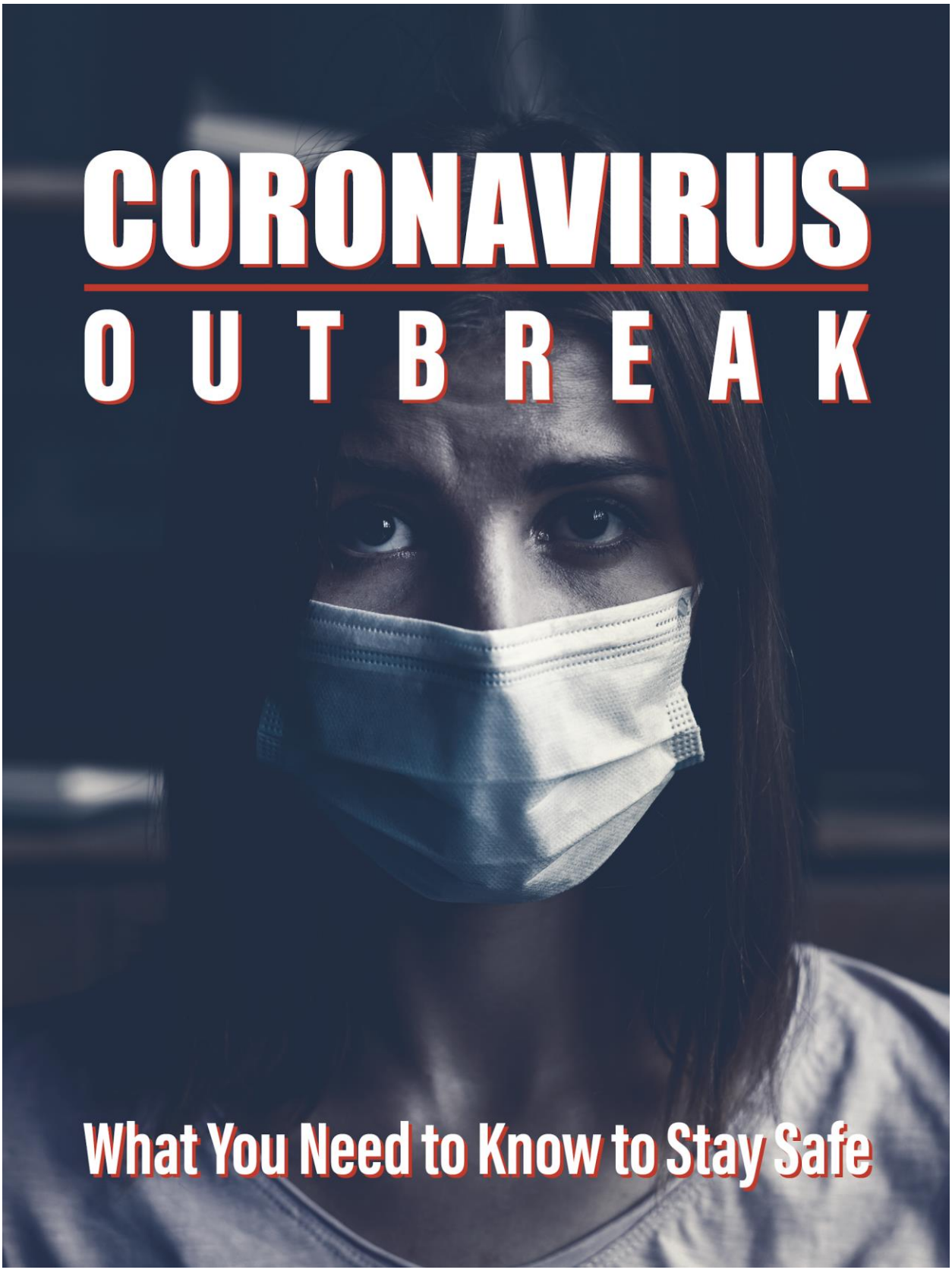
CORONAVIRUS
OUTBREAK
What You Need to Know to Stay Safe

CORONAVIRUS OUTBREAK

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Chapter 1: What is the Coronavirus? Everything You Need to Know About This Frightening Disease

Every time a new disease appears in the news, it causes a mass panic as people understandably get scared that they may be at risk. Suddenly, every sniff and every sniff and every cough is placed under minute scrutiny. The latest outbreak to hit the news is the Coronavirus, and once again, this has caused a huge amount of fear and uncertainty.

And again, this is understandable. The coronavirus is a disease that spreads quickly, now with over 20,000 cases! While it isn't generally a fatal disease, it has already taken . Coronavirus is more widespread than the SARS virus ever became, and it is showing no signs of slowing down. Gradually, it's making its way into other countries.

