

UNDERSTANDING THE NOVEL CORONAVIRUS

COVID-19

last update 18 February 2020

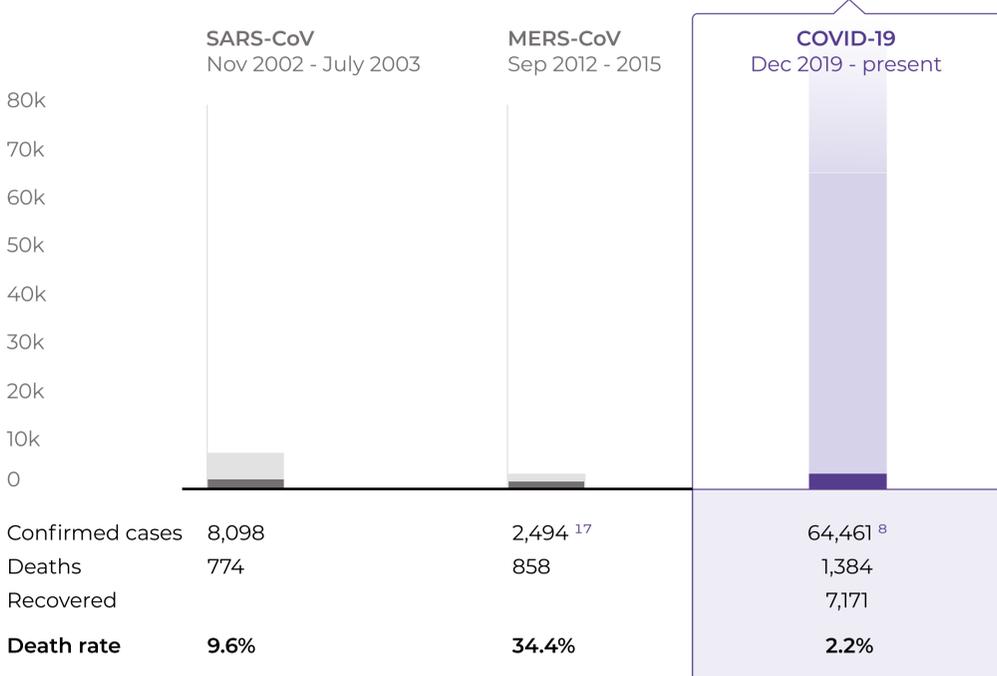
What is it?

The 2019 Novel Coronavirus, also known as **COVID-19**, caused an outbreak of respiratory illness in Wuhan, China and has since spread to other parts of China and the world. There is still a lot that we don't know about COVID-19 and the situation is evolving day-by-day.

