



COVID-19 UPDATE

October 2021



About this Update

The world is constantly learning about the SARS-CoV-2 virus and the illness it causes (which is called COVID-19). This information changes often, so it's important to check **trusted** sources regularly.

We get information for these slides from WHO, the Centers for Disease Control, Johns Hopkins, peer-reviewed scientific journals and other credible sources. It does not come from Facebook or other social media.

What the world has learned about

- The pandemic
- Transmission
- Prevention
- What COVID-19 can do to people (including people living with HIV)
- Care and treatment
- Variants
- Vaccines

The Pandemic

Globally, as of Monday 2 October :

- at least **234,977,037** people have been infected with SARS-CoV-2
- At least **4,803,145** people have died from COVID-19
- **6,309,592,161** doses of COVID-19 vaccines have been administered

Source, and for information about the virus in your country, go to: <https://coronavirus.jhu.edu/map.html>

Transmission

It's all about what you inhale

SARS-CoV-2 is airborne.

It spreads when a person who has it coughs, sneezes, sings, talks or exhales, because they release tiny virus-laden droplets and aerosols (much smaller particles that stay in the air much longer than heavier droplets).

Other people get infected when they inhale these droplets and aerosols, or if they land inside the nose, eyes or mouth.

Sun and wind are your friends—the sun's UV-B rays can inactivate the virus and the wind can blow it away.

Transmission

It's possible, but not likely, that people could get COVID-19 from touching surfaces with droplets/aerosols from a person with COVID-19, if they then touch their eyes, nose or mouth – this allows the virus to enter their body.

Washing your hands for at least 20 seconds with soap and water or sanitizer with 70% alcohol – and not touching your face (unless you have just washed your hands) reduces this risk.

Prevention

Preventing COVID-19

- Wear a mask that covers your mouth and nose – especially indoors
- The outdoors is your friend. Avoid crowded, poorly ventilated indoor spaces.
- Use ‘social distancing’—stay 2 meters (6 feet) away from other people.
- Stay away from sick people.
- Get tested, and isolate if you find out that you have been in contact with someone who has COVID-19 or if you feel ill.
- Wash your hands thoroughly and often, and don’t touch your face unless you have just washed your hands.

Preventing COVID-19

Some people (~45%) with COVID-19 never have any symptoms.

This means we need to assume that anyone could have it.

What COVID-19 can do to people

COVID-19 symptoms

Most people fall ill within 4-5 days after they are infected, but it can take up to 2 weeks for symptoms to show up.

The most common symptoms of COVID-19 are fever, chills, dry cough, shortness of breath or difficulty breathing, appetite loss, nausea, vomiting, diarrhea, fatigue, muscle and body aches, headaches, loss of the sense of smell and taste, sore throat, stuffy or runny nose, conjunctivitis (red, itchy eyes), skin rash, and discolored (purplish) fingers and toes.

COVID-19 and people living with HIV

People living with HIV are no more likely to get COVID-19 than anyone else, *but they are more likely to become seriously ill, especially if:*

- they are older (age >60 years)
- they have pre-existing conditions such as obesity and diabetes
- they have a low CD4 cell count (<200 cells/mm³), and/or a high viral load—and if they are not on ART

