

# HUMUNITED 2020

## Background Guide - World Health Organization II

Luiza Rufino  
Miwa Kuwada



# Summary

<b>A welcome message by the Secretary General and PGA</b>	<b>2</b>
<b>Chairs Greetings</b>	<b>3</b>
<b>Topic background</b>	<b>4</b>
<b>Current Situation</b>	<b>6</b>
<b>Discussion</b>	<b>9</b>
<b>Guiding Questions</b>	<b>12</b>
<b>Further reading</b>	<b>12</b>
<b>References</b>	<b>13</b>

# A welcome message by the Secretary General and PGA

---

Honorable delegates,

Welcome everyone to the first edition of HUMUNITED ONLINE! We are thrilled to have you participating in your respective councils in order to discuss such a pressing issue in our current society, and are very thankful for your dedication and willingness to partake in a conference as special as this one.

We had hoped to see you all in person at this years HUMUNITED, however, we had to adjust and adapt to our current situation and, as the famous scientist Charles Darwin said: “It is not the strongest or the most intelligent who will survive, but those who can best manage change.” And, as we all know, when the music changes, so does the dance. Hence, we put our best efforts into making this event possible and are hopeful that our goal was achieved.

Taking part in MUN conferences has allowed us to enlighten ourselves in many ways that are indescribable, and we are honored to provide all these feelings and experiences for you! Thus, we welcome you to your councils’ Background Guide, knowing how much thought your chairs put into doing their best for you to have more ways to deepen your knowledge in this specific topic.

We wholeheartedly believe that HUMUNITED brings such knowledge to those who participate in it and, therefore, we urge you to enjoy every second of it and truly make the most of your time debating, researching, and allowing yourself to get to know a different perspective on the topic, as well as learning from those who are in your council. Getting to have such an experience is truly something that changes your viewpoint on many subjects and that you hopefully keep seeking knowledge and change because it is honestly essential to humankind.

Yours truly,

**Thomás Danelon**  
*Secretary General*

**Isabella Mazanati**  
*President of the General Assembly*

# Chairs Greetings



Dear Delegates,

It is with great pleasure that we, the chairs, welcome you into the World Health Organization.

My name is Luiza Rufino and I am a 12<sup>th</sup> grade student at Colégio Humboldt. This year will be my greatest pleasure to participate in HUMUNITED as a Chair of the World Health Organization, also known as WHO. I believe that many of you have already written this on your respective application forms, but I would like to emphasize that taking part in a MUN conference enriches us not only in debating skills but also as human beings, giving us new life perspectives and for that reason, I can't wait to guide you in a rich and well-balanced debate.

Hello everyone! My name is Miwa Kuwada and I graduated school last year, I'm currently studying to take the "vestibular" at the end of the year. I really enjoy participating in MUN conferences, not only because debating can be fun, but also because it helped me grow a lot as a person and to understand better other points of view. I cannot put into words how good it feels to participate in this conference again!

The topic, **COVID-19: the global race to find a cure and the scientific challenges to overcome** might sound complex at first, but hopefully, through this background guide and further studying you will acquire the confidence and knowledge to be able to take part in a great an informative debate.

We are very excited to meet you all! It is a pleasure to participate in this online edition of HUMUNITED!

If you happen to have any questions or concerns, on any topic, please do not hesitate to reach out to us!

Miwa Kuwada - Chair of the WHO  
+55 (11) 99920-3132 (Whatsapp)

Luiza Rufino - Chair of the WHO  
+55 (11) 97626-8989 (Whatsapp)

