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Timeline of the COVID-19 pandemic in 2019

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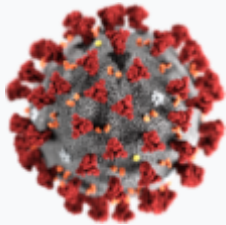
Main article: [COVID-19 pandemic](#)

This article documents the chronology and [epidemiology](#) of [SARS-CoV-2](#) in 2019, the virus which causes the coronavirus disease 2019 ([COVID-19](#)) and is responsible for the [COVID-19 pandemic](#). The first human cases of COVID-19 were identified in [Wuhan](#), China, in December.

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Part of a [series](#) on the
COVID-19 pandemic



SARS-CoV-2 (virus) · COVID-19 (disease)

Timeline [\[hide\]](#)

2019

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COVID-19 Portal

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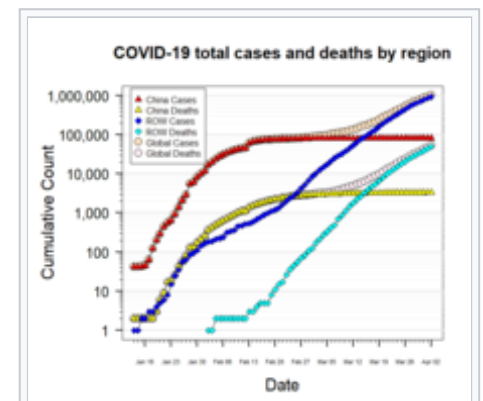
Pandemic chronology [\[edit\]](#)

October and November [\[edit\]](#)

SARS-CoV-2 is thought to have arisen in October or November 2019, as indicated by [phylogenetic studies](#).^{[3][4][5]} Current evidence suggests that it descends from a coronavirus which infects wild [bats](#) and spread to humans through an intermediary wildlife host. It is not known whether the virus itself evolved in wildlife populations or if its distinctive spike proteins were selected for after [zoonotic transfer](#) to humans.^{[6][7][3][4]}

1 December [\[edit\]](#)

A clinical study documents the [index case](#), or *patient zero* – his symptoms started on 1 December.^[8] The study summarised the laboratory-confirmed cases as of 2 January 2020, and although not explicit on every single case, it was noted the first case was male, had not been to the [Huanan Seafood Wholesale Market](#) of [Wuhan](#), that his family was unaffected and that no



Semi-log plot of [cumulative incidence](#) of confirmed cases and deaths in China and the rest of the world.^{[1][2]}

epidemiological link between him and the other cases was found.^[8] The BBC Chinese Service later confirmed that they had received information from Wenjuan Wu, one of the authors from the article in *Lancet* and who was one of Wuhan's JinYinTan Hospital's senior doctors, that this first man was in his 70s, had [Alzheimer's disease](#), lived several bus rides away from the market and did not venture out from his home.^{[9][10]}

16 December [\[edit \]](#)

As of February 2020, the first documented COVID-19 hospital admissions were dated to 16 December 2019.^[8]

18 December [\[edit \]](#)

The Italian National Institute of Health looked at 40 sewage samples collected from wastewater treatment plants in northern Italy between October 2019 and February 2020. An analysis released in June 2020 said samples taken in Milan and Turin on 18 December showed the presence of the SARS-CoV2 virus.^[11]

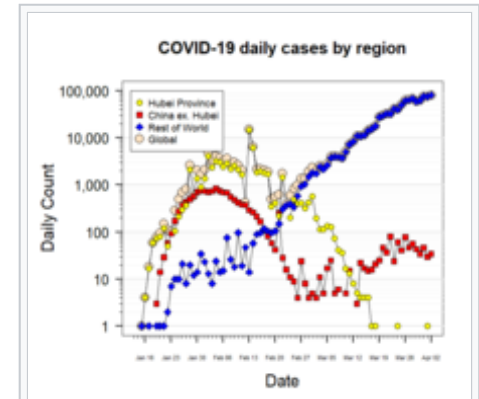
24 December [\[edit \]](#)

An unresolved clinical case sparks off the first scientific involvement: a [bronchoalveolar lavage fluid](#) (BAL) sample was sent from [Wuhan Central Hospital](#) to *Vision Medicals* (广州微远基因科技有限公司) in [Guangzhou](#) – a private company specialising in metagenomic massive parallel sequencing analysis.^{[12][13]}