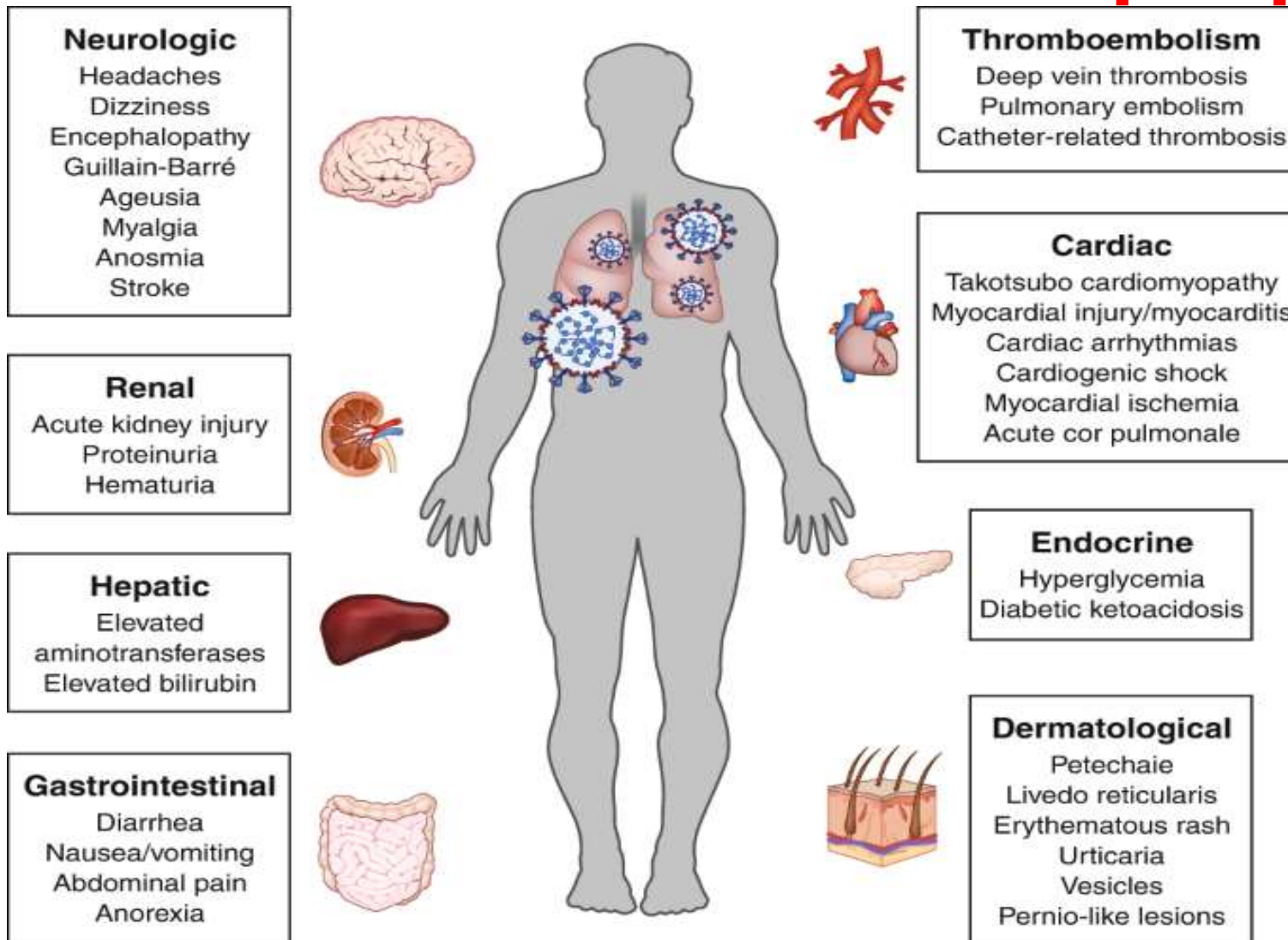
What COVID-19 does to people

The virus itself can make people very ill.

COVID-19 can have an impact on many organs and systems in the body. It can damage the heart, lungs, kidneys, liver and cause strokes.

The immune response to the virus can also make people very ill. COVID-19 can trigger ‘cytokine storm’, when the immune system overacts, and attacks tissues and cells.

What COVID-19 can do to people



COVID-19 can have an effect on many body parts and systems—not just the lungs. It's different for each person.

How ill can COVID-19 make a person?

80% of people with COVID-19 do not become seriously ill.

15% become seriously ill, and 5% become critically ill.

The COVID-19 death rate differs, by age, pre-existing conditions- and by country. For example, in South Africa, people with diabetes and/or kidney disease were up to 13 times more likely to die from COVID-19. during mid-2020.

People who have TB are more likely to become seriously ill and die from COVID-19.

Long COVID

Some people are ‘long-haulers’—they have a range of symptoms that go on for months, including shortness of breath, chest tightness, mild to severe fatigue, chills or sweats, body aches, dry cough, headaches, “brain fog” (trouble with memory and concentration), and gastrointestinal symptoms.

This is happening to people of all ages, including those who are fit, young and healthy. We do not know what puts people at risk for long COVID and are not sure how to treat it.

COVID Re-infection

Some people have become re-infected with SARS-CoV-2 after recovering from COVID-19.

The immune system can protect a person who has had COVID-19 for at least a few months - but it is not always able to. Everyone has a different immune system, some stronger than others; it also may depend on how long ago they were ill with COVID-19, and other factors, including age.

Care and Treatment

Care

People with mild COVID-19 usually recover at home; rest, fluids and fever reducers are recommended.