But is there really cause for such alarm? While the coronavirus is certainly scary, and definitely not to be taken lightly, it is also is important to maintain a sense of perspective. While the stats are of course changing rapidly, at the time of writing there have only been a limited number of cases outside of China. Most of these are still located in Asia, in areas such as Japan, Thailand, and Singapore.

In the United States, there are only 11 confirmed cases of the virus. There have been just over 400 deaths caused by the disease, and only one outside of China. Coronavirus is most comparable to the flu, in terms of its symptoms and the way it spreads. And just like the flu, it is mostly dangerous to those populations already considered at risk: the elderly, very young, or previously unwell.

Statistically, your chances of getting the coronavirus are extremely low – lower than winning the lottery or getting struck by lightning if you are located outside of Asia.

But while this is true, it's also extremely important that we prepare for what *might* become a more widespread problem, that we know how to protect ourselves, and that we understand this event that is of huge global significance.

What is Coronavirus?

The Coronavirus is not a single virus but actually a "family" of viruses that are known to cause a wide number of different illnesses. These coronaviruses (CoV) symptoms can range from the common cold, all the way to more serious flu-like diseases or MERS (Middle East Respiratory Syndrome).

Contrary to popular belief then, the coronavirus is not a "new" virus. In fact, the SARS virus that previously dominated headlines is actually a *form* of coronavirus. The CoV virus that we are currently hearing about in the news, is actually the "novel coronavirus" or (nCoV) which is a strain that has not previously been detected in humans.

The name coronavirus comes from the Latin corona, which stands for corwn, or halo. This describes the appearance of the viral particles (virions) which have a kind of

As with any virus, the difficulty with treating this condition, is that it is known to mutate rapidly, thereby making effective vaccinations or treatments difficulty.

Viruses are different from bacteria. Viruses are smaller and cannot live without a living host. They operate by attaching themselves to cells, and then reprogramming those cells to reproduce. Whereas many bacteria are actually harmless and even beneficial, the vast majority of viruses are harmful to us and are responsible for

conditions such as strep throat, tuberculosis, and UTIs. Of course, viruses are also well-known to cause the common cold, and the flu.

Whereas antibiotics can be used to kill bacteria and end a bacterial infection, viruses are treated with antiviral medications, which are not effective at completely killing the viruses but rather simply preventing the spread by hurting their ability to replicate.

Chapter 2: How it Spreads

As a virus, coronavirus needs a living host in order to spread. This means that the transfer of the virus must usually happen directly between people, usually travelling no more than 6' from one person to another.

It is believed (though not confirmed) that this spread acts similarly to the spread of the common cold/flu. That means that it will travel on droplets of saliva when someone coughs or sneezes. The droplets may then be inhaled by another person into the lungs, where it is thought that the

It is currently not confirmed whether the coronavirus can spread by surfaces. If so, the contact would have had to be recent, but it is generally a wise move to act as though surfaces *may* be contagious.

The coronavirus can also spread via food, which is how it is believed that the virus initially made the leap from animals to humans. Good food hygiene is more important than ever then, and it is likewise important to consider the source of your food.

A Brief History

Here is a brief history of coronavirus and what caused it.

The coronavirus that is currently being discussed is called "A novel coronavirus" (nCoV). This is condition began around December 2019, when there was a cluster of pneumonia cases caused by this previously unknown virus.

It is actually thought that this version of the virus likely began in bats. A new study published on January 29th in the Lancet looked at 10 genome sequences of the coronavirus called 2019-nCoV, taken from nine patients from China. In all 10 of these sequences, 99.8% of the genetic makeup was the same. That tells us that the virus is newly affecting humans. We know this, because as a virus propagates and lives for longer, more changes are introduced to the genome as it mutates and evolves. In other words, the virus has recently *jumped* to humans from another species.

The researchers found that the sequences were almost identical, suggesting a single source that must have been the primary host not long ago.

To find out more, the same team of researchers compared this sequence to a library of other viral sequences. They found that the closest match was against similar CoV that began life in bats. Both of the two near-matches found shared 88% of the genetic makeup with the new version.

So how did this virus manage to make the leap? Because no bats have been sold at the Huanan seafood market – believed to be the source of the virus - it is now thought that there was likely another "steppingstone" animal that transmitted the virus. In other words, the bats infected an animal that was then consumed by humans. One possible culprit is snakes, though it is not currently known whether the virus is able to affect snakes.

However, more recent speculation also questions whether the seafood market is in fact the source of the illness.

The first case of nCoV was reported on December 1st 2019, and that patient had no known link to the seafood market. The data also showed that 13 of the earliest 41 hospitalized patients had no link to that marketplace.

