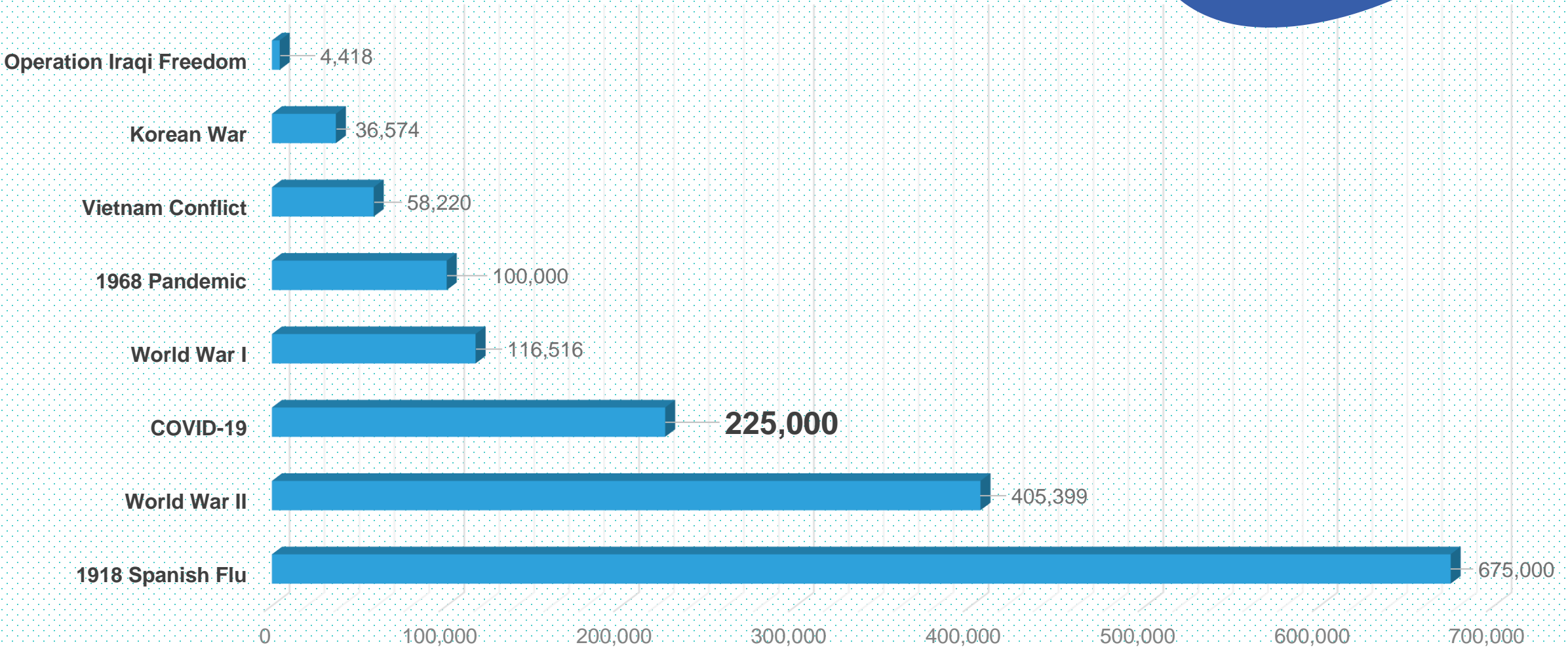
Critically dependent on prevalence of disease in the community