Monitoring your temperature with a thermometer and your oxygen levels with a pulse oximeter (a device that clips on to your finger) can help alert you that you are getting sicker and may need medical help.

People who are elderly and/or have a pre-existing condition should check with a healthcare provider, and be monitored by family, friends or healthcare worker.

Care and Treatment

People with moderate to severe COVID-19, especially those with pre-existing conditions, may need to be hospitalized, where they may be given oxygen and other medicines to make them more comfortable.

Severe COVID-19 can cause the immune system to over-react and may need medicines that suppress it, but these medicines can be harmful for people with mild-to-moderate illness, because they need their immune system to fight the virus.

Treatment

Thousands of clinical trials are looking at types and timing of treatments for COVID-19.

Some medicines can prevent people from developing severe COVID-19 if people take them soon after becoming infected, while others are only effective for people who already have severe COVID-19.

Monoclonal antibodies (mAbs)

mAbs are proteins made in a laboratory. They act like antibodies – a part of the immune system that can prevent you from falling ill by blocking viruses - and other invaders - from entering your cells.

The US FDA granted emergency use authorization to single mABs and mAB combinations which can prevent COVID-19 from worsening in people with mild-to-moderate illness who are at high risk for severe COVID-19, hospitalization and death- and one to treat severe COVID-19 (tocilizumab).

Monoclonal antibodies (mAbs)

mAbs are given through intravenous (IV) infusion – they take about an hour to administer, followed by an hour of observation and monitoring.

Unfortunately, mAbs are complicated to produce.

Also, mAbs do always not work well - or at all - against newer forms of SARS-CoV-2 (called variants).

Treatment – what works

So far, one life-saving treatment has been identified:
dexamethasone.

It is a steroid, available as an affordable generic.

Dexamethasone improves survival in people who are very ill - on a ventilator or oxygen, because it calms down their over-reacting immune system— but it does not help people with milder COVID-19, who need an immune response to fight it off.

Antivirals for COVID-19 in development

Molnupiravir - currently in phase III - an oral nucleoside analog taken every 12 hours for 5 days (interim results from a phase III trial)

Reduced the risk of hospitalization or death by 50% among at risk, non-hospitalized adult patients with mild-to-moderate COVID-19.

Results from the phase III trial will go to regulatory agencies soon

PF-07321332 - currently in phase III - an oral, ritonavir-boosted protease inhibitor, taken every 12 hours for 5 days

Many other oral antivirals for COVID-19 are in earlier stages of development

Treatment—what does not work for people with severe COVID-19

The WHO Solidarity Trial, done in nearly 12,000 people hospitalized with COVID-19 across 30 countries, compared 4 treatments: **remdesivir, hydroxychloroquine, lopinavir/ritonavir and interferon** to the standard of care.

None of them made a significant difference in:

- how long people stayed in the hospital
- whether or not they went on a ventilator
- survival

Variants

Changes to SARS-CoV-2

After entering people, viruses multiply, making millions to billions of copies of themselves each day. These copies may have changes, called mutations, that happen at random.

The more people with a virus, the more chances the virus has to mutate. Some mutations make the virus weaker, and others can make it more contagious, help it to hide from the immune system, and/or become deadlier. Also, researchers have discovered that people with very weak immune systems can remain infected with SARS-CoV-2 for months - and it keeps mutating during this time.

Variants

A virus with mutations that spreads into a population is called a variant - this means that it is a different version of that virus.

There are many SARS-CoV-2 variants; some have spread across the world, Scientists and public health experts are paying attention to these variants, because some of them can hide from the immune system in people who have already had COVID-19 or have been vaccinated.

Other variants are more contagious and could make people sicker. This happens when the virus changes in ways that make it easier to enter our cells—sort of like having a key that slides easily into a lock, instead of one that does not work easily.

The good news is that prevention still works!