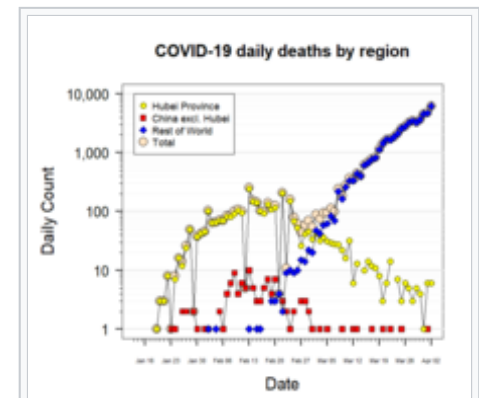
26 December [\[edit \]](#)

An elderly couple, both suffering from fever and coughs, sought treatment at the Hubei Provincial Hospital of Integrated Chinese and Western Medicine (湖北省新华医院). Zhang Jixian, director of the Department of Respiratory and Critical Care examined the couple and made the preliminary diagnosis of their illness as something that "looked like flu or common pneumonia".^{[14][15][16]}

27 December [\[edit \]](#)



Semi-log plot of daily [incidence](#) (epidemiology) of cases by region: Hubei Province; mainland China excluding Hubei; the rest of the world (ROW); and the world total.^{[1][2]}



Semi-log plot of coronavirus daily deaths by region: Hubei Province; mainland China excluding Hubei; the rest of the world (ROW); and the world total.^{[1][2]}

After having observed the elderly couple's CT scans were abnormal, Zhang Jixian asked the couple's son to undergo a scan and found the same pattern. Zhang Jixian had been working as medical expert during the SARS outbreak in 2003, and was aware of the signs of a suspected outbreak of an infectious disease.^{[14][15][16]} Another patient, a merchant from the [Huanan Seafood Wholesale Market](#),^[16] arrived at the hospital with fever and cough that day, and his CT scan showed the same characteristics. All blood tests from the four patients indicated viral infection and a further array of influenza-related tests came back negative. Zhang Jixian filed a report to her superiors and also took the precaution of making a provisional quarantine area.^{[14][15][16]}

Wuhan Central Hospital received message from *Vision Medicals* that the BAL sample taken on 24 December contained a new kind of coronavirus, and the patient was then quarantined.^[17] Also at Wuhan Central Hospital, yet another unresolved case caused a BAL sample to be taken, this time sent off to *CapitalBio Medlab* of Beijing (北京博奥医学检验所有限公司).^[12]

Respiratory samples from a man hospitalized in [Paris, France](#) were retrospectively diagnosed as having SARS-CoV-2 virus present. The man presented with advanced symptoms (chest CT of ground glass opacities). His child had previously presented with influenza-like illness. The man had not traveled recently (his last travel outside of France had been to [Algeria](#) in Aug 2019). The study from 14 April was published 3 May and widely reported (ex. BFMTV, *ABC News*, *Business Insider*).^{[18][19][20]} The epidemiological circumstances remain uninvestigated.^[21] (Note: these findings do not appear in the statistics overview from the French Public Health Ministry.^[22])

29 December [\[edit \]](#)

On this day and the previous, three similar cases arrived at Hubei Provincial Hospital of Integrated Chinese and Western Medicine, all associated with the seafood market. The health authorities had been informed, and medical experts from Wuhan JinYinTan Hospital, "a hospital designated to treat infectious diseases"^[23] came to transfer six of the seven patients. Zhang Jixian took the further initiative to let doctors and nurses in the respiratory department wear face masks, and put out an order for 30 hospital coats of fine canvas.^{[14][15]}

The Wuhan CDC staff found also additional patients with similar symptoms who were linked to the market.^[24] (The Wuhan 'Center for Disease Control and Prevention' (CDC) is part of [Chinese Center for Disease Control and Prevention](#).)

