**COVID-19 Outbreak Transmission Verification**

**Objective**: The objective of this study is to find and validate the sequences and Stories behind how the Novel COVID-19 Transmission Outbreak during the time period December 2019 to March 2020.

**Abstract:**

In this research we will search to find the two major facts, sequence of transmission and stories behind the transmission, that are associated with the transmission of the novel coronavirus. We collect epidemiological data and integrate the information found from most common and trusted sources such as [cdc.gov](http://cdc.gov/), [gisaid.org](http://gisaid.org/), [cnn.com](http://cnn.com/), [thenewyorktimes.com](http://thenewyorktimes.com/), etc. and came up with a conclusion that the novel coronavirus was initiated at …. during … of 2019 and spreaded out to Asia, them from Asia to Europe to America, from America to … etc.

**Sources**: there should have some journal papers, websites, and social media.

For the corona viruses there are some sequences, we need to find that sequences. These are stated in [gisaid.org](http://gisaid.org/) or somewhere. We consider these sequences as samples. Each sample has certain ids. Each id has time, location (city, state/country) and some other attributes.

We need to know more about each sample and try to assemble and connect that follow a tree - who infected whom at which place, etc. For example, there was a guy who went to China, got infected there, then went to another conference in Italy and did infected some people there. We want to know about all sample and all information of that kind.

We want to build a network that tells us how the infection networks were spread out. In the network there are internal sources and there are some external sources. For instances, in Washington there was a conference and many people got infected from there. We will consider those infections as internal sources. On the other hand, in California there were many people got infected from a cruse ship,or other places we will consider that as external source and will consider in building our network graph tree. Thus, we will consider only the infections that occurred with contact of people from outside that location that we call external sources and will consider as the nodes of the network tree graph.

We want to know the facts from the web. Anything associated with those factors, as well as related epidemically information.

When we started this research there were only about hundred cases. But afterward every day they were increasing by thirty, forty, fifty, sixty new cases. We plan to develop and use a web crawler to collect the information of the transmission of the coronavirus cases and sources from various web sources such as the [cdc.gov](http://cdc.gov/) website, Twitter, Facebook, etc.  We mainly wanted to collect information about infected sequenced people and cluster of coronavirus infection stories, with cross validation.

There are two types of Inter?... at 7:01-7:10

These stories confirm our own conclusions from the networks. Then the question is what kind of information we need to know anything about the sequenced people. For instance, we a repository with about 400 collected nodes of infected people. We need to find some information from each of these people???? 8:05.

There may be another type of information. For instance, the epidemiologists say about the distribution of the virus among the infected clusters - who infected who, with citations.

We need to create a Search Engine or Web Crawler to make a search to collect these information, periodically, time to time to collect two types of information- sequences and stories.

**We need some weekly transmission reports, presented by drawing, snapshots, animation, etc.**

Then me may use an optimization algorithm such as the Salesman Travel Algorithm ……

**Introduction:**

In early of December 2019, a cluster of patients that presented with an unidentified form of viral pneumonia, caused by a newly identified β-coronavirus, with shared history of visiting the Huanan seafood market in Wuhan, China. The coronavirus was initially named as the 2019-novel coronavirus (2019-nCoV) on 12 January 2020 by World Health Organization (WHO). Later **on February 11, 2020 the WHO renamed the novel coronavirus as COVID-19.** As of April 30, 2020, COVID-19 has affected more than 3.5 million patients with about 200 thousand deaths in 200 countries/regions. Thus, it has become a major global health concern. The global impact of this new epidemic is yet uncertain; however, there is no doubt that has collapsed the entire world. This study briefly depicts the transmission of the COVID-19 presented through some brief description and a transmission graph.

Since mid-December of 2019, coronavirus disease 2019 (COVID-19) has been spreading from Wuhan, China. Soon it was rapidly spread across China and many other countries [[2]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0002), [[3]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0003), [[4]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0004), [[5]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0005), [[6]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0006), [[7]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0007), [[8]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0008). On 11 February 2020, the World Health Organization (WHO) announced a new name for the epidemic disease caused by 2019-nCoV: coronavirus disease (COVID-19). Regarding the virus itself, the International Committee on Taxonomy of Viruses has renamed the previously provisionally named 2019-nCoV as severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) [[3]](https://www.sciencedirect.com/science/article/pii/S0924857920300674#bib0003).