Variants under monitoring, of interest and of concern

- *Variants under monitoring* (VOM) are versions of the virus that scientists follow closely, to see if they are more contagious, and/or cause severe illness, and/or are better able to hide from our immune system
- *Variants of interest* (VOI) **might be** more contagious, and/or cause severe illness, and/or be able to hide from our immune system
- *Variants of concern* (VOC) **are known to be** more contagious, and/or cause severe illness, and/or be able to hide from our immune system

Variants of concern

- **Alpha** (also called B.1.1.7); more contagious, causes more serious illness
- **Beta** (also called B.1.351); more contagious, able to hide from the immune response, causes more serious illness
- **Gamma** (also called P.1); more contagious, able to hide from the immune response, causes more serious illness
- **Delta** (also called B.1.617); much more contagious, able to hide from the immune system, causes more serious illness - especially in young people

Newer variants

Mu, which was first identified in Colombia in January 2021; may be able to hide from the immune response

C.1.2 – which has not been named a variant of interest, was discovered in South Africa; it has more mutations than any other variant so far, including some that make SARS-CoV-2 better able to hide from the immune response and more contagious

The more people who get vaccinated, the fewer chances SARS-CoV-2 will have to mutate

Vaccines

COVID-19 vaccine concerns

Many people have concerns about COVID-19 vaccines, because they were developed quickly. But they are all based on years of research. We know that approved vaccines are safe and effective.

There are things we don't know yet- such as how long they will protect people from COVID-19, and we are still learning about rare side effects—we will discover more over time, and as more people get the vaccines.

Why COVID-19 vaccine access – and getting vaccinated- are so important

Being vaccinated can protect people from serious illness, hospitalization and death from COVID-19 – and it protects other people who are around you

The more people who are vaccinated, the less chance there is for variants to develop

The best ways to stop the pandemic are masking, physical distancing, staying away from other people if you have COVID-19 and, especially, getting vaccinated

COVID-18 vaccines

Several COVID-19 vaccines are approved for adults ages 18 and over; one for people ages 12 and over and one for children ages 3 and over as trials in younger children continue.

These vaccines use different approaches (mRNA, viral vector and inactivated virus) to introduce the immune system to SARS-CoV-2 so it can fight off the virus.

It is hard to compare how effective vaccines are, because they were studied in different groups of people, such as healthcare workers who are at higher risk for COVID-19, or older people who don't respond as well to vaccines – and in different countries, with different variants.

Comparing COVID-19 vaccines

It is hard to compare different COVID-19 vaccines, because they were studied in different groups of people, such as healthcare workers who are at higher risk for COVID-19, or older people who don't respond as well to vaccines – and in different countries, with different variants.

Also, some trials measured the vaccine's effectiveness against getting infected, while others also looked at how well the vaccine could protect against serious illness, hospitalization and death.

It's better to get an available vaccine than to wait for one that looks better, since we are still learning about how they work in real life.

	phase III trials	emergency use approval)	peer reviewed data)	
Pfizer/BioNTech BNT162b2	yes	yes	94.6%	2
AstraZeneca/Oxford (AZD1222) and Serum Institute of India (Covishield)	yes	yes	Overall, 70.4%; varies from 62% -90%, by dose and age – may not be effective against SA variant B.1.351	2
Moderna m-RNA-1273	yes	yes	92%	2
Gamaleya Sputnik-5	yes; interim	pending	91.6% at 21 days after the first vaccine	2
Sinopharm BBI-BP-CorV	yes	yes	Not available; claims from 79-86%	2
Sinovac Coronavac	no	yes	Not available; claims range from 91.25 % to 50.4%	2
Sinopharm Inactivated	no	pending	?	2
CanSino Ad5-nCoV	yes; interim	pending	65.7% - 74.8%	1
Bharat Biotech Covaxin	Yes; interim	pending	80.6%	2
Johnson and Johnson	yes	38 countries and WHO	66% overall (61% in Brazil, 64% in South Africa, 72% in the US), also 85% against severe COVID-19 and 100% against hospitalization	1

COVID-19 vaccines for PLWH

Some COVID-19 vaccine trials included PLWH (on ARVs, with viral suppression and high CD4 cell counts), but the number of PLWH was too small to say if vaccines were just as effective for PLWH as other people, but there were no safety concerns for PLWH

COVID-19 vaccines are safe with ARVs

Studies have found that PLWH are not more likely to get COVID-19, but they are more likely to become very ill or die from it than people who don't have HIV - PLWH should be prioritized for vaccines (with respect for their confidentiality)

Vaccines and Variants

Current vaccines were developed to work against some versions of SARS-CoV-2. They may be less effective, or not effective, against newer variants—we are still learning about how well they work against newer variants.

Researchers are working on vaccines that are adapted to new variants; they are expected to become available by the end of 2021.