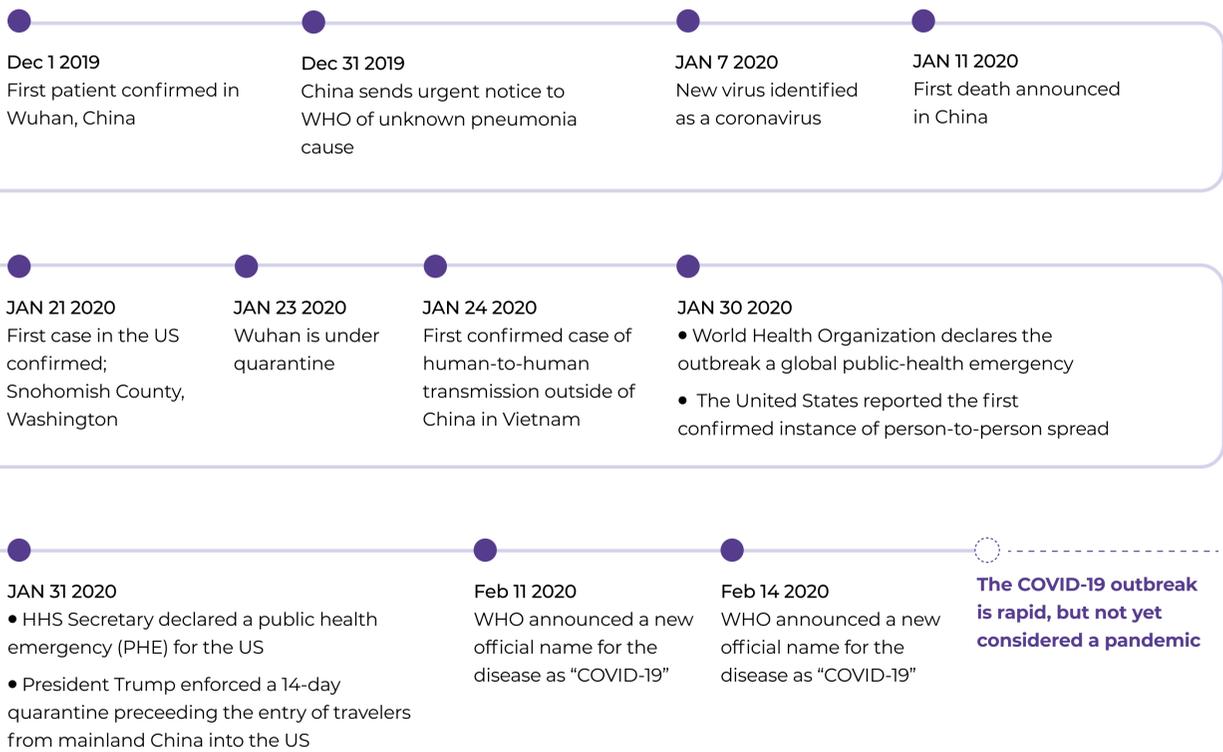
However, this isn't the first time the world has dealt with a Coronavirus. Coronaviruses are a family of viruses that infect birds and mammals (this includes humans!). Typically, they cause mild respiratory symptoms similar to the common cold, but in some cases—like in SARS or MERS—it can lead to death, often in those that are already immunocompromised.

Quick look : How does COVID-19 compare to the other coronaviruses?

As of 14 Feb 2020



Timeline of the outbreak¹⁸