New data suggests that the very first infections may actually have occurred in November. That's because there is an "incubation period" between the infection and the onset of the first symptoms. It's also worth considering that as many of the symptoms are very similar to the flu, some patients may not have reported the condition at all. This is important to consider, when estimating the potential number of cases.

Source and Spread of the Virus

Coronaviruses are a large family of viruses that are common in people and many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people such as with MERS-CoV, SARS-CoV, and now with this new virus (named SARS-CoV-2).

The SARS-CoV-2 virus is a betacoronavirus, like MERS-CoV and SARS-CoV. All three of these viruses have their origins in bats. The sequences from U.S. patients are similar to the one that China initially posted, suggesting a likely single, recent emergence of this virus from an animal reservoir.

Early on, many of the patients at the epicenter of the outbreak in Wuhan, Hubei Province, China had some link to a large seafood and live animal market, suggesting animal-to-person spread. Later, a growing number of patients reportedly did not have exposure to animal markets, indicating person-to-person spread. Person-to-person spread was subsequently reported outside Hubei and in countries outside China, including in the United States. Some international destinations now have apparent community spread with the virus that causes COVID-19, including in some

parts of the United States. Community spread means some people have been infected and it is not known how or where they became exposed. Learn what is known about the spread of this newly emerged coronaviruses.

Illness Severity

Both MERS-CoV and SARS-CoV have been known to cause severe illness in people. The complete clinical picture with regard to COVID-19 is not fully understood. Reported illnesses have ranged from mild to severe, including illness resulting in death. While information so far suggests that most COVID-19 illness is mild, a reportexternal icon out of China suggests serious illness occurs in 16% of cases. Older people and people with certain underlying health conditions like heart disease, lung disease and diabetes, for example, seem to be at greater risk of serious illness.

How the Condition is Being Contained

Governments are taking measures to attempt to control the spread of the virus. Outbreaks of novel virus infections among people are always of public health concern. The risk from these outbreaks depends on characteristics of the virus, including how well it spreads between people, the severity of resulting illness, and the medical or other measures available to control the impact of the virus (for example, vaccine or treatment medications). The fact that this disease has caused illness, including illness resulting in death, and sustained person-to-person spread is concerning. These factors meet two of the criteria of a pandemic. As community spread is detected in more and more countries, the world moves closer toward meeting the third criteria, worldwide spread of the new virus.

Reported community spread of COVID-19 in parts of the United States raises the level of concern about the immediate threat for COVID-19 for those communities. The

potential public health threat posed by COVID-19 is very high, to the United States and globally.

At this time, however, most people in the United States will have little immediate risk of exposure to this virus. This virus is NOT currently spreading widely in the United States. However, it is important to note that current global circumstances suggest it is likely that this virus will cause a pandemic. This is a rapidly evolving situation and the risk assessment will be updated as needed.

Current risk assessment:

- For most of the American public, who are unlikely to be exposed to this virus at this time, the immediate health risk from COVID-19 is considered low.
- People in communities where ongoing community spread with the virus that causes COVID-19 has been reported are at elevated, though still relatively low risk of exposure.
- Healthcare workers caring for patients with COVID-19 are at elevated risk of exposure.
- Close contacts of persons with COVID-19 also are at elevated risk of exposure.
- Travelers returning from affected international locations where community spread is occurring also are at elevated risk of exposure.

Chapter 3: The Coronavirus and Traveling – Where Are You At Risk? Stats Outside of China

Depending on where you are located in the world, you stand a slightly higher chance of contracting coronavirus. While the condition is somewhat rare outside of China and even moreso outside of Asia, travelling anywhere will put you at risk. In this chapter, we'll look at the status of each country and what you need to know when travelling.

Keep in mind that these numbers are changing – and largely growing – all the time. While that's true though, this list can provide a useful illustration of the most affected areas, as well as the nature of the condition and how it spreads.

India

So far there have been three confirmed cases of coronavirus in India. The Ministry of Health & Family Welfare of India has confirmed that the first of these cases was on 30th January 2020, with a second reported on 02 February. The first case involved a student that had travelled from Wuhan. This patient is being monitored at the time of writing and is in a stable condition.

It is thought that there may be more cases of coronavirus in Kerala, India as this is where the individual lived. Other unconfirmed reports come from Delhi, Punjab, Haryana, Bihar, Maharastra, Telangana, and Rajasthan. If you are visiting any of these regions, then you should protect yourself.

Germany

There have been a total of 12 confirmed cases of coronavirus in Germany, making it one of the areas where the condition is currently most prevalent – or at least most widely detected and reported.

The Bavarian State Office for Health and Food Safety reported the first case on 28th January. This case affected a male patient based in Starnberg with no history of visiting China, but who had met with a traveler from the area. Three additional cases were reported on 29th January, who are all being treated in isolation at a Munich hospital.