Although early studies reported a link between a single local fish and wild animal market and most cases of infection, indicating possible animal-to-human transmission, studies have increasingly demonstrated human-to-human transmission of SARS-CoV-2 through droplets or direct contact [[2](https://www.sciencedirect.com/science/article/pii/S0924857920300674#bib0002),[[8]](https://www.sciencedirect.com/science/article/pii/S0924857920300674#bib0008), [[9]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0009), [[10]](https://www.sciencedirect.com/science/article/pii/S0924857920300674" \l "bib0010).

**Transmission Stories of COVID-19:**

Since December 2019, an increasing number of cases of novel coronavirus have been identified in Wuhan, a large city of 11 million people in central China.[1-3](https://www.nejm.org/doi/10.1056/NEJMoa2001316) [1078].

Soon the coronavirus was transmitted from Wuhan, China to cities outside mainland China via air travel between 25 December 2019 and 19 January 2020 [198]. By January 13, 2002 five other relatives loved in Anyang, China were infected by one of their relatives of lived and got infected in Wuhan [191].

**On January 11, 2020 China reports 1st novel coronavirus death. January 23, 2020 China imposes strict lockdown in Wuhan.** Japan, South Korea and Thailand also report their first cases on January 20, 2020. **Jan. 30, 2020: WHO declares global health emergency.**

On Jan. 30, the Centers for Disease Control and Prevention (CDC) had confirmed the**first case of person to person transmission in the U.S.:** the husband of the Chicago, Illinois case who had returned from Wuhan, China on Jan. 13 and who tested positive for the virus on Jan. 24). **Feb. 26, 2020: 1st case of suspected local transmission in United States.** The first COVID-19 death is reported in Washington state, after a man with no travel history to China dies on Feb. 28 at Evergreen Health Medical Center in Kirkland, WA. **March 13, 2020: Trump declares national emergency. March 17, 2020: Coronavirus now present in all 50 states**

The CDC confirms the first case of COVID-19 in a patient in California [with no travel history to an outbreak area](https://abcnews.go.com/International/us-military-coronavirus-patient-cases-surge-italy-south/story?id=69225004), nor contact with anyone diagnosed with the virus. It's suspected to be the first instance of local transmission in the United States. Oregon, Washington and New York soon report their own cases of possible community transmission.

Based on virus genome sequencing results and evolutionary analysis, it was inferred that the coronavirus spreads mostly through direct contact with infected people and with infected large respiratory droplets, which is about 0.0002 inches in diameter. The hefty droplets fly from a person's mouth when they cough or sneeze, falling to the ground by the time they’ve traveled only a few feet. [x222]

The unknown acute respiratory tract infection of coronavirus broke out first in Wuhan, China, since 12 December 2019. On December 29, 2019, the first 4 cases were reported. These initial coronavirus infected people were linked to the Huanan Seafood Wholesale Market in Southern China.

They were identified by local hospitals using a surveillance mechanism for “pneumonia of unknown etiology” [1078]. Several studies suggested that bat might be suspected as natural host of the coronavirus origin that might be transmitted from bats via unknown intermediate hosts to infect humans [200, [9](https://link.springer.com/article/10.1186/s40779-020-00240-0#ref-CR9), [10](https://link.springer.com/article/10.1186/s40779-020-00240-0#ref-CR10)].

On January 19, 2020, a 35-year-old man presented to an urgent care clinic in Snohomish County, Washington, with a 4-day history of cough and subjective fever. He disclosed that he had returned to Kirkland, WA, United State on January 15 after traveling to visit family in Wuhan, China. The patient stated that he had seen a health alert from the U.S. Centers for Disease Control and Prevention (CDC) about the novel coronavirus outbreak in China and, because of his symptoms and recent travel, decided to see a health care provider. Further, the first case of human-to-human transmission of COVID-19 was reported in the US on January 21, 2020

On 20 January 2020, National IHR Focal Point (NFP) for Republic of Korea reported the first case of novel coronavirus in the Republic of Korea. The case is a 35-year-old female, Chinese national, residing in Wuhan, Hubei province in China.

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) first manifested as a cluster of mysterious, suspected [pneumonia](https://en.wikipedia.org/wiki/Pneumonia) cases in [Wuhan](https://en.wikipedia.org/wiki/Wuhan), the capital of [Hubei](https://en.wikipedia.org/wiki/Hubei) province, China. A Wuhan hospital notified the local center for disease control and prevention (CDC) and health commissions on 27 December 2019.