How is it spreading?⁶

At this time, we don't know how fast or easily this virus is spreading between people. More information is discovered everyday, but here's what we know so far.

Human-to-human transmission is possible

The virus first came from an animal source, but it is now able to spread from human to human.

It's an airborne virus

It can infect humans through...

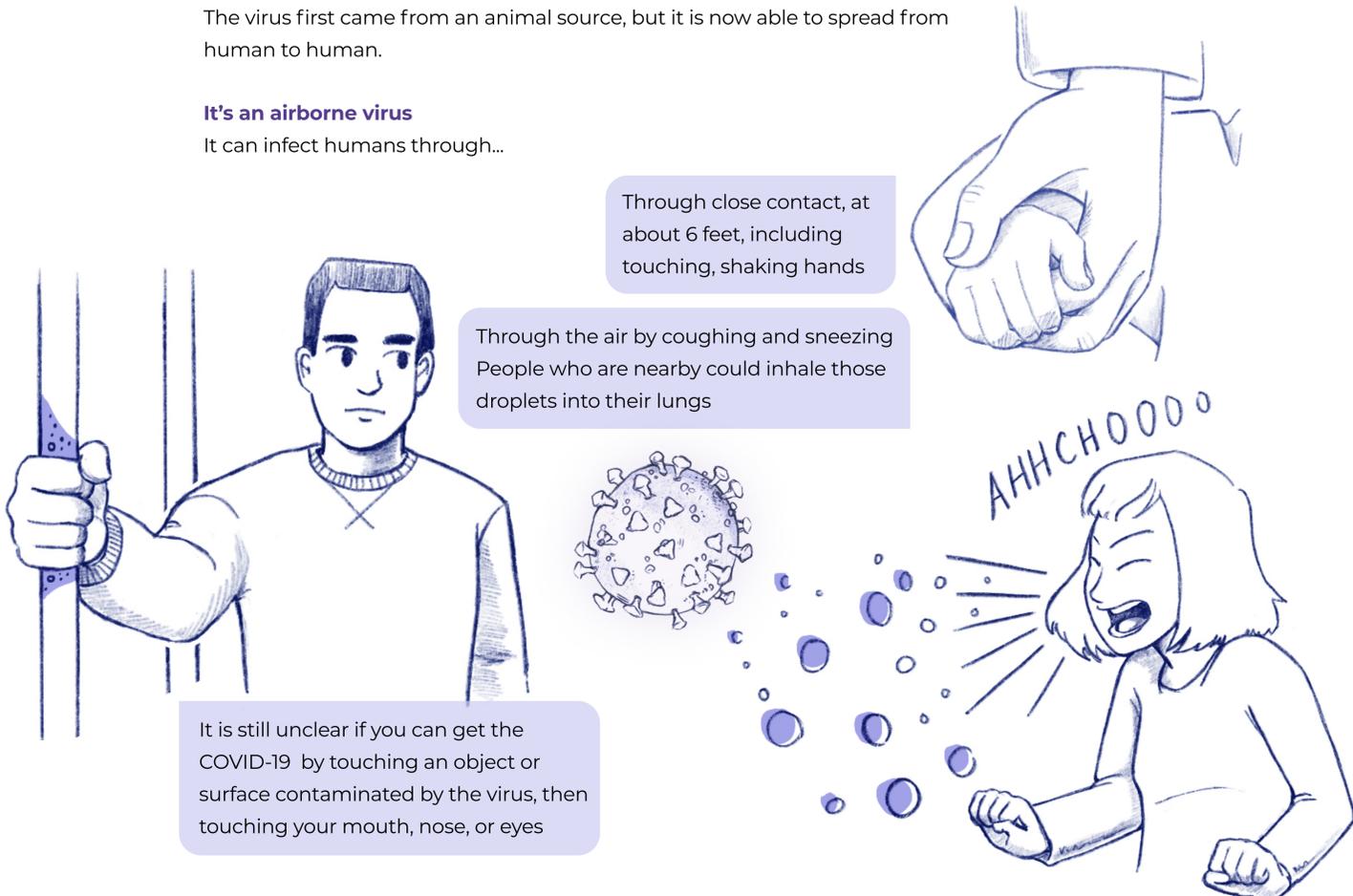
Through close contact, at about 6 feet, including touching, shaking hands