It is thought that all 12 of the confirmed cases were contracted by the same Chinese tourist.

Sri Lanka

There has been a single case of novel coronavirus in Sri Lanka. That patient was a 40 year old Chinese woman who had been treated positive for the virus. The country has now taken measures to contain the spread of the virus. This includes the suspension of visas for all Chinese travelers. This comes at a time when the country has become a very popular tourist spot for Chinese holiday makers.

Over 200 Chinese students currently studying in Sri Lanka from overseas are also going through a systematic evaluation process.

Cambodia

Cambodia's first case of coronavirus was reported on 27th January 2020. The patient is a 60 year old man who visited Preah Sihanouk province from his home in Wuhan, China. The tourist visited the country with three family members who have tested negative for the condition.

Philippines

There are so far two confirmed cases of the novel coronavirus in the Philippines. The country also reported the first death outside of China caused by the virus. The victim was a 44 year male who died on the 1st February.

The first case reported in the region was that of a 38 year old Chinese woman who tested positive for the disease. She is undergoing treatment at the time of writing, and is a known associate of the second victim.

There have been a total of 27 reported-but-unconfirmed cases of the disease. Japanese experts are helping the country to test these reported cases, and the RNA primer has been provided to help governments test for the condition.

Spain

There has so far only been one confirmed case of coronavirus in Spain. That case was reported on 1st February by the National Centre for Microbiology. The patient was traveling with a group, and while that group is not exhibiting signs of the condition, they have been placed in isolation and observation along with the first patient.

Russia

There have been two reports of novel coronavirus in Russia so far, confirmed on 31st January. These are known to be located in the Zabaikalski and Tyumen regions.

The first suspect was reported on 30th January. The second is known to have visited Moscow. Russia has closed its border with China, and has restricted all rail services to the affected regions of the country.

Sweden

The first case of novel coronavirus reported in Sweden was on 31st January. The patient is a woman who arrived in the country from Wuhan on January 24th. Symptoms only began later. The patient is now in isolation at Ryhov hospital.

UK

There are now two confirmed cases of coronavirus in the UK. These were reported on 31st January. Both patients come from the same family and are currently undergoing specialist care. The family and friends that came into contact with the patients have not been placed into isolation, but they have been asked to report immediately any signs that they may have contracted the condition.

Finland

Finland reported the first case of coronavirus infection on 29th January 2020. The patient is 32 years old and is a Chinese tourist based in Wuhan. The tourist is now being treated at the Lapland Central Hospital. It is believed that 15 more people have been "exposed" to the infection.

Thailand

The first case of coronavirus in Thailand was confirmed on 13th January 2020.This was a woman travelling to Wuhan along with five other members in a tour group of 16 people. There have been 19 confirmed cases, though five of these have been treated successfully.

Japan

Japan was the second country to report any cases of coronavirus infection. The carrier was a man travelling to Wuhan, and the condition has since spread to 20 people in total. Over 200 Japanese citizens have been evacuated from Wuhan, three of which were found to be carrying the virus.

Republic of Korea

There have been 15 total confirmed cases of coronavirus in Korea and 28 total potential cases. The first case was that of a 35 year old woman from Wuhan, who visited the country on 20th January 2020.

Taiwan

Taiwan reported the first case of coronavirus on 21st January. Since then, 10 more cases have been reported by officials. This list includes two Chinese women that had been working in Wuhan. The most recent case has no known source of contagion, suggesting more potential cases.

Singapore

There have been 18 confirmed cases in Singapore. The first was reported on 23rd January 2020, affecting a 53 year old female resident of Wuhan, China. The more recent cases likewise affect Chinese residents, arriving from Singapore and Wuhan.

Vietnam

There have been eight confirmed cases of Coronavirus from Vietnam. These were reported on 23rd January 2020. The first case was a Chinese man who had travelled to

Wuhan, and who passed the infection on to his son. The father is still on oxygen support owing to a lung injury, while the son is believed to have made a full recovery.

France

There have been six confirmed cases of coronavirus in France, which was the first European country to report the condition. The first three patients contracted their virus during a stay in China. Two patients are currently being treated in Paris, while the third is in Bordeaux.

Nepal

The first infection confirmed in Nepal was on 25th January. Since then, two more suspected cases have been reported.

Malaysia

Malaysia has reported 8 cases of coronavirus. The first case was announced on 25th January. This was a 40-year-old man from Wuhan visiting the Johor area with 17 other Chinese tourists. Three new cases were then reported on 29th January, including a close contact case suggesting that the condition is spreading.

Cambodia

Cambodia's first case was reported on 27th January 2020. This case affected a man in his 60s, who had travelled to Preah Sihanouk province with three family members. The family members have tested negative.