## Topic background

---

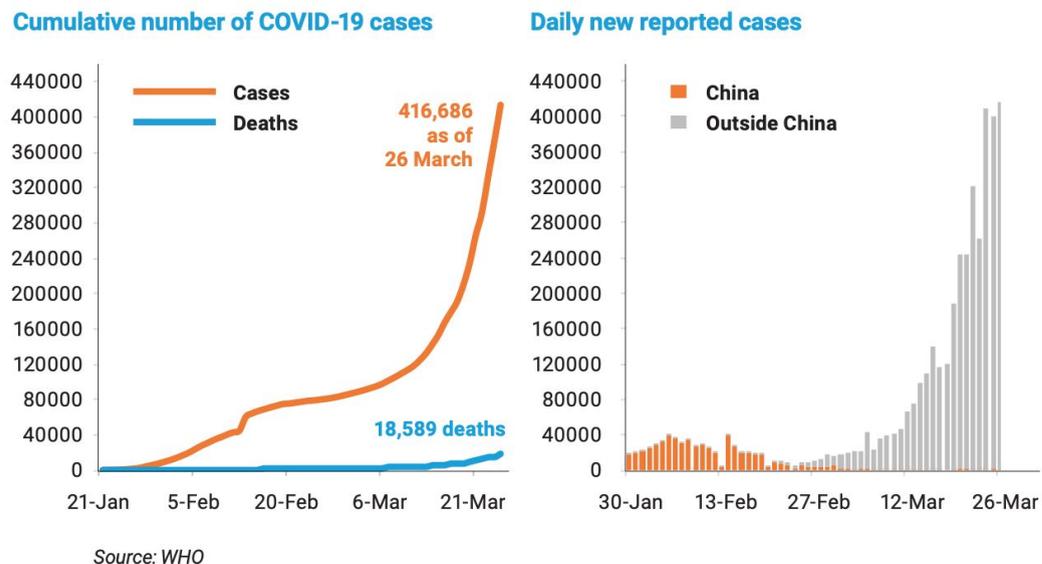
On December 29<sup>th</sup> 2019, a hospital in Wuhan, capital of the province of Hubei in China admitted four people with pneumonia and acknowledged that the four had worked at the *Huanan Wholesale Seafood Market*, a wet-type market. On December 31<sup>st</sup>, the Chinese government notified the World Health Organization (WHO) about 40 new cases of a new disease, but this disease had something different, its lethality did not matter as much as its expansion, that is, this new coronavirus spread with a speed out of control. On January 13<sup>th</sup>, the first case of the virus outside China, in Thailand, was confirmed, and on the 20<sup>th</sup> of the same month, the virus had already reached the American continent.

The viruses known as corona (CoV) are part of a large family that causes respiratory infections in humans and animals with several specificities between them, presenting symptoms with some similarities and other differences, with colds and flu from mild to strong intensity. However, viral diseases are very unstable and, specifically in the corona family, can cause severe respiratory syndromes (“Severe Acute Respiratory Syndrome” [SARS]).

The main symptoms of SARS-CoV-2 are fever, cough, and fatigue, but these do not always occur and symptoms such as shortness of breath, sore throat, loss of appetite, diarrhea, loss of smell and taste can be verified. However, even if these symptoms are aggravated due to underlying diseases the patient has, such as respiratory or heart diseases, diabetes, etc., according to the research by the french doctor Ramy Rahmé, 30% of the infected are asymptomatic, 55% have mild symptoms, 10% have severe symptoms and only 5% have critical symptoms.

Therefore, SARS-CoV-2 spread occurs when the patient is still asymptomatic through the droplets of sneezes or cough from someone infected, or through fomites (objects, such as cell phones, clothes or shoes for example) which, once contaminated, can be transmitters when a person places their hands over their eyes, noses or mouths. For these reasons, the number of cases of this disease increases exponentially and doubles over two days. Thus, the

COVID-19 went from an outbreak in Wuhan, to an epidemic in China to a worldwide pandemic, in a matter of weeks.



To keep track of the new coronavirus cases, many studies have developed graphics showing and predicting the number of cases in the future since the first case was diagnosed. These graphics help governments decide which safety and protective measures should be taken based on the number of cases and the projection.

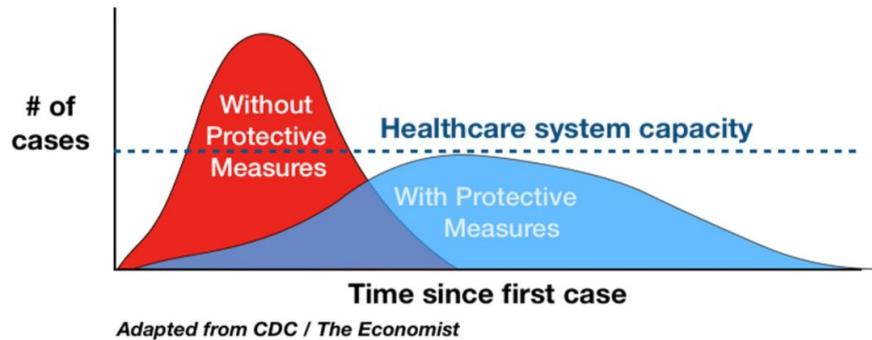
The gentler curve results in fewer people infected — preventing a surge that would overwhelm the healthcare system and ultimately, one hopes, resulting in fewer deaths, while its opposite results in many infected people, the potential collapse of the healthcare system, and many deaths.