Through the air by coughing and sneezing
People who are nearby could inhale those droplets into their lungs

It is still unclear if you can get the COVID-19 by touching an object or surface contaminated by the virus, then touching your mouth, nose, or eyes

Incubation Period⁹

The time between exposure to the virus and the start of symptoms is between 5.2 - 12.5 days.



YOUR PART

Outbreaks at this scale can be scary, but besides staying up to date on the news, there are still a lot of things that you can do to stay healthy and help stop the spread of disease!

Prevention⁴

COVID-19 has not become an epidemic in America yet, **but here's what you can do to prevent it from becoming one:**



Close Contact³

If you come into close contact with someone who is confirmed to have COVID-19, **here's what you can do to stay well.**

- **Monitor your health** starting for at least **14 days** after your last contact with the infected person

- Watch for these signs and symptoms
Contact your healthcare provider right away if you notice these signs:



STAY CALM, TAKE CARE

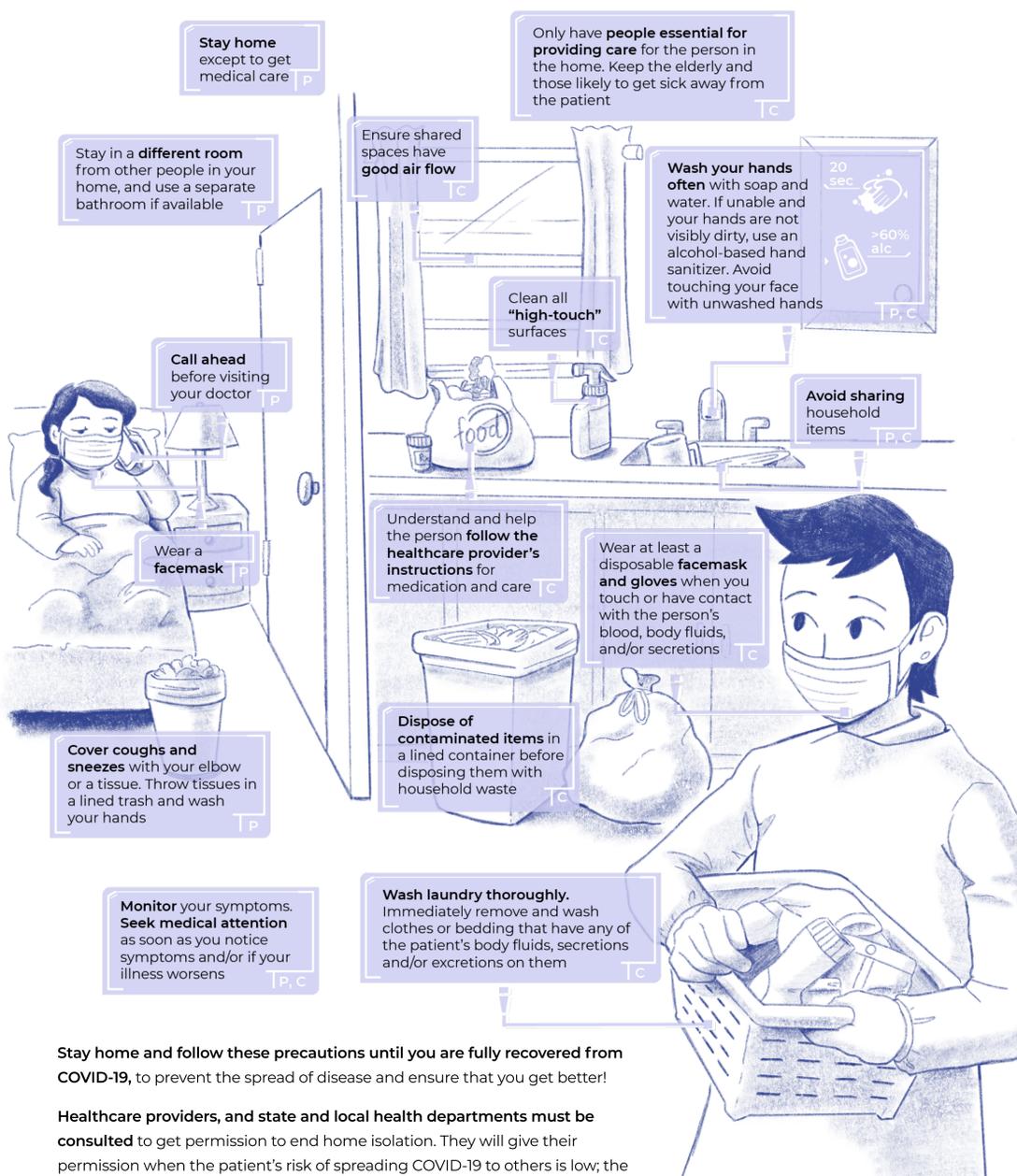
Remember, **don't panic!**

Before an announcement of an epidemic, take care of yourself just like you would during the annual flu season.

Stay on top of the news and other credible sources to keep updated on if you need to do anything different.

Caring for Patients⁵

If you/someone you know becomes sick with COVID-19 and does not require hospitalization or is determined medically stable to go home, **here's what you can do to take care and prevent further spread of the disease for patients (P) and for caregivers (C).**



Stay home and follow these precautions until you are fully recovered from COVID-19, to prevent the spread of disease and ensure that you get better!

Healthcare providers, and state and local health departments must be consulted to get permission to end home isolation. They will give their permission when the patient's risk of spreading COVID-19 to others is low; the timing differs from patient-to-patient.

Contact your state or local health department if you still have any questions.

PHYSICIANS WEAR MASKS, BUT YOU SHOULDN'T HAVE TO!¹

In light of the outbreak, two kinds of facemasks have been flying off American shelves:

Surgical Masks



Helpful for preventing the sharing of germs if you are sick, but are not completely effective against airborne viruses that are transmitted through smaller particles

N95 Respirators



Filters out at least 95% of airborne particles, making it better at protecting against airborne viruses

END THE PREJUDICE!⁴

Asian people **are not** at a higher risk than other people from becoming sick with COVID-19.

Only people who have **traveled to China, or been in contact** with someone confirmed or suspected to have COVID-19 in the last 14 days are at a higher risk of being infected.

Just because someone is of Asian descent does not mean that they have COVID-19!

However, **the CDC does not recommend public citizens to wear either of these masks!**

For now, the CDC recommends only **healthcare providers** taking care of patients **known to be infected with COVID-19** to wear a N95 respirator.