All flights between the country and Wuhan City have been cancelled.

Australia

Australia reports 12 confirmed cases of infection. These include four in Sydney and one in Melbourne. The first case was confirmed on 25th January, affecting a man travelling from Guangzhou to Melbourne.

Two new cases of the infection were reported on January 29th, one in Queensland and one in Victoria.

Canada

There have been four confirmed cases in Canada. The first case was reported on 25th January 2020, affecting a man who had visited Wuhan. The second case was that first patient's wife, who was confirmed to also have the infection on the 27th. A third case was reported on the 28th, once again having previously visited Wuhan.

US

For those not planning on travelling outside of the US, there have been a total of 11 reported cases of Coronavirus infection.

The first case of the infection was found in Washington on 21st January 2020. This was a person who had travelled to Wuhan and since returned to the US. A second case occurred in Illinois, once again due to the patient visiting Wuhan.

The total list of states with confirmed cases of novel coronavirus currently stands at:

- Arizona
- California
- Illinois
- Washington

While there have only been 11 confirmed cases, there have nevertheless been a total of 165 suspected cases, reported in the country. 68 of these have since been disproven, while results are yet to be announced for the remaining 92.

All cases of the virus are imported cases, with no person-to-person transmission yet demonstrated.

The CDC (US Centers for Disease Control and Prevention) has gone on record saying that the immediate threat to the US population is currently very low. The CDC has also however requested that citizens avoid travelling to affected regions, and avoid spending time with those known to be sick with the condition (or suspected cases of coronavirus).

- CDC established a COVID-19 Incident Management System on January 7, 2020. On January 21, CDC activated its Emergency Operations Center to better provide ongoing support to the COVID-19 response.
- The U.S. government has taken unprecedented steps with respect to travel in response to the growing public health threat posed by this new coronavirus:
- Effective February 2, at 5pm, the U.S. government suspended entry of foreign nationals who have been in China within the past 14 days.
- U.S. citizens, residents, and their immediate family members who have been in Hubei province and other parts of mainland China are allowed to enter the United States, but they are subject to health monitoring and possible quarantine for up to 14 days.

On February 29, the U.S. government announced it was suspending entry of foreign nationals who have been in Iran within the past 14 days.

CDC has issued the following travel guidance related to COVID-19:

- China — Level 3, Avoid Nonessential Travel — updated February 22;
- Hong Kong — Level 1, Practice Usual Precautions — issued February 19;
- Iran — Level 3, Avoid Nonessential Travel — updated February 28;
- Italy — Level 3, Avoid Nonessential Travel — updated February 28;
- Japan — Level 2, Practice Enhanced Precautions — updated February 22;
- South Korea — Level 3, Avoid Nonessential Travel — updated February 24.
- CDC also recommends that all travelers reconsider cruise ship voyages into or within Asia at this time.

CDC is issuing clinical guidance, including:

- On January 30, CDC published guidance for healthcare professionals on the clinical care of COVID-19 patients.
- On February 3, CDC posted guidance for assessing the potential risk for various exposures to COVID-19 and managing those people appropriately.
- On February 27, CDC updated its criteria to guide evaluation of persons under investigation for COVID-19.
- On February 28, CDC issued a Health Alert Network (HAN): Update and Interim Guidance on Outbreak of COVID-19.
- CDC has deployed multidisciplinary teams to support state health departments case identification, contact tracing, clinical management, and communications.
- CDC has worked with the Department of State, supporting the safe return of Americans who have been stranded as a result of the ongoing outbreaks of COVID-19 and related travel restrictions. CDC has worked to assess the health of passengers as they return to the United States and provided continued daily monitoring of people who are quarantined.

- An important part of CDC's role during a public health emergency is to develop a test for the pathogen and equip state and local public health labs with testing capacity.
- After distribution of a CDC rRT-PCR test to diagnose COVID-19 to state and local public health labs started, performance issues were identified related to a problem in the manufacturing of one of the reagents. Laboratories were not able to verify the test performance.
- CDC worked on two potential resolutions to this problem.
- CDC developed a new protocol that uses two of the three components of the original CDC test kit to detect the virus that causes COVID-19 after establishing that the third component, which was the problem with the original test, can be excluded from testing without affecting accuracy. CDC is working with FDA to amend the existing Emergency Use Authorization (EUA) for the test, but in the meantime, FDA granted discretionary authority for the use of the original test kits.
- Public health laboratories can use the original CDC test kit to test for the virus that causes COVID-19 using the new protocol.
- Further, newly manufactured kits have been provided to the International Reagent Resource external icon for distribution.
- Combined with other reagents that CDC has procured, there are enough testing kits to test more than 75,000 people.
- In addition, CDC has two laboratories conducting testing for the virus that causes COVID-19. CDC can test approximately 350 specimens per day.
- Commercial labs are working to develop their own tests that hopefully will be available soon. This will allow a greater number of tests to happen close to where potential cases are.
- CDC has grown the COVID-19 virus in cell culture, which is necessary for further studies, including for additional genetic characterization. The cell-grown virus was sent to NIH's BEI Resources Repository external icon external icon for use by the broad scientific community.