Flattening the curve is key to ensuring health services aren't overwhelmed by coronavirus cases since the goal of fighting a pandemic is to halt the spread of the disease. Slowing it is critical, reducing the number of active cases, which gives doctors, hospitals, schools, police, and vaccine-manufacturers time to prepare and respond, without becoming overwhelmed. Simple measures such as regularly washing hands and practicing social distancing are crucial to decrease the number of cases and also protect yourself and others from the virus.

Furthermore, the World Health Organization (WHO) advises:

- Wash hands frequently;
- Maintain social distancing;
- Avoid touching your eyes, nose, and mouth;

- Cover your mouth and nose when coughing or sneezing;
- Seek medical attention and call in advance if experiencing a fever, cough and difficulty breathing;
- Stay informed and follow the advice given by local healthcare providers.



## Current Situation

---

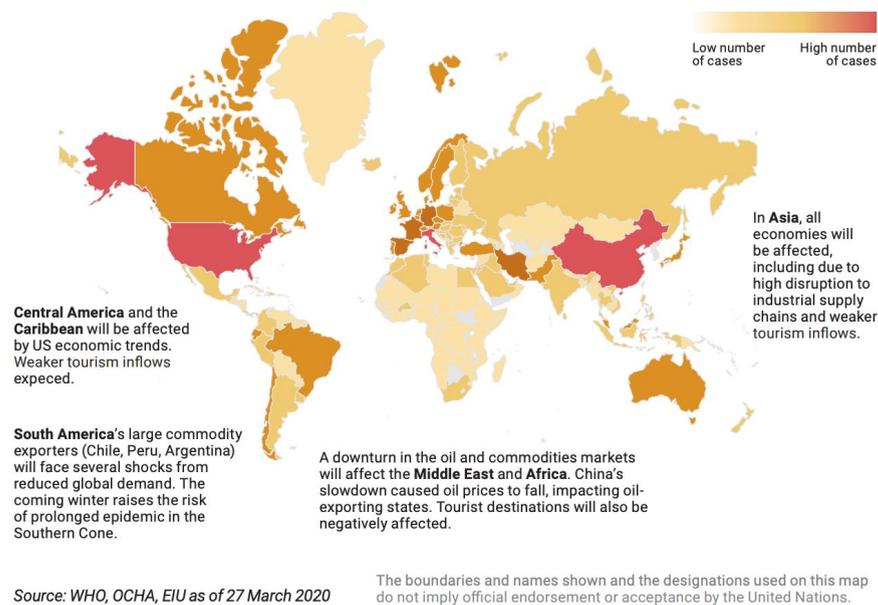
The current global crisis triggered by the spread of the new coronavirus has major geographical impacts. The territory and the processes of deterritorialization are fundamental at this moment. Many countries have adopted the measure of social distancing to avoid crowds and close contact with people so that the virus is less likely to spread. The social distancing can be increased and in this case, schools close, events are canceled and teleworking is encouraged... However, essential services must be maintained as long as there is no closer contact than 2 meters between people. Isolation is also an option and the aim is to separate infected from non-infected people to prevent the virus from spreading.

When measures of social distance and isolation are insufficient, it may be necessary to implement the lockdown. This measure is an intervention applied to a community, a city or a region, with the objective of restricting the interaction between people and interrupting any activity for a short period, with the exception of outings for basic activities such as purchasing groceries or medicines. However, with a widely connected world, where there is a constant displacement of products, people, and knowledge, it is not easy to restore territorial controls in which mobility is practically prohibited.

Since the new coronavirus was reported in 2019, until June 14<sup>th</sup>, 2020, about 7,823,289 people around the globe have been confirmed with COVID-19 and about 431,541 people died from the disease. Currently, South America is the epicenter of the disease and is also one of the most affected continents by the new coronavirus, in addition to Europe and North America, which have many confirmed cases.