Mortality

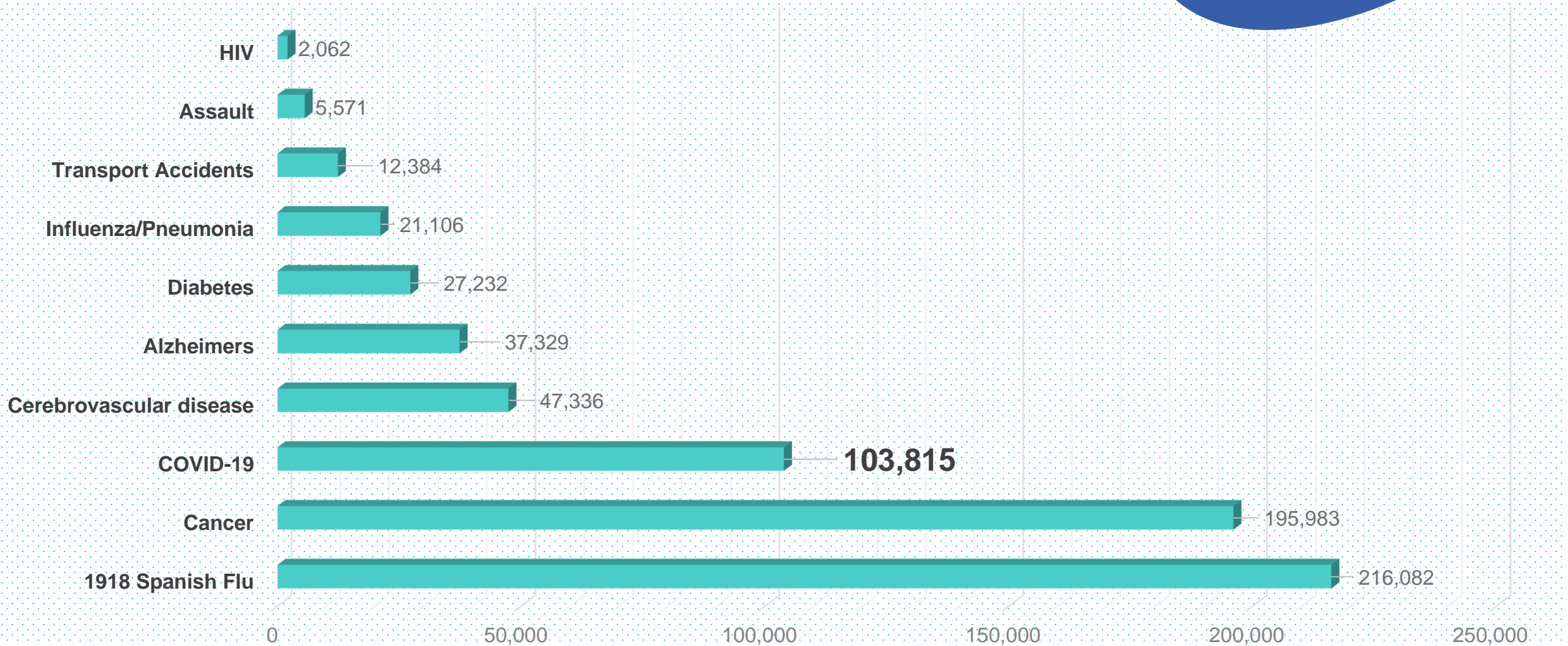
COVID in comparison

US deaths from wars and pandemics



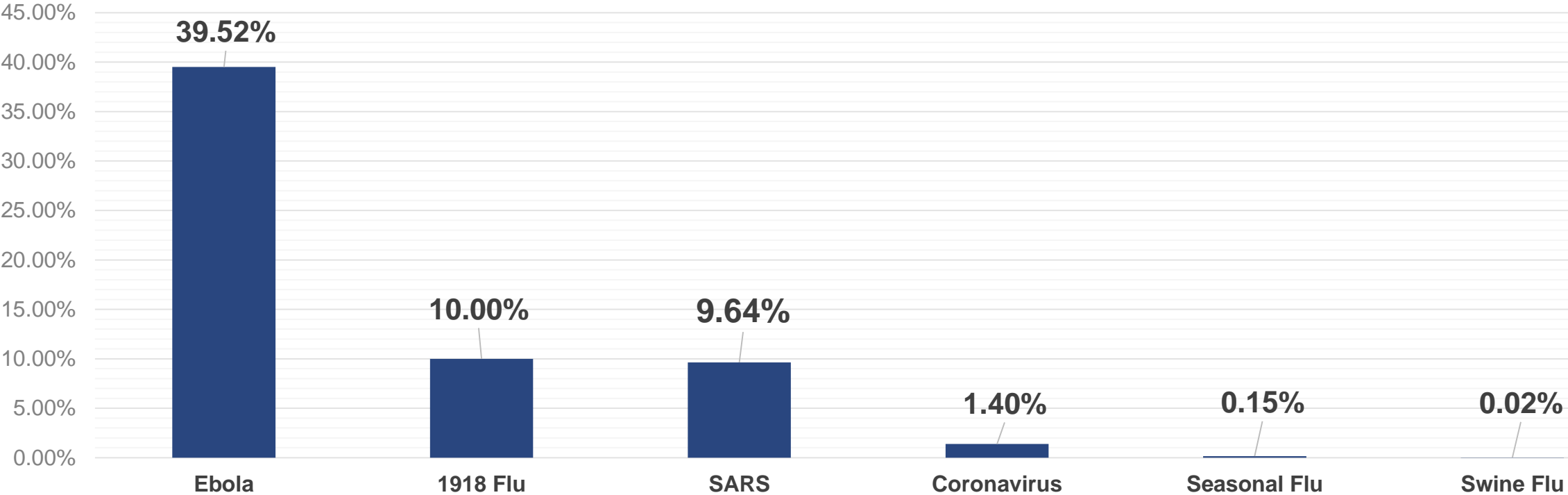
COVID in comparison

Common causes of US deaths between February and May, 2020
(4 months)



COVID in comparison

Case fatality rates



Symptom-Based Strategy

to discontinue precautions

Asymptomatic - not severely immunocompromised

- Precautions stopped 10 days after positive test

Mild to Moderate - not severely immunocompromised

- 10 days *since symptoms first appeared* **AND**
- 24 hours *since last fever* **AND**
- Symptoms (e.g. cough, SOB) have improved.

Severe to Critical Illness or Severely immunocompromised

- 20 days *since symptoms first appeared* **AND**
- 24 hours have passed *since last fever* **AND**
- Symptoms (e.g. cough, SOB) have improved.

Recent Developments

Current articles about COVID-19

World Health Organization:
Children ≤ 5 years old should
not wear face masks

[READ MORE](#)

Remdesivir (RDV) shows
modest benefit in patients
with moderate COVID-19

[READ MORE](#)

Breast milk has been found
unlikely to transmit SARS-
CoV-2 from mother to child

[READ MORE](#)

A large, irregular teal shape with rounded edges, resembling a splash or a cloud, which serves as a background for the main title text.

Industry Impact

A large white sign with blue and green text is flanked by two stone pillars. The sign features a green leaf logo above the main title. The background is a lush green lawn with colorful flowers in the foreground and trees in the distance.