We will discuss the safety of visiting China in the next chapter.

Chapter 4: Preventative Measures – Face Masks, Hygiene, and Precautions

If you are travelling to any of these affected regions, then it is important to do whatever you can to protect yourself.

The best preventative measures and precautions fall into a few categories. These are:

- Hygiene
- Useful tools
- General health

Hygiene Tips

The first and most important measure to take in order to reduce the likelihood of contracting novel coronavirus, is to simply practice the best hygiene possible. That means you should always:

- Wash your hands before touching your face
- Wash your food thoroughly before eating
- Avoid touching other surfaces

The other tip is to avoid spaces where the illness is likely to travel rapidly. A good example of this would be a crowded train or elevator. Here, you will be in close proximity to many other people that could be carrying the disease, in a contained environment. This makes it potentially very easy for virus to spread via air-born droplets.

Where possible, avoid densely crowded areas that are sealed closed!

Wearing gloves may also help to prevent the spread of illness to some degree, as it prevents the virus from landing on your skin and then being transferred to the face that way.

Be careful about the food you eat and for preference choose to buy sealed food items from larger stores.

Useful Tools

Another consideration is the role of a face mask. This is a breathing mask that you wear over the mouth and the nose in order to filter air and thereby prevent the spread of disease.

These masks actually serve two purposes: not only do they prevent the wearer from contracting the virus, but they also help to prevent them from spreading it. This works because the mask contains the droplets that they may propel when sneezing or coughing.

So do they actually work? The good news is that they do appear to be effective based on studies. In one study, it was found that those who used the masks correctly were actually 80% less likely to contract flu. Seeing as the coronavirus appears to travel in the same manner as the flu, this makes it likely that the mask would prove similarly beneficial.

This of course works by preventing the droplets of moisture from reaching your mouth or nose where they could cause an infection. Because they are not air-tight (for

obvious reasons), this will not have a 100% success rate, but should be effective enough to make a significant improvement.

Likewise, wearing shades could even be useful, seeing as contact with the eyes can also lead to the condition spreading!

Vitamins, Minerals, and How to Improve Your Immunity

While there is no vaccination against coronavirus, generally improving your health and immunity is a way to protect against *all* disease.

Have you ever had the flu and noticed that your wife and children usually get it too? But every now and then, one of you manages to coast through completely fine! This is because that person has a stronger immune system at that time (or they have encountered that specific mutation of the virus before).

This is what we ideally want to try and emulate when travelling and when being exposed to the virus, and so with that in mind, here are some ways to keep yourself safe and healthy.

Nutrition

The first and most important thing you can do, is to make sure you are eating a balanced and nutritious diet. Avoid "empty calories" that don't provide any vitamins and minerals, and instead try to get as much colorful fruit and vegetables on your plate as possible.

The most important nutrients to seek out in particular, include vitamin C (a powerful antioxidant that is known to support immunity), vitamin A, vitamin E, and selenium. Selenium is useful for preventing the over-activity of the immune system, which can lead to inflammation and other similar issues. Antioxidants are substances that combat the action of free radicals in the body – and these can otherwise damage cells and tax the immunity.

It's also important to eat plenty of fiber, fermented foods, and yogurts. These contain live cultures of healthy bacteria that help to strengthen the body's immunity. That's because friendly bacteria in the stomach and gut can actually help to destroy harmful bacteria that otherwise wreaks havoc on the immune system. Getting a wide variety of different natural foods is the very best thing you can do for a healthy microbiome.

Lifestyle Factors

Another thing to consider is the importance of spending time outside. Sunlight encourages the body to produce vitamin D, which has recently been shown by studies to actually be *more* important than vitamin C for strengthening immunity.

Fresh air and cold exposure is also beneficial. Not only does fresh air help to clear out the lungs, but being cold can actually help to "train" the immune system, so that it is capable of working harder and doing its job better!

Other things can also affect your immunity. Did you know for example, that flossing your teeth can make you less likely to contract a wide range of illnesses? This is because our mouths are constantly bombarded by bacteria, which leaves us susceptible to other problems. When the mouth is clean, that problem disappears.

But the most important lifestyle factors of all are to a) avoid stress and b) get lots of sleep. When we are stressed or sleep deprived, this causes the body to suppress immune activity, leaving us open to attack. When we are rested both mentally and physically, we go into those battles with a full tank of fuel behind us.