ACTION PLAN

How does the world respond to an epidemic?¹⁶

An epidemic in the world is pretty scary. But the good news is that we have a plan on how to deal with situations like these.

World Health Organization

Primary role is to direct international health and provide global leadership and guidance on how to manage. Its headquarters are located in Geneva, Switzerland.

Each country has a Regional WHO office

In the US, our Regional in Washington DC. Here, teams can communicate with the WHO headquarters and get up-to-date information about the emerging situation and consequently manage the outbreak response.

WHO uses its international network of collaborating centers to collect information

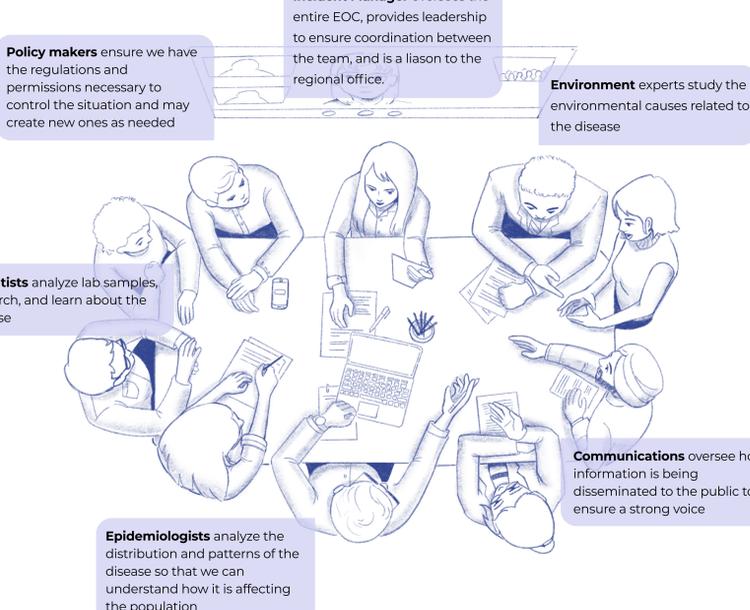
In the US, the Centre for Disease and Control in Atlanta, Georgia collects international and national data, analyzes, and synthesizes recommendations.

Our world is more connected than ever

This means that there are plenty of ways for diseases to spread to other people and places. There is a fine balance between protecting borders by quarantine and overreactions (that cause panics)

Local Emergency Operations Centers

Day-to-day operations are managed by a the local ground team. These centers have a set of experts that work together to control the local situation.



So what does this look like in practice?

HOW DO WE PROTECT OUR AIRPORTS AND BORDERS?

STEP 1: DETERMINING WHO IS AT RISK
SINCE THE VIRUS OUTBREAK STARTED OUTSIDE OF THE US, THE FIRST LINE OF DEFENSE IS TO MANAGE PLACES WHERE THE VIRUS COULD ENTER.
"HI, WELCOME TO THE USA. HAVE YOU TRAVELED TO CHINA IN THE LAST 14 DAYS? HAVE YOU BEEN IN CONTACT WITH SOMEONE WHO HAS?"

STEP 2: CHECKING SYMPTOMS
IF ANY RISK IS DETERMINED, A SECONDARY SCREENING IS CONDUCTED TO EVALUATE THEIR SYMPTOMS.

STEP 3: TAKE ACTION
THEY ARE THEN EVALUATED AND MONITORED BY THE CDC WHICH MAY INVOLVE A 14-DAY QUARANTINE.

At the national level, our first line of defense is monitoring ports-of-entry^{11,14}

Since the virus outbreak began outside of the US, the first line of defense is to manage places where the disease could enter. The CDC has ordered airlines to find out which passengers have traveled to China in the last 14 days and major international airports to screen all incoming travelers.

The three-part process begins with Custom and Border Protection agents questioning travelers. Next, those at-risk are sent to a secondary screening by health workers where their temperature is taken. Then, those showing symptoms are evaluated and monitored by the CDC—which may involve a 14-day quarantine. Travelers who have been to China in the last 14 days are advised to stay home and monitor their symptoms.

HOW DOES A HOSPITAL RESPOND TO A QUARANTINE?