StoneCreek
**HEALTH &
REHABILITATION**

VICTORIA ROAD

828-252-0099





CornerStone CAFÉ



Today's Lunch

Sweet & Sour Pork
Oriental Blend Vegetables
Steamed Rice
Fruited Gelatin

Today's Dinner

Holiday's
Tater Tots
Baked Beans
Fresh Fruit

Quote of the Day

Learn from the past, set and
desirable goals for the future.
And live in the only moment
of time over which you have
any control; Now.
-Doris Weilby



CornerStone CAFÉ



History of the [unclear]
From the past, set and
what goals for the future
line in line only meant
time over which had have
by control? Now
Dennis Mobby



Sanford
January 2014
M. [unclear]

Hendersonville
May 2015
G. [unclear]

Congratulations

TO OUR OUTSTANDING STAFF AND RESIDENTS

Deficiency-Free

 Proud

[unclear]
[unclear]

[unclear]
[unclear]

[unclear]
[unclear]

[unclear]
[unclear]

The
StoneCreek
Team

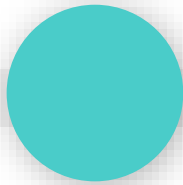


Life at StoneCreek



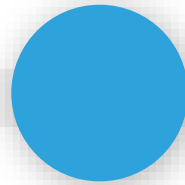
My COVID-19 Timeline

MAY 16



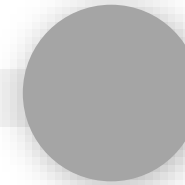
Health Dept visit – Contract tracing lead to asymptomatic staff member (husband with COVID-19)

MAY 19



Asymptomatic Contact Staff member tests positive

MAY 21



2nd staff member & 1st patient test positive, start testing weekly for 3 weeks

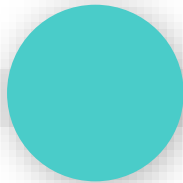


necreek Health
Rehabilitation



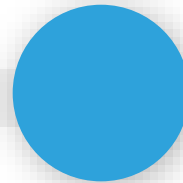
My COVID-19 Timeline

MAY 27



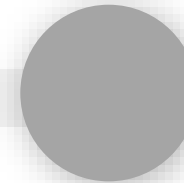
State inspection, infection control. 1 deficiency for maintenance worker.