Is it Safe to Visit China?

Of course, one of the best ways to avoid contracting coronavirus, is to avoid visiting China altogether. But given the relatively low incidence of the disease, you may be wondering whether that is a precaution too far. Is it unsafe to visit China? Should you cancel any planned trips?

The US has escalated precautions to prevent the spread of the virus, along with the travel warning. The US State Department now suggests that the advice is Level 4: Do not travel.

Likewise, the US Centers for Disease Control and Prevention has the same advice, urging all tourists to avoid "nonessential" travel to China.

The UK and Canada have likewise issued travel warnings. The World Health Organization has declared the novel coronavirus to be a public health emergency of international concern.

Many foreign governments have evacuated citizens from Wuhan.

How you choose to proceed in light of this information is up to you. However, there are a few factors that you should keep in mind:

- Even if you are not concerned about contracting coronavirus personally, this should not be seen as the main reason to avoid travel. In fact, the main reason not to travel is a conscientious one: so as not to propagate the disease. This is considered an emergency of global concern, and as such, it is highly important that we do everything we can to prevent the disease from spreading. If you visit the country, contract the disease, and bring it back home, then you will have contributed to a rapidly declining situation.
- China is a very big country and the majority of cases are located in Wuhan and the Hubei Province. Many governments are not evacuating citizens from these regions. However, there have only been a handful of cases in areas like Hong Kong.
- The condition is no more contagious than the common flu. It is believed that flu affects 5% of the US population every single year. However, when travelling to an area in the US, the likelihood of contracting flu is still very low. There are significantly fewer cases of coronavirus, making it actually statistically extremely improbable that you would be infected.
- Coronavirus is not fatal in the vast majority of cases. Like flus and pneumonia, it can cause difficulty breathing, which may require assistance from an oxygen mask or similar. Those that are at risk are generally those that already suffer with conditions that make them high-risk, or those that are very old/very young.
    - This is another thing to keep in mind when considering travelling. How serious would a case of coronavirus virus be for you personally? If you have a history of breathing difficulties and chest infections, then you should keep this in mind when deciding how to act.
- With that said, this is still a risk and if you can avoid to take it, then you should out of thoughtfulness to others.

Another consideration is that while Wuhan is the most affected area in China, so too are obvious transport links. In particular, think about airports with direct connections

to Wuhan, or parts of China where trains visit regularly. These are also likely to be high-risk areas.

Chapter 5: Symptoms of Coronavirus – Recognizing it in Yourself and Others

The symptoms of coronavirus are generally very similar to the symptoms of other viruses and chest infections. This can make it particularly difficult to identify cases, and this is one of the reasons that the problem has been able to spread so quickly.

Symptoms of coronavirus include:

- Coughing – A persistent and potentially painful cough that can also keep you awake at night.
- A sore throat – This goes hand-in-hand with the cough, but is also due to inflammation of the airways.
- Tiredness and lethargy – Like most viral infections, the flu will leave you feeling tired and exhausted from small amounts of activity. This is owing to the effort your body is putting in when fighting the infection.
- Temperature – A temperature is your body's way of attempting to drive out invading viruses. This will cause the body to become very hot, as it tries to make the environment inhospitable. That means that the temperature in itself is not actually a negative thing, but rather an important strategy used by the body – so you should not try to fight the body by bringing the temperature back down. That said, you should monitor the temperature and make sure it doesn't get too high, which can be dangerous. Likewise, you should keep drinking lots of water, as dehydration is one of the most serious complications of a fever.
- Difficulty breathing – This is the most severe symptom of coronavirus. Listen for a "rattling sound" in the chest. Likewise, look for signs of effortful, rapid

breathing. If the patient also has signs of bluing around the lips in particular, then you should seek medical attention immediately.

Is it Coronavirus?

If you notice any signs of coronavirus, then you should seriously consider whether this is the possible cause. With the symptoms being so similar to other types of cold and virus, it can be difficult to distinguish between them. The main evidence then is situational/contextual: have you been to any of the most affected areas in China? Have you met anyone from that region, or who has travelled to the region?

Also making life more difficult is the fact that symptoms can take several days to emerge – anywhere from 2-10 days. You need to think back at least this far then when considering whether Coronavirus is a likely candidate for your problems.

Person-to-person Spread

The virus is thought to spread mainly from person-to-person.

- Between people who are in close contact with one another (within about 6 feet).
- Through respiratory droplets produced when an infected person coughs or sneezes.

These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

Can someone spread the virus without being sick?

- People are thought to be most contagious when they are most symptomatic (the sickest).
- Some spread might be possible before people show symptoms; there have been reports of this occurring with this new coronavirus, but this is not thought to be the main way the virus spreads.