Each country has adopted its own isolation measures and there are restrictions on tourism, despite the fact that some countries are gradually beginning to relax the isolation measurement. Italy, Spain, England, France, and Germany are the European countries with the largest number of people infected with COVID-19. On the other hand, African countries, despite the relatively low number of contaminations in relation to the European and Asian continents, have concerns, such as the deficiency of infrastructure, large population, and the very precarious public health care system.

With the rapid spread of the virus, several countries have announced the closure of air and land borders. Festivals and major events were postponed or even canceled, such as the Olympics in 2020, postponed to 2021. Thus, countries, such as Brazil, the United States of America, Germany, Italy, and Canada, closed their borders and isolated their countries.



When certain viruses spread through the population, some infected die but others survive, because their immune systems have learned to recognize the virus and fight it, and if that happens to enough people, the virus's proportions get smaller, this is called group

immunity. When this type of immunity is achieved, the infection rate decreases, and, eventually, the virus dies.

Therefore, in the case of COVID-19, waiting for the world to achieve group immunity in a natural way is not the best approach, because in addition to costing the lives of millions, lifelong immunity is also not certain. There are two possibilities of immunity:

***1. If immunity to SARS-CoV-2 is not permanent, it is likely for the virus to enter in regular circulation.***

This means that, like the pandemic flu, SARS-CoV-2 would enter into circulation in long-term alongside other human betacoronavirus, possibly in annual, biennial or sporadic patterns over the next five years. The short-term immunity (40 weeks, similar to HCoV-OC43 and HCoV-HKU1) favors the establishment of annual SARS-CoV-2 outbreaks, while long-term immunity (two years) favors biennial outbreaks;

***2. If immunity to SARS-CoV-2 is permanent, the virus may disappear for five or more years after causing a severe outbreak.***

Long-term immunity would consistently lead to the effective elimination of SARS-CoV-2 and the lower overall incidence of infection. If SARS-CoV-2 induces cross-immunity against HCoV-OC43 and HCoV-HKU1, the incidence of all betacoronaviruses may decrease and even disappear. The elimination of HCoV-OC43 and HCoV-HKU1 would be possible if SARS-CoV-2 induces 70% cross-immunity against both of them, which is the same estimated level of cross-immunity that HCoV-OC43 induces against HCoV-HKU1.

Furthermore, there are no proven effective medications against SARS-CoV-2. The current course of treatment against this coronavirus is symptomatic and supportive care, such as maintaining vital signs, oxygen saturation, and blood pressure, and treating complications, such as secondary infections or organ failure.

However, researches are currently being conducted to find a treatment that can be truly effective against COVID-19. Some of them are:

1. Remdesivir: experimental drug under development by Gilead Sciences, Inc. This is an unapproved antiviral drug that is being developed for Ebola and SARS. In a case report of COVID-19 in the United States, administration of remdesivir for compassionate use on the 11<sup>th</sup> day after infected by the disease resulted in a decrease in viral load, and the patient's clinical condition improved. However, further clinical trials are needed to determine the safety and effectiveness of this medication in treating patients with the infection;
2. Convalescent therapies (plasma from patients recovered from COVID-19): this strategy was used to support passive immunization. Based on MERS studies, therapeutic agents with potential benefits include convalescent plasma, combined interferon-beta / ribavirin therapy, and lopinavir. However, there is still no experience in COVID-19 or in controlled clinical trials for this treatment;
3. Antiviral drugs: lopinavir / ritonavir and ribavirin had been tested to treat SARS disease and had an apparent favorable clinical response. However, other randomized controlled trials in patients with COVID-19 are mandatory.

In this scenario, creating a vaccine is crucial. If enough people are vaccinated, it will be a safe shortcut to group immunity, which will save thousands of lives. But vaccines are also very difficult to develop. Since the genetic sequence of SARS-CoV-2, the coronavirus that causes COVID-19, was published on 11 January 2020, an intense global activity began in order to develop a vaccine against the disease. The scale of the humanitarian and economic impact of the COVID-19 pandemic is driving evaluation of next-generation vaccine technology platforms through novel paradigms to accelerate development.