Prevention is still important to stop unvaccinated people from falling ill and dying, to halt development of new variants – and to prevent breakthrough infections among vaccinated people

Breakthrough infections in vaccinated people

Sometimes, fully vaccinated people still get COVID-19. This can happen because:

- Nothing is perfect
- Vaccines that can protect us from the original virus can be less effective against variants
- Some variants, such as Delta, are more contagious
- Countries - and people- have relaxed preventive measures, such as indoor masking
- The immune response to vaccines can fade over time
- Vaccines are less effective for people who are immunocompromised

Although vaccines don't always prevent COVID-19, they dramatically reduce the risk of becoming seriously ill with COVID-19, being hospitalized and dying from COVID-19

In countries with high vaccination rates, most people who fall ill with – and die from - severe COVID-19 it have not been vaccinated

Common side effects from COVID-19 vaccines

The immune response to a vaccine can make a person feel ill for a day or two – it does not mean that the vaccine is causing illness. Common side effects are:

Fever and chills

Pain and swelling where they got the injection

Muscle and joint pain

Fatigue

These symptoms are normal - and can be treated with paracetamol (after being vaccinated), putting ice on a sore arm and resting.

Everyone is different- some people don't feel ill after getting vaccinated.

Vaccines will still work for people who don't have these symptoms.

Rare and serious side effects from COVID-19 vaccines



Sometimes, people have more serious side effects from vaccines

Because they are very rare, we don't discover these side effects until many, many people get vaccinated

COVID-19 vaccines are being given to billions of people - more than have ever been vaccinated - so rare side effects are becoming known

Overall, the risk of these rare and serious side effects is much, much smaller than the risks from COVID-19 - which can cause some of the same problems

Rare and serious side effects (AZ and J & J vaccines)

- Blood clots with low platelets (which help the blood to clot) from Astra/Zeneca/Covishield and J & J, probably due to an immune response to something in the vaccine; more likely in women under age 50 after their first dose. Symptoms include shortness of breath, chest pain, headaches that don't go away, blurred vision, swollen legs, bruising and persistent bleeding. This can be fatal if not treated
- The J & J vaccine may increase the risk for Guillain-Barré syndrome - when the immune system attacks nerve cells. First symptoms are weakness, tingling or numbness in the arms and legs, double vision, and difficulty walking, speaking, chewing, swallowing or controlling your bladder or bowels. These symptoms can worsen into widespread muscle weakness and paralysis. They may pass within weeks, but people with more serious cases need hospitalization

Rare and serious side effects (mRNA vaccines)

- Inflammation of the heart muscle or tissue that lines the heart, usually in young men (under age 30), usually after the second dose
- A severe allergic reaction to something in the vaccine (usually within a short time after getting the vaccine)
- Facial paralysis, called Bell's Palsy (also from inactivated vaccines- Sinopharm and SinoVac)

Vaccine strategies: mixing different types of COVID-19 vaccines

- Some people believe that mixing two different types of vaccines – such as mRNA and inactivated viral vaccines - makes a better immune response than giving two doses of the same vaccine
- Trials are looking at this – so far, no evidence that it is harmful
- Some countries are mixing doses because of supply problems or because they believe one vaccine is less effective

Vaccine strategies: boosters

There are three medical reasons for COVID-19 booster shots:

1. When immunity from a vaccine fades over time – the vaccines are still new, so it is not clear how long they will protect us from COVID-19 – and we still don't know what the threshold is for protection from COVID-19
2. To protect us from new variants- the vaccines we have now were made to work against the original version of the virus – for example, they give less protection against the Delta variant. People may need a new version of the vaccine to protect them from variants
3. Immunocompromised people, including PLWH who are not on ART or have a high viral load and/or a low CD4 cell count, don't respond as well to vaccines- – boosters can help this and are recommended in some countries for PLWH

Vaccines for people who have recovered from COVID-19

COVID-19 vaccines are recommended for people who have recovered from COVID-19, because their immune response may not prevent them from becoming re-infected

Anyone who is ill with COVID-19 should not be vaccinated until they have recovered

Vaccines for people with Long COVID

Some people who have long COVID have gotten vaccinated. Researchers have reported that some of them do not feel any better after getting both doses of vaccine, some of them feel worse, and some of them feel much better.

So far this is a small group of people – not enough to figure out who will improve or worsen after getting vaccinated, and why this happens.