Spread from contact with infected surfaces or objects

It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, but this is not thought to be the main way the virus spreads.

How easily the virus spreads

How easily a virus spreads from person-to-person can vary. Some viruses are highly contagious (spread easily), like measles, while other viruses do not spread as easily. Another factor is whether the spread is sustained, spreading continually without stopping.

The virus that causes COVID-19 seems to be spreading easily and sustainably in the community ("community spread") in some affected geographic areas.

Community spread means people have been infected with the virus in an area, including some who are not sure how or where they became infected.

Situation in the U.S.

- Imported cases of COVID-19 in travelers have been detected in the U.S.
- Person-to-person spread of COVID-19 was first reported among close contacts of returned travelers from Wuhan.
- During the week of February 23, CDC reported community spread of the virus that causes COVID-19 in California (in two places), Oregon and Washington. Community spread in Washington resulted in the first death in the United States from COVID-19, as well as the first reported case of COVID-19 in a health care worker, and the first potential outbreak in a long-term care facility.

Chapter 6: Treatment and Outcomes

If you notice any of the signs of coronavirus, then it is crucial that you seek medical attention immediately. Again, this is not necessarily for your own sake as much as to try and control the spread of the disease and prevent it spreading to anyone else. Many governments and health officials advise and request that patients attempt to "self-quarantine." This essentially means that they should avoid going out into public spaces, and should stay home as much as possible.

This also includes not visiting the doctor or hospital waiting rooms, where you can of course risk spreading the disease to others. For that reason, it's instead recommended that you call the doctor to visit you.

If you are taken into hospital, you will be placed under observation, and your breathing will be assisted should you need it. This can involve the use of a nebulizer, as well as oxygen mask. These will help you to take more oxygen into the lungs with each breath, as well as to reduce swelling and other effects that are making it more difficult to breathe.

Your temperature will also be monitored.

Things you can do yourself to help ease the symptoms and provide self-care include:

- Getting lots of rest and not pushing yourself mentally or physically
- Drinking lots of water – if you have a fever, then one of the most serious concerns is that this can lead to dehydration and associated problems
- Manage the build up of phlegm and mucus by using steam inhalation. To do this, fill a boil full of hot water and then hold your head over it with a blanket. Make sure that the steam is not hot enough to burn your nostrils, but that it is

warm enough to break down the mucus. You can also try taking long hot showers.

You may also need to manage some secondary symptoms that can be caused by the primary symptoms. For example, you may struggle with poor sleep, or you might have headaches due to the build up of pressure in the sinuses. To deal with these, you can use analgesics.

There is no known cure for coronavirus, and as a viral infection it cannot be treated with antibiotics. However, with that said, the condition is also self-limiting, meaning that it will disappear over time. This can take a few days to a few months, depending on the severity of the infection, the appearance of complications, the health of the patient, and the treatment given.

Prevention

There is currently no vaccine to prevent coronavirus disease 2019 (COVID-19). The best way to prevent illness is to avoid being exposed to this virus. However, as a reminder, CDC always recommends everyday preventive actions to help prevent the spread of respiratory diseases, including:

- Avoid close contact with people who are sick.
- Avoid touching your eyes, nose, and mouth.
- Stay home when you are sick.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe.
- Follow CDC's recommendations for using a facemask.
- CDC does not recommend that people who are well wear a facemask to protect themselves from respiratory diseases, including COVID-19.
- Facemasks should be used by people who show symptoms of COVID-19 to help prevent the spread of the disease to others. The use of facemasks is also crucial

for health workers and people who are taking care of someone in close settings (at home or in a health care facility).

- Wash your hands often with soap and water for at least 20 seconds, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing.
- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol. Always wash hands with soap and water if hands are visibly dirty.
- For information about handwashing, see CDC's Handwashing website
- For information specific to healthcare, see CDC's Hand Hygiene in Healthcare Settings

Conclusion

Hopefully, this guide has served as a useful introduction and comprehensive overview of the coronavirus. You now know where you are likely to encounter it, just how at risk you are, and how to spot the symptoms. You understand the nature and the history of the condition, and you know how to keep yourself as safe as possible.

The most important take-home from all this perhaps is that the coronavirus remains a low-risk for the majority of people in the US and Europe. Even when travelling, it is highly unlikely at this stage that we would contract it. Nevertheless, it is still highly important that we are vigilant, especially as the prominence of the disease is spreading every single day. Should the illness become widespread in your region, you are now well equipped to deal with it, and to understand the problem.

Make sure to take every reasonable precaution, but don't lose your mind worrying about the disease – there are many more pressing concerns that most of us should be focusing on.