On 31 December Wuhan CDC admitted that there was a cluster of unknown pneumonia cases related to [Huanan Seafood Market](https://en.wikipedia.org/wiki/Huanan_Seafood_Wholesale_Market), in [Wuhan](https://en.wikipedia.org/wiki/Wuhan), the capital of [Hubei](https://en.wikipedia.org/wiki/Hubei) province, China.

The potential disease outbreak soon drew nationwide attention including that of the [National Health Commission](https://en.wikipedia.org/wiki/National_Health_Commission) (NHC) in Beijing who sent experts to Wuhan on the following day. On 8 January, a new coronavirus was identified as the cause of the pneumonia.[[5]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-6) The sequence of the virus was soon published on an [open-access](https://en.wikipedia.org/wiki/Open_access) database.[[6]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-7)

Delayed and controversial responses by the Wuhan and Hubei authorities failed to contain the outbreak in the early stage which led to criticism from the public and the media.[[7]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-:21-8) By 29 January, the virus spread to all [provinces of mainland China](https://en.wikipedia.org/wiki/Provinces_of_China).[[8]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-:22-9)[[9]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-AllRegions-10)[[10]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-Declared-11) All provinces of mainland China initiated the highest response level to public health emergency.[[11]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-:9-12) WHO declared the outbreak a "[Public Health Emergency of International Concern](https://en.wikipedia.org/wiki/Public_Health_Emergency_of_International_Concern)" on 31 January[[10]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-Declared-11) for fear that the virus spread beyond China to where there is no robust healthcare system despite its confidence that China was "doing all that it can".[[12]](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_mainland_China#cite_note-:33-13)

An outbreak of [coronavirus disease 2019](https://en.wikipedia.org/wiki/Coronavirus_disease_2019) (COVID-19), part of the [2019–2020 global pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic), has been ongoing in [Thailand](https://en.wikipedia.org/wiki/Thailand) since 13 January 2020, when the country made the first confirmation of a case outside China.[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Thailand#cite_note-scmp-13jan-2) Surveillance among incoming travellers revealed a small number of cases throughout January, almost all of whom were visitors or residents returning from China. The first reported local transmission was confirmed on 31 January.[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Thailand#cite_note-thairath-31jan-3)

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed to have spread to Japan on 16 January 2020 from China in a person who travelled to Wuhan, China.

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) reached [France](https://en.wikipedia.org/wiki/France) on 24 January 2020, when the first [COVID-19](https://en.wikipedia.org/wiki/Coronavirus_disease_2019) case in Europe and France was confirmed in Bordeaux, in Southwestern France. The first five confirmed cases were all individuals who had recently arrived or returned from China. A Chinese tourist who was admitted to hospital in Paris on 28 January died on 14 February, making it the first Covid-19 death in France.

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed to have reached [Australia](https://en.wikipedia.org/wiki/Australia) on 25 January 2020 in [Victoria](https://en.wikipedia.org/wiki/Victoria_(Australia)), when a man returning from [Wuhan](https://en.wikipedia.org/wiki/Wuhan), China, was tested positive for [SARS-CoV-2](https://en.wikipedia.org/wiki/Severe_acute_respiratory_syndrome_coronavirus_2).

The first confirmed to have spread to Italy on 31 January 2020, when two Chinese tourists in Rome tested positive for the virus.[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Italy#cite_note-Corriere_20Jan-2) One week later an Italian man repatriated back to Italy from the city of [Wuhan](https://en.wikipedia.org/wiki/Wuhan), China, was hospitalised and confirmed as the third case in Italy.[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Italy#cite_note-3) A cluster of cases was later detected, starting with 16 confirmed cases in [Lombardy](https://en.wikipedia.org/wiki/Lombardy) on 21 February,[[4]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Italy#cite_note-ThomReut_IT_16cluster_21Feb-4) and 60 additional cases and the first deaths on 22 February.[[5]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Italy#cite_note-CorrieredSera_76_recent_cases-5) By the beginning of March, the virus had spread to all regions of Italy.[[6]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Italy#cite_note-6)