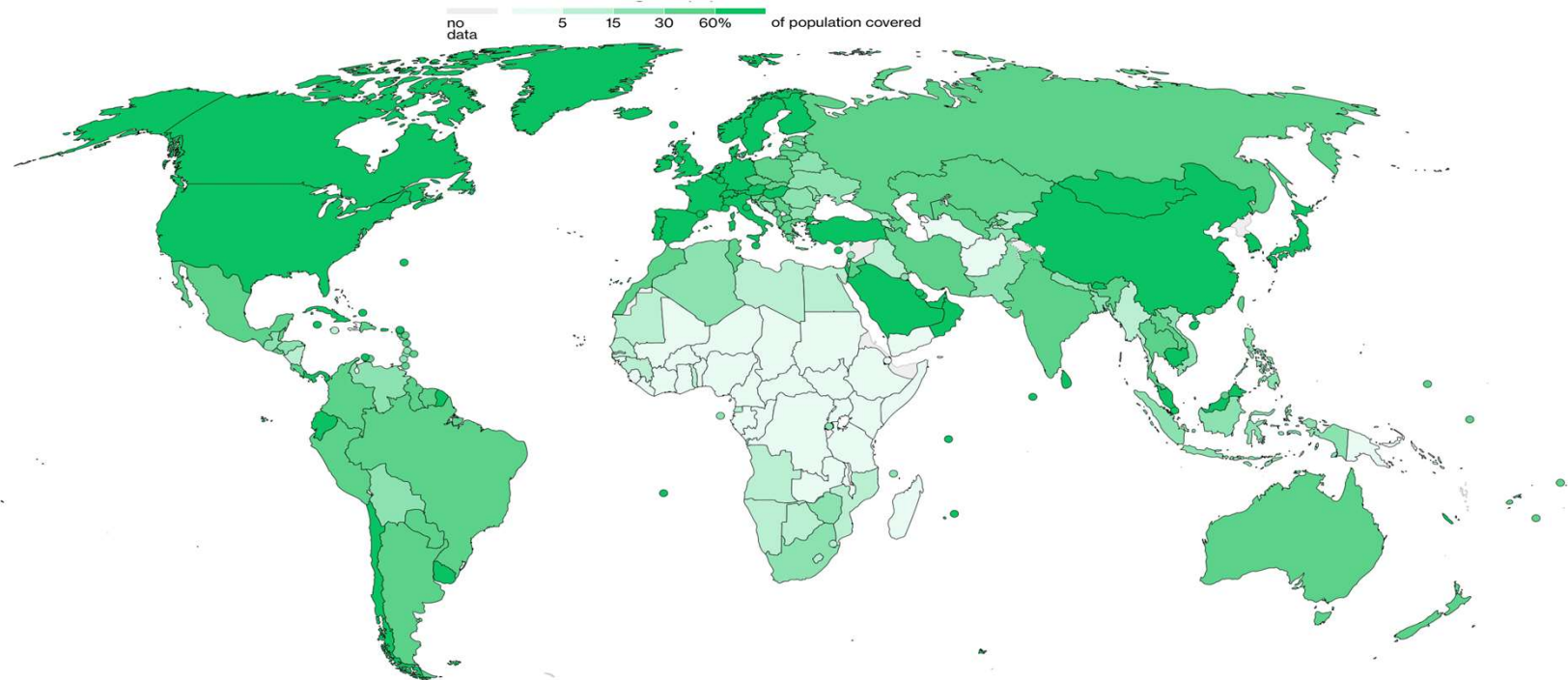
Is there anyone who should not get a COVID-19 vaccine?

- People who are ill with an infection should wait until they have recovered to get a vaccine
- People who are allergic to ingredients of the vaccine should not be vaccinated (or should get a different vaccine)

People with chronic illnesses, such as diabetes or hypertension and people who have cancer should be vaccinated, because they are at higher risk for severe COVID-19

Vaccine access

Enough doses of COVID-19 vaccines have now been administered to fully vaccinate 41.3% of the world's population – but high-income countries and regions are getting vaccinated over 20 times faster than low-income countries



Source: <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>

"We need to build a world where each community, regardless of where they live, or who they are, has urgent access to vaccinations: not just for COVID-19, but also for the many other diseases that continue to harm and kill. As the pandemic has shown us, in our interdependent world no one is safe until everyone is safe.

We have a choice: vaccine nationalism or human solidarity."

Dr Tedros Adhanom Ghebreyesus, WHO Director-General

For more information on how to fight for access to COVID-19 vaccines and other life-saving medicines, see <https://makemedicinesaffordable.org>



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