WE'VE RECEIVED TRAINING AND HAVE PROTOCOLS ON HOW TO HANDLE PATIENTS SUSPECTED OF HAVING COVID-19. THE HOSPITAL HAS LOTS OF SICK PEOPLE THAT MAY BE AT GREATER RISK FROM HAVING SEVERE SYMPTOMS FROM THE VIRUS.

PERSONAL PROTECTION EQUIPMENTS CRUCIAL TO HEALTH WORKER SAFETY!

MILD CASES: SELF-QUARANTINE AT HOME

SEVERE CASES: ISOLATE IN HOSPITAL

DOCTORS AND NURSES

ADMINISTRATORS

PATIENTS

CUSTODIANS

IT'S IMPORTANT THAT **EVERYONE** IN THE HOSPITAL ENVIRONMENT IS EDUCATED ABOUT THE RISKS AND HOW TO DEAL WITH COVID-19. THIS INCLUDES NOT ONLY **DOCTORS AND NURSES**, BUT **PATIENTS, ADMINISTRATORS, AND CUSTODIANS** TOO. WE ALL PLAY A PART IN KEEPING THIS DISEASE CONTROLLED AND PEOPLE HEALTHY!

If the virus enters a state, hospitals need to be prepared to respond^{2,12,15}

If there is a suspected case of the COVID-19 in the region, hospitals and local clinics should be trained in how to deal with the virus. Mass General Hospital is 1 of 10 CDC designated "regional ebola and special pathogen treatment centers" in the US—meaning that they have expert knowledge in how to deal with something like an outbreak. Many other hospitals have turned to MGH as they update their emergency plans.

The US has already taken aggressive quarantine measures¹³

After closing its borders to China, the US took strict measures to prevent the spread of the virus. The US has allocated \$250 million in emergency funds to help prevent the spread of the virus. The US has ordered all people who have traveled to China in the last 14 days to be quarantined for 14 days—this has led to 800 patients quarantined in 6 military bases across the States so far.

These military bases were chosen because they could comfortably house hundreds of people. Patients are served 3 catered meals a day and have access to a mental health counselor. They are encouraged to keep 6 feet of distance at all time with other people, and they regularly have their symptoms checked.

But what does happen when a city shuts down?¹⁰

In the US, it is very unlikely that the CDC would mandate an entire city be quarantined. US policy is actually to avoid place-based mass quarantines. Many the significant psychological and economic costs. However, in the case that a mass quarantine is ordered, cities have a plan manage the situation.

HOW DOES A CITY RESPOND TO QUARANTINE?

*BASED ON THEIR SURVEILLANCE REPORTS, THE CDC HAS IDENTIFIED A CITY TO BE QUARANTINED.

ALRIGHT TEAM, WE'VE GOT OUR ORDERS, WE HAVE TO LOCKDOWN THE CITY, WE HAVE 5 DAYS TO DO IT.

INCIDENT MANAGER

1 SHUT DOWN PUBLIC PLACES

2 RESTRICT MASS TRANSIT

3 ENCOURAGE BUSINESSES TO CLOSE... AND EMPLOYEES TO STAY HOME

4 CREATE CHECKPOINTS, CURFEWS, TRAVEL PERMITS, AND ISSUE HEALTH CERTIFICATES

5 ENFORCE A QUARANTINE

6 KEEP THE PUBLIC UPDATED VIA TEXT, CABLE TELEVISION, RADIO, AND DOOR-TO-DOOR

IT IS VERY UNLIKELY THIS WOULD HAPPEN IN AMERICA; U.S. POLICIES ACTUALLY ACT AGAINST ENACTING PLACE-BASED MASS QUARANTINES.

However, the situation is under control, and more extreme measures like this have not been required to deal with COVID-19 in the US.

While you may not see it, a lot of people are working to contain this virus so you can stay well.



IMPORTANT RESOURCES



World Health Organization

World Health Organization

Information and guidance for general publics.

Live update

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>



Centers for Disease Control and Prevention

Information and guidance for general publics and healthcare professionals

Live update

<https://www.cdc.gov/coronavirus/2019-nCoV/>



National Institute of Allergy and Infectious Diseases

<https://www.niaid.nih.gov/diseases-conditions/coronaviruses>



US Food and Drug Administration

<https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/novel-coronavirus-2019-ncov>

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