The first [COVID-19](https://en.wikipedia.org/wiki/COVID-19) case was confirmed and contained near Munich, Bavaria, Germany on January 27, 2020.[[5]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Germany#cite_note-spiegel.de-6) The majority of the cases in January and early February originated from the headquarters of a car parts manufacturer there. On 25 and 26 February, multiple cases related to the [Italian outbreak](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Italy) were detected in [Baden-Württemberg](https://en.wikipedia.org/wiki/Baden-W%C3%BCrttemberg). A large cluster linked to a [Carnival](https://en.wikipedia.org/wiki/Carnival) event was formed in [Heinsberg](https://en.wikipedia.org/wiki/Heinsberg_(district)" \o "Heinsberg (district)), [North Rhine-Westphalia](https://en.wikipedia.org/wiki/North_Rhine-Westphalia), with the first death reported on 9 March 2020.[[6]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Germany#cite_note-KreisHeinsberg-7)[[7]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Germany#cite_note-auto1-8) New clusters were introduced in other regions via Heinsberg as well as via people coming from Italy, Iran and China,[[8]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Germany#cite_note-9) from where non-Germans could arrive by plane until [17-18 March](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Germany#15%E2%80%9321_March).

The [2019–2020 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%932020_coronavirus_pandemic) was confirmed to have spread to the Netherlands on 27 February 2020, when its first COVID-19 case was confirmed in [Tilburg](https://en.wikipedia.org/wiki/Tilburg). It involved a 56-year-old Dutchman who had arrived in the Netherlands from Italy. The first death occurred on 6 March, when an 86-year-old patient died in Rotterdam, Netherlands .[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_the_Netherlands#cite_note-rivm:d1-4)

The first case had been confirmed in Sihanoukville, Cambodia on a 60-year-old Chinese man who arrived in 23 January from [Wuhan](https://en.wikipedia.org/wiki/Wuhan), China with his family.

The disease first arrived in [Canada](https://en.wikipedia.org/wiki/Canada) on January 25, 2020, after a man returned to [Toronto](https://en.wikipedia.org/wiki/Toronto) from travel in China, including [Wuhan](https://en.wikipedia.org/wiki/Wuhan).

It was first detected in Malaysia on 25 January on travelers from China arriving via Singapore.

following the [outbreak of COVID-19 in Hubei, China](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_in_Hubei).

The first case of COVID-19 in [Finland](https://en.wikipedia.org/wiki/Finland) during the [2019–20 worldwide pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed on 29 January 2020, when a Chinese tourist visiting Ivalo, Finland from [Wuhan](https://en.wikipedia.org/wiki/Wuhan) tested positive for the virus.[[1]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Finland#cite_note-yle-28feb-fin-1)

The first confirmed case of the [pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) of [coronavirus disease 2019](https://en.wikipedia.org/wiki/Coronavirus_disease_2019) (COVID-19) in the [United Arab Emirates](https://en.wikipedia.org/wiki/United_Arab_Emirates) was announced on 29 January 2020. It was the first country in the [Middle East](https://en.wikipedia.org/wiki/Middle_East) to report a confirmed case.[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_the_United_Arab_Emirates#cite_note-3) The first patient, a 73-year-old Chinese woman, was released on 9 February after recovering.

On 30 January, India confirmed its first case in a student who had returned from [Wuhan University](https://en.wikipedia.org/wiki/Wuhan_University) to [Kerala](https://en.wikipedia.org/wiki/Kerala). In early February, two other cases were confirmed in Kerala in people who had also been in China. All three of them successfully recovered.

The first two cases of the [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) were confirmed in St. Petersburg,

[Russia](https://en.wikipedia.org/wiki/Russia) on 31 January 2020, found on 31 January in two Chinese tourists.

The [first](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) case was confirmed to have spread to Spain on 31 January 2020, when a German tourist tested positive for [SARS-CoV-2](https://en.wikipedia.org/wiki/Severe_acute_respiratory_syndrome_coronavirus_2) in La Gomera, Spain.

The [first](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) case was confirmed to have reached Stockholm, Sweden on 31 January 2020, when a woman returning from Wuhan tested positive.

On 31 January, two members of a family of Chinese nationals staying in a hotel in York, United Kingdom, one of whom studied at the University of York, became the first confirmed cases of COVID-19 in the UK.