MAY 29



10 Patients and 3 staff members test positive; 5 patients die in next week.

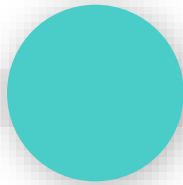
JULY 13



Health Dept visits and suggests we put another set of plastic curtains before the closed set of double doors.

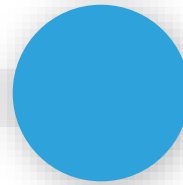
My COVID-19 Timeline

JULY 24



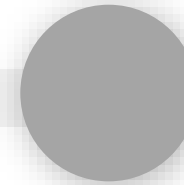
All clear and only 1 patient
quarantined on day 16
(testing cadence every 2
weeks)

JULY 25



Accepted a COVID + patient

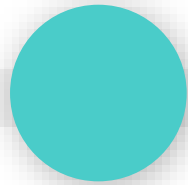
AUGUST 13



No patients tested positive; 1
staff positive after going to
concert (testing weekly now)

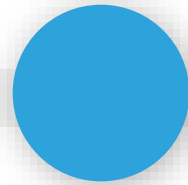
My COVID-19 Timeline

AUGUST 26



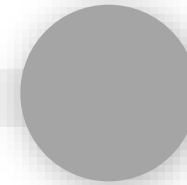
22 staff members positive.
62 patients positive.
Over next week 8 patients
died within 24 hours of
symptom onset.

SEPTEMBER 2 / 3



Testing showed no new
residents and 2 new staff.

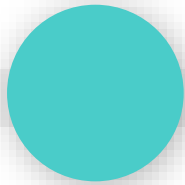
SEPTEMBER 8



State inspection, infection
control and 1 complaint
inspection (complaint by a
staff member). The grievance
withdrawn while state present.
No deficiencies.

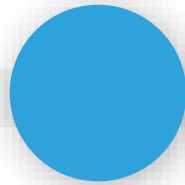
My COVID-19 Timeline

Sept 9/10



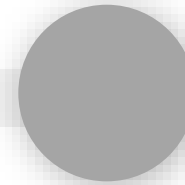
All patients & staff tested were negative. No patients removed from quarantine.

SEPTEMBER 17/18



All tests negative. 27 patients past day 20 and removed from quarantine.

SEPTEMBER 20/21



Early testing on Mon/Tues in order to get staffing for weekend. Staff all negative, but 5 new residents (4 asymptomatic, 1 slight temp).

The Present

Dealing with COVID in a PAC Setting

We are sorry to share that we believe your loved one may be dying. Under these circumstances, CPR will most likely not be successful and may cause harm.

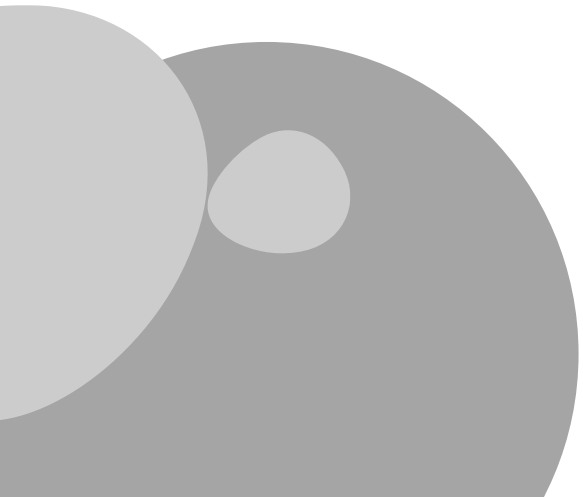
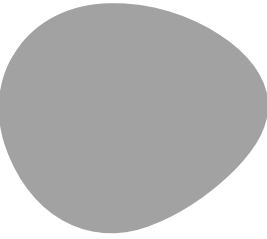
In our experience with COVID 19 patients that rapidly decline, there is very little hospitalization can do

Based on our review of your loved one's clinical status, we are worried that this coronavirus, along with their previous medical conditions, is leading to an end of life process.