## Discussion

---

Vaccines typically require years of research and testing before reaching the clinic, but scientists are racing to produce a safe and effective vaccine by next year. The need to rapidly

develop a vaccine against SARS-CoV-2 comes at a time of explosion in basic scientific understanding, including in areas such as genomics and structural biology and by now, researchers around the world are developing more than 135 vaccines against the new coronavirus

However, the production of a safe vaccine requires dozens of criteria:

1. **PRECLINICAL TESTING:** Scientists give the vaccine to animals such as mice or monkeys to see if it produces an immune response.
2. **PHASE I SAFETY TRIALS:** Scientists give the vaccine to a small number of people to test safety and dosage as well as to confirm that it stimulates the immune system.
3. **PHASE II EXPANDED TRIALS:** Scientists give the vaccine to hundreds of people split into groups, such as children and the elderly, to see if the vaccine acts differently in them. These trials further test the vaccine's safety and ability to stimulate the immune system.
4. **PHASE III EFFICACY TRIALS:** Scientists give the vaccine to thousands of people and wait to see how many become infected, compared with volunteers who received a placebo. These trials can determine if the vaccine protects against the coronavirus.
5. **APPROVAL:** Regulators in each country review the trial results and decide whether to approve the vaccine or not. During a pandemic, a vaccine may receive emergency use authorization before getting formal approval.

But, at the current juncture, new means are created for a quick release of the vaccine:

1. **WARP SPEED:** The U.S. government's Operation Warp Speed program has selected five vaccine projects to receive billions of dollars in federal funding and support before there's proof that the vaccines work.
2. **COMBINED PHASES:** Another way to accelerate vaccine development is to combine phases. Some coronavirus vaccines are now in Phase I/II trials, for example, in which they are tested for the first time on hundreds of people.

Of the confirmed active vaccine candidates 72% are being developed by private/industry developers, with the remaining 28% of projects being led by academic,

public sector, and other non-profit organizations. Although a number of large multinational vaccine developers (such as Janssen, Sanofi, Pfizer, and GlaxoSmithKline) have engaged in COVID-19 vaccine development, many of the lead developers are small and/or inexperienced in large-scale vaccine manufacture.

For that reason, it will be important to ensure coordination of vaccine manufacturing and supply capability and capacity to meet demand. Most COVID-19 vaccine development activity is in North America, with 46% developers of the confirmed active vaccine candidates compared with 18% in China, 18% in Asia (excluding China) and Australia, and 18% in Europe.

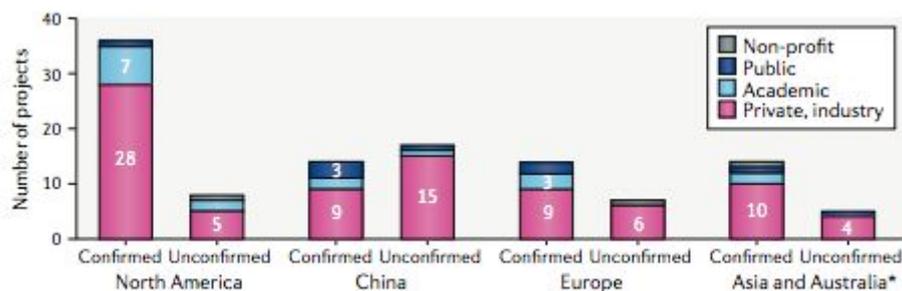


Fig. 2 | Profile of COVID-19 vaccine developers by type and geographic location. For partnerships, the location is that of the lead developer. \*Excluding China.

The approaches being applied for COVID-19 development are likely to increase the risks associated with delivering a licensed vaccine, and will require careful evaluation of effectiveness and safety at each step.

Strong international coordination and cooperation between vaccine developers, regulators, policymakers, funders, public health bodies, and governments will be needed to ensure that promising late-stage vaccine candidates can be manufactured in sufficient quantities and equitably supplied to all affected areas, particularly low-resource regions. The Coalition for Epidemic Preparedness Innovations (CEPI) has recently issued a call for funding to support global COVID-19 vaccine development efforts guided by three imperatives: speed, manufacture and deployment at scale and global access.

## Guiding questions

---

1. Keeping in mind that all continents, besides Antarctica, were affected by the pandemic, what measures are effective to contain the virus?
2. How could developed countries provide the medicines needed to take care of the affected population?
3. Recognizing that testing for COVID-19 is key, what was the testing rate in your country?
4. Taking into consideration that many companies are partnering along academic institutions, have there been any partnerships that affected the development of a vaccine or medicine in your country?
5. Assuming the imminent development of a vaccine, what are the geopolitical obstacles to overcome for its distribution?
6. Deeply concerned by the coronavirus high mortality rate in developing and undeveloped countries, what measures can be taken in order to include everyone when a vaccine/medicine is available?
7. Besides the vaccine, studies about medicines are also very important, what experiments and studies have been shown effective?