The first confirmed to have spread to Brussels, Belgium on 4 February 2020, when a Belgian national out of a group of nine Belgians repatriated from Wuhan, to [Brussels](https://en.wikipedia.org/wiki/Brussels) tested positive for the [COVID-19](https://en.wikipedia.org/wiki/COVID-19) virus.[[4]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Belgium#cite_note-6)[[5]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Belgium#cite_note-7)

Iran reported its first confirmed cases of [SARS-CoV-2](https://en.wikipedia.org/wiki/Severe_acute_respiratory_syndrome_coronavirus_2) infections on 19 February 2020 in [Qom](https://en.wikipedia.org/wiki/Qom).[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Iran#cite_note-NYT_Iran_19Feb_first2-3) The virus may have been brought to the country by a merchant from Qom who had travelled to China.[[4]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Iran#cite_note-newyorker1-4)

The first case in Israel was confirmed on 21 February 2020, after a female citizen tested positive for [coronavirus disease 2019](https://en.wikipedia.org/wiki/Coronavirus_disease_2019) at the [Sheba Medical Center](https://en.wikipedia.org/wiki/Sheba_Medical_Center) after return from quarantine on the [*Diamond Princess*](https://en.wikipedia.org/wiki/Diamond_Princess_(ship)) ship in Japan.

On 21 February 2020, Bahrain confirmed the first [COVID-19](https://en.wikipedia.org/wiki/COVID-19) cases, a school bus driver who came from Iran via [Dubai](https://en.wikipedia.org/wiki/Dubai).[[8]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Bahrain#cite_note-:4-8)

On 25 February, Algeria laboratory-confirmed its first case of [severe acute respiratory syndrome coronavirus 2](https://en.wikipedia.org/wiki/Severe_acute_respiratory_syndrome_coronavirus_2) (SARS-CoV-2), an Italian man who arrived on 17 February from Rome.

The [2019–2020 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%932020_coronavirus_pandemic) was confirmed to have spread to Austria on 25 February, a 24-year-old man and a 24-year-old woman travelling from Lombardy, Italy, who were treated at a hospital in Innsbruck.[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Austria#cite_note-2)[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Austria#cite_note-3)[[4]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Austria#cite_note-4)[[5]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Austria#cite_note-5)

The ongoing [pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) of [coronavirus disease 2019](https://en.wikipedia.org/wiki/COVID-19) (COVID-19) was confirmed to have spread to [Brazil](https://en.wikipedia.org/wiki/Brazil) on 25 February 2020,[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Brazil#cite_note-3) after a 61-year-old man from [São Paulo](https://en.wikipedia.org/wiki/S%C3%A3o_Paulo) who had returned from Lombardy, Italy tested positive for the virus.

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) first appeared in Greece on 26 February 2020 when the first [COVID-19](https://en.wikipedia.org/wiki/COVID-19) case, a 38-year-old woman from Thessaloniki who had recently visited [Νorthern Italy](https://en.wikipedia.org/wiki/Northern_Italy" \o "Northern Italy), was confirmed.

The first case of COVID-19 in the [U.S. state](https://en.wikipedia.org/wiki/U.S._state) of [California](https://en.wikipedia.org/wiki/California) was confirmed on January 26. In Orange County, a man in his 50s who was diagnosed with coronavirus after traveling to Wuhan, China, was released from the hospital Saturday, Feb. 1

Georgia's first two cases of COVID-19 were reported on March 2, 2020 residents of Fulton County, Georgia who lived in the same household and one had just returned from Rome Italy. Both of them had mild symptoms and were isolated at home with other relatives. On March 12, a 67-year-old man with underlying medical conditions died from the coronavirus, marking Georgia's first death.

Florida became the third state on March 1 to confirm its first COVID-19 cases: one in Manatee County and one in Hillsborough County, who returned from Italy, where there's a large outbreak.

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed to have reached Andorra la Vella,

 Andorra on 2 March 2020, a 20-year-old man who had returned from Milan, Italy.[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Andorra#cite_note-2)

On 2 March, the [Prime Ministry of Jordan](https://en.wikipedia.org/wiki/Prime_Minister_of_Jordan) reported the first case of coronavirus in Jordan.[[7]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Jordan#cite_note-jordan.1-7)[[8]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Jordan#cite_note-8) The Jordanian had returned from [Italy](https://en.wikipedia.org/wiki/Italy) two weeks prior, before quarantine procedures for Jordanians returning from Italy had been put in place.[[7]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Jordan#cite_note-jordan.1-7)[[9]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Jordan#cite_note-9)[[10]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Jordan#cite_note-10)

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed to have spread to Morocco on 2 March 2020, when the first case COVID-19 case was confirmed in Casablanca. It involved a Moroccan Expatriate residing in [Italy](https://en.wikipedia.org/wiki/Italy) and who came from [Italy](https://en.wikipedia.org/wiki/Italy) on 27 February 2020.