Although your loved one is stable currently, with COVID 19 some patients experience abrupt presentation and rapid decline, in those instances, aggressive treatment, possibly including CPR are most likely unsuccessful and may cause harm.

This does not change our current approach, we are continuing to provide care and indicated treatment.

Caregiver Burnout



Ways to combat Burnout



Lead by example



Conduct safe check-in meetings



Equip your team with top tools



Make access to professional services widely available and acknowledged



Ask you staff how they would like to be helped

A large, irregular teal shape with organic, rounded edges, serving as a background for the main text. It is positioned in the center of the page.

The Future

(presumed)

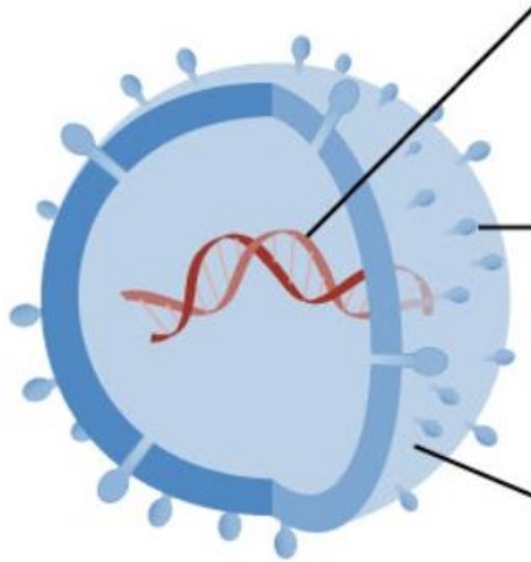
Awaiting a Vaccine

Even with a vaccine, the future is uncertain

- Duration of vaccine protection?
- How to effectively distribute?

Types & Varying approaches of vaccines

Types of Vaccines

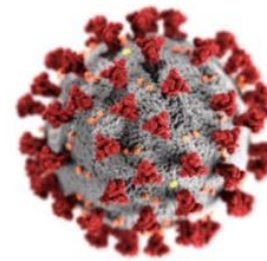


Source: GAO. | GAO-20-583SP

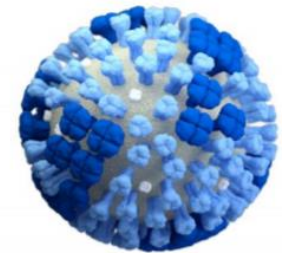
What to Expect?

Fujiwara Effect - two or more storms converge over a common area and then essentially spin around each other as they each feed off of the other's energy

Possible Outcomes – move on their own, synergize, one dominates the other



SARS-CoV-2



Influenza A

Images from CDC Image Library
<https://phil.cdc.gov/>

My Aspirations

Listen to Dr. Fauci!

Re-establish **science as a foundation**

Educate the public truthfully

Help our colleagues stay safe & healthy



Fact or Fiction?

Trivia questions

Groceries need to be washed

FALSE

The WHO recommends all people wear masks

FALSE

Hydroxychloroquine has a theoretical basis for efficacy

TRUE

COVID-19 is transmitted in breast milk

FALSE

COVID-19 is less likely to cause death than the 1918 flu

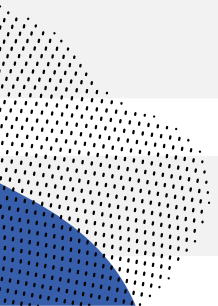
TRUE

Cracking a window has minimal benefit

FALSE

It takes only a few hundred viral particles to cause infection

TRUE



The background features a teal halftone pattern in the upper left, transitioning into a dark blue halftone pattern in the lower right. Overlapping these are several circles in various shades of teal and blue. A large white circle is partially visible in the top right corner.

THANK
YOU