## Further reading

---

1. WHO Coronavirus Disease Dashboard -  
[https://covid19.who.int/?gclid=Cj0KCQjwuJz3BRDTARIsAMg-HxU3lkYwfVr7Jw3BPRJe32FITizpcI3E4uOhMuUQ58qBT-4nroV9x3MaAtRdEALw\\_wcB](https://covid19.who.int/?gclid=Cj0KCQjwuJz3BRDTARIsAMg-HxU3lkYwfVr7Jw3BPRJe32FITizpcI3E4uOhMuUQ58qBT-4nroV9x3MaAtRdEALw_wcB)
2. Flattening the Coronavirus Curve -  
<https://www.nytimes.com/article/flatten-curve-coronavirus.html>

3. Coalition for Epidemic Preparedness Innovations - <https://cepi.net>
4. Global solidarity needed, to find affordable, accessible COVID-19 vaccine - <https://news.un.org/en/story/2020/06/1065622>
5. WHO Coronavirus disease Situation Report 148 - [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200616-covid-19-sitrep-148-draft.pdf?sfvrsn=9b2015e9\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200616-covid-19-sitrep-148-draft.pdf?sfvrsn=9b2015e9_2)
6. Coronavirus vaccine: When will we have one? - <https://www.bbc.com/news/health-51665497>
7. Draft landscape of COVID-19 candidate vaccines - <https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>
8. Equitable and timely access to coronavirus vaccine - <https://news.un.org/en/story/2020/05/1064442>
9. WHO's official website - <https://www.who.int/>
10. Surveillance strategies for COVID-19 human infection - <https://www.who.int/publications/i/item/surveillance-strategies-for-covid-19-human-infection>
11. Coronavirus Vaccine Tracker - [https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html?utm\\_source=Nature+Briefing&utm\\_campaign=f3c1b9ca3d-briefing-dy-20200611&utm\\_medium=email&utm\\_term=0\\_c9dfd39373-f3c1b9ca3d-45509226](https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html?utm_source=Nature+Briefing&utm_campaign=f3c1b9ca3d-briefing-dy-20200611&utm_medium=email&utm_term=0_c9dfd39373-f3c1b9ca3d-45509226)
12. Accelerating a safe and effective COVID-19 vaccine - <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov/accelerating-a-safe-and-effective-covid-19-vaccine>

## References

---

<https://www.nytimes.com/article/flatten-curve-coronavirus.html>  
[https://www.un.org/sites/un2.un.org/files/sg\\_report\\_socio-economic\\_impact\\_of\\_covid19.pdf](https://www.un.org/sites/un2.un.org/files/sg_report_socio-economic_impact_of_covid19.pdf)  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7162753/>  
<http://www.dailystar.com.lb/Opinion/Commentary/2020/Apr-21/504707-the-social-impact-of-coronavirus.ashx>

<https://www.nejm.org/doi/full/10.1056/NEJMp2005835>  
<https://jamanetwork.com/journals/jama/article-abstract/2763188>  
<https://www.nejm.org/doi/full/10.1056/NEJMp2006141>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7188040/>  
[https://www.un.org/sites/un2.un.org/files/sg\\_report\\_socio-economic\\_impact\\_of\\_covid19.pdf](https://www.un.org/sites/un2.un.org/files/sg_report_socio-economic_impact_of_covid19.pdf)  
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>  
<https://www.who.int/publications/i/item/surveillance-strategies-for-covid-19-human-infection>  
<https://science.sciencemag.org/content/368/6493/860>  
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov>  
<https://www.nature.com/articles/d41573-020-00107-y>  
[https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html?utm\\_source=Nature+Briefing&utm\\_campaign=f3c1b9ca3d-briefing-dy-20200611&utm\\_medium=email&utm\\_term=0\\_c9dfd39373-f3c1b9ca3d-45509226](https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html?utm_source=Nature+Briefing&utm_campaign=f3c1b9ca3d-briefing-dy-20200611&utm_medium=email&utm_term=0_c9dfd39373-f3c1b9ca3d-45509226)