Tunisia confirmed its first case on 2 March 2020, with the victim being a 40-year-old Tunisian man from Gafsa returning from [Italy](https://en.wikipedia.org/wiki/Italy).[[9]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Tunisia#cite_note-9)[[10]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Tunisia#cite_note-tunisia.1-10)

 A first case of the [COVID-19](https://en.wikipedia.org/wiki/Coronavirus_disease_2019) has been confirmed in Buenos Aires, Argentina. The patient is a 43-year-old man who arrived on 1 March from Milan, Italy.[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Argentina#cite_note-InfobaePrimer-4)

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed to have spread to Ukraine when its first case was confirmed to be hospitalized in [Chernivtsi Oblast](https://en.wikipedia.org/wiki/Chernivtsi_Oblast) on 3 March 2020,[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Ukraine#cite_note-2) a man who had travelled from Italy to Romania by plane and then arrived in Ukraine by car.[[3]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Ukraine#cite_note-3)

The first two known cases in Hungary were students from [Iran](https://en.wikipedia.org/wiki/Iran), who were studying in Hungary. One of them was enrolled at the Pharmacy Faculty of [Semmelweis University](https://en.wikipedia.org/wiki/Semmelweis_University).[[18]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Hungary#cite_note-18) The student did not comply with the preventive measures required by the university as a precaution. He already visited his primary care physician and he was diagnosed with bacterial infection so that he didn't have to quarantine himself, and instead, he attended courses held in English with 16 other students.[[19]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Hungary#cite_note-euronews20200305-19)

The [2019–20 coronavirus pandemic](https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic) was confirmed to have reached Bosnia and Herzegovina on 5 March 2020 in Banja Luka, who had been in Italy during the 2020 coronavirus pandemic.

The [Palestinian health ministry](https://en.wikipedia.org/wiki/Health_Minister_of_the_State_of_Palestine) said the cases had first been detected at a hotel in the Bethlehem area, where a group of [Greek](https://en.wikipedia.org/wiki/Greece) tourists had visited the hotel in late February, with two later diagnosed with the virus.[[2]](https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_the_State_of_Palestine#cite_note-autogenerated1-2)

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Source | Destination | Date |
| 1 | Wuhan, China | Huanan, China | 29-Dec-19 |
| 2 | Wuhan, China | Anyang, China | 10-Jan-20 |
| 3 | Wuhan, China | Bangkok, Thailand | 13-Jan-20 |
| 4 | Wuhan, China | Tokyo, Japan | 16-Jan-20 |
| 5 | Wuhan, China | Zhejiang, China | 19-Jan-20 |
| 6 | Wuhan, China | Zhejiang, China | 19-Jan-20 |
| 7 | Wuhan, China | Tokyo, Japan | 20-Jan-20 |
| 8 | Wuhan, China | Bangkok, Thailand | 20-Jan-20 |
| 9 | Wuhan, China | Seoul, South Korea | 20-Jan-20 |
| 10 | Wuhan, China | Snohomish, WA | 20-Jan-20 |
| 11 | Wuhan, China | Kirkland, WA | 21-Jan-20 |
| 12 | Wuhan, China | Sihanoukville, Cambodia | 23-Jan-20 |
| 13 | Wuhan, China | Singapore City, Singapore | 23-Jan-20 |
| 14 | Wuhan, China | Chicago, Illinois | 24-Jan-20 |
| 15 | Wuhan, China | Paris, France | 24-Jan-20 |
| 16 | Wuhan, China | Victoria, Australia | 25-Jan-20 |
| 17 | Wuhan, China | Toronto, Canada | 25-Jan-20 |
| 18 | Wuhan, China | Orange County, CA | 25-Jan-20 |
| 19 | Singapore City, Singapore | Kuala Lumpur, Malaysia | 25-Jan-20 |
| 20 | Lombardy, Italy | Munich, Germany | 27-Jan-20 |
| 21 | Wuhan, China | Nanjing, China | 28-Jan-20 |
| 22 | Wuhan, China | Dubai, UAE | 29-Jan-20 |
| 23 | Wuhan, China | Ivalo, Finland | 29-Jan-20 |
| 24 | Zhejiang, China | Rome, Italy | 30-Jan-20 |
| 25 | Wuhan, China | Kerala, India | 30-Jan-20 |
| 26 | Wuhan, China | St. Petersburg, Russia | 31-Jan-20 |
| 27 | Wuhan, China | Rome, Italy | 31-Jan-20 |
| 28 | Munich, Germany | Gomera, Spain | 31-Jan-20 |
| 29 | Wuhan, China | Stockholm, Sweden | 31-Jan-20 |
| 30 | Zhejiang, China | York, United Kingdom | 31-Jan-20 |
| 31 | Wuhan, China | Brussels, Belgium | 4-Feb-20 |
| 32 | Wuhan, China | Myongji, South Korea | 6-Feb-20 |
| 33 | Wuhan, China | Qom, Iran | 19-Feb-20 |
| 34 | Nagasaki, Japan | Ramat Gan, Israel | 21-Feb-20 |
| 35 | Dubai, UAE | Manama, Bahrain | 21-Feb-20 |
| 36 | Rome, Italy | Morocco, Algeria | 25-Feb-20 |
| 37 | Lombardy, Italy | Innsbruck, Austria | 25-Feb-20 |
| 38 | Lombardy, Italy | Sao Paulo, Brazil | 25-Feb-20 |
| 39 | Rome, Italy | Thessaloniki, Greece | 26-Feb-20 |
| 40 | Rome, Italy | Tilburg, Netherlands | 27-Feb-20 |
| 41 | Rome Italy | Manatee County, FL | 1-Mar-20 |
| 42 | Tehran, Iran | New York, NY | 1-Mar-20 |
| 43 | Tehran, Iran | New York, NY | 1-Mar-20 |
| 44 | Rome Italy | Fulton County, GA | 2-Mar-20 |
| 45 | Rome, Italy | Fulton County, GA | 2-Mar-20 |
| 46 | Milan, Italy | Andorra la Vella, Andorra | 2-Mar-20 |
| 47 | Tokyo, Japan | Jakarta, Indonesia | 2-Mar-20 |
| 48 | Rome, Italy | Amman, Jordan | 2-Mar-20 |
| 49 | Tehran, Iran | Riga, Latvia | 2-Mar-20 |
| 50 | Tehran, Iran | Riyadh, Saudi Arabia | 2-Mar-20 |
| 51 | Paris, France | Dakar, Senegal | 2-Mar-20 |
| 52 | Milan, Italy | Casablanca, Morocco | 2-Mar-20 |
| 53 | Rome, Italy | Gafsa, Tunisia | 2-Mar-20 |
| 54 | Milan, Italy | Buenos Aires, Argentina | 3-Mar-20 |
| 55 | Rome, Italy | Kiev, Ukraine | 3-Mar-20 |
| 56 | Tehran, Iran | Budapest, Hungary | 4-Mar-20 |
| 57 | Rome, Italy | Banja Luka, Bosnia and Herzegovina | 4-Mar-20 |
| 58 | Milan, Italy | Bethlehem, Palestine | 5-Mar-20 |

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# First Case of 2019 Novel Coronavirus in the United States

<https://www.nejm.org/doi/full/10.1056/NEJMoa2001191>

Wuhan, China to Snohomish, WA, January 19, 2020

<https://www.sciencedirect.com/science/article/pii/S0896841120300469>

Timeline of first confirmed cases by country or territory

|  |  |
| --- | --- |
| **Date** | **Country or territory** |
| 1 December | China |
| 13 January | Thailand |
| 16 January | Japan |
| 20 January | South Korea • United States |
| 21 January | *Taiwan* |
| 22 January | *Hong Kong* • *Macau* |
| 23 January | Singapore • Vietnam |
| 24 January | France • Nepal |
| 25 January | Australia • Canada • Malaysia |
| 27 January | Cambodia • Germany • Sri Lanka |
| 29 January | Finland • United Arab Emirates |
| 30 January | India • Italy • Philippines |
| 31 January | Russia • Spain • Sweden • United Kingdom |
| 4 February | Belguim |
| 14 February | Eygpt |
| 19 February | Iran |
| 21 February | Isreal • Lebanon |
| 24 February | Afghanistan • Bahrain • Iraq • Kuwait • Oman |
| 25 February | Algeria • Austria • Brazil • Croatia • Switzerland |
| 26 February | Georgia • Greece • North Macedonia • Norway • Pakistan • Romania |
| 27 February | Denmark •  Estonia • Netherlands • Nigeria • San Marino |
| 28 February | Azerbaijan • Belarus • Iceland • Lithuania • Mexico • Monaco • New Zealand |
| 29 February | Ecuador • Ireland • Luxembourg • Qatar |
| 1 March | Armenia • Czechia • Dominican Republic • *Saint Barthélemy* • *Saint Martin* |
| 2 March | Andorra • Indonesia • Jordan • Latvia • Morocco • Portugal • Saudi Arabia • Senegal • Tunisia |
| 3 March | Argentina • Chile • *Gibralta*r • Liechtenstein • Ukraine |
| 4 March | *Faroe Islands* • *French Guiana* • Hungary • Poland • Slovenia |
| 5 March | Bosnia and Herzegovina • *Martinique* • Palestine • South Africa |
| 6 March | Bhutan • Cameroon • Colombia • Costa Rica • Peru • Serbia • Slovakia • Togo • Vatican City |
| 7 March | Maldives • Malta • Moldova • Paraguay |
| 8 March | Albania • Bangladesh • Bulgaria |
| 9 March | Brunei •  Cyprus • *Guernsey* • Panama |
| 10 March | Bolivia • Burkina Faso • DR Congo • Jamaica • *Jersey* • Mongolia • *Northern Cyprus* • Turkey |
| 11 March | Cuba • *French Polynesia* • Guyana • Honduras • Ivory Coast • *Réunion* |
| 12 March | Saint Vincent and the Grenadines • Trinidad and Tobago |
| 13 March | Antigua and Barbuda • *Aruba* • *Cayman Islands* • *Curaçao* • Ethiopia • Gabon • Ghana • *Guadeloupe* • Guatemala • Guinea • Kazakhstan • Kenya • *Kosovo* • *Puerto Rico* • Saint Lucia • Sudan • Suriname • *U.S. Virgin Islands* • Uruguay • Venezuela |
| 14 March | Central African Republic • Congo • Equatorial Guinea • Eswatini • Mauritania • *Mayotte* • Namibia • Rwanda • Seychelles |
| 15 March | *Akrotiri and Dhekelia* • Bahamas • *Guam* • Uzbekistan |
| 16 March | Benin • *Greenland*] • Liberia • Somalia • Tanzania |
| 17 March | Barbados • Gambia • Montenegro • *Sint Maarten* |
| 18 March | *Bermuda* • Djibouti • El Salvador • Kyrgyzstan • Mauritius • *Montserrat* • *New Caledonia* • Nicaragua • Zambia |
| 19 March | Angola • Chad • Fiji • Haiti • *Isle of Man* • Niger |
| 20 March | Cape Verde • East Timor • Madagascar • Papua New Guinea • Uganda • Zimbabwe |
| 21 March | *Åland Islands* • Eritrea • *Transnistria* |
| 22 March | Dominica • Grenada • Mozambique • Syria |
| 23 March | Belize • Myanmar • *Turks and Caicos Islands* |
| 24 March | Laos • Libya |
| 25 March | *British Virgin Islands* • Guinea-Bissau • Mali • Saint Kitts and Nevis |
| 26 March | *Anguilla* |
| 28 March | *Northern Mariana Islands* |
| 30 March | Botswana |
| 31 March | Burundi • *Donetsk People's Republic* • *Luhansk People's Republic* • Sierra Leone • *Sint Eustatius* • *Somaliland* |
| 2 April | Malawi |
| 3 April | *Falkland Islands* |
| 4 April | *Western Sahara* |
| 5 April | *Saint Pierre and Miquelon* • South Sudan |
| 6 April | São Tomé and Príncipe |
| 7 April | *Abkhazia*• *Artsakh* |
| 10 April | Yemen |
| 11 April | *Saba* |
| 16 April | *Bonaire* |
| Source: | <https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_by_country_and_territory> |