30 December [\[edit \]](#)

Wuhan Central Hospital received a test report from *CapitalBio Medlab*, claiming an occurrence of [SARS](#).^[12] According to social media, the test result was later found faulty.^[17] Several doctors at Wuhan Central Hospital shared the test report on social media in discussions mainly aimed at colleagues.^[12]

The first official messages in the pandemic [\[edit \]](#)

Wuhan Municipal Health Commission sent a message to its affiliate institutions.^[25]

- Supervising doctors shall hold fast on discipline and create specialised team-units.
- General staff must be alert to the situation, especially keeping an eye out for patients with symptoms of infectious pneumonia.
- Statistical material must be gathered ongoingly and send to Wuhan Municipal Health Commission and Hubei Province Health Committee.
- Statistical material for the previous week, relating to patients with symptoms of infectious pneumonia, is to be sent to Wuhan Municipal Health Commission before 4 o'clock, this day.
- Without permission from authorised personnel no one is allowed to spread information about the medical treatment.^{[26][27]}

31 December [\[edit \]](#)

The first public message in the pandemic [\[edit \]](#)

The Wuhan Municipal Health Commission informed the city community about the early signs of a pneumonia outbreak.^[28] The message conveys the impression of alertness, by summarising yesterday's orders to the city hospitals; emphasising ongoing scientific and clinical investigations and to seek hospital care when having persistent fever while showing symptoms of pneumonia; as well advising the public to wear face masks and to avoid enclosed public places and crowded areas.

Cases in sum : 27

Serious cases : 7

Recovering : 2

As yet : no fatalities, no healthcare-workers infected, no signs of human-to-human transmission, cause of pneumonia infection still under investigation

Chinese government broadcasters CCTV and CGTN reported about viral pneumonia, and through the [Weibo](#) account "YangShiXinWen", also sent an alert about the unknown virus, adding that a team of experts from the National Health Commission would arrive in Wuhan.^{[29][30][31]}

Qu Shiqian, a vendor at the Huanan Seafood Wholesale Market, said government officials had disinfected the premises on 31 December and told stallholders to wear masks. Qu said he had only learned of the pneumonia outbreak from media reports. "Previously I thought they had flu," he said. "It should be not serious. We are fish traders. How can we get infected?"^[32]

Inter-regional measures

According to the Hong Kong government Centre for Health, various "surveillance measures at all boundary control points" have begun – including thermal imaging for checks on body temperature.^[33]

Events, reactions and measures [\[edit \]](#)

23–24 December [\[edit \]](#)

A BAL sample is sent from Wuhan Central Hospital to *Vision Medicals*. According to the GenBank record, the sample was obtained 23 December, whereas [Ren et al., *Chin Med J*, 2020](#) sets the date to 24 December 2019.^{[34][35]}

27 December [\[edit \]](#)

Vision Medicals inform Wuhan Central Hospital, by phone, that the requested analysis of a BAL sample – obtained 24 December – show a new kind of coronavirus ([Chinese](#): ... "一种新的冠状病毒。" ; ... "*a new kind of coronavirus.*").^[12] *Vision Medicals* also send a written report to the [Chinese Academy of Medical Science](#). The report tells of [Chinese](#): ... "样本里面确实有一个跟Bat SARS like coronavirus类似的新型病毒" ; ... "*a sample containing a new coronavirus similar to bat SARS coronavirus*" and in the days that follow there is an intensified communication between the CEO of *Vision Medicals* Li Youngjun (李永军), the Wuhan Central Hospital and the local CDC.^[17]

According to news reports in February 2020 – *Workers Daily*, *Global Times* – at the Hubei Provincial Hospital of Integrated Chinese and Western Medicine and following the report from Doctor Zhang Jixian, the hospital immediately alerted the local CDC, Wuhan Jiangnan Disease Prevention and Control Center,^{[15][16]} however, the report of 22 January 2020 from the Chinese CDC seems to claim this contact falling on 29 December.^[24]

29 December [\[edit \]](#)

The administration at Hubei Provincial Hospital of Integrated Chinese and Western Medicine convened an inter-departmental panel of doctors whose conclusions were the cases were unusual and required special attention, and also having learned of two similar cases in the city, decided to report their findings to the municipal and provincial health authorities, Wuhan Municipal Health Commission and Hubei Province Health Committee.^[16]

30 December [\[edit \]](#)

Wuhan Central Hospital receives report from *CapitalBio Medlab* that their sample (obtained 27 December) contains [SARS coronavirus](#).^[12] According to a [Caixin](#) news report, this is a mistake. The same news report allege this sample was later sent on from

CapitalBio Medlab to *Vision Medicals*, and that *Vision Medicals* could confirm the sample contained SARS-CoV-2, i.e. identical to the first sample *Vision Medicals* had received.^[17]

The alleged faulty test-report went to the social media ("社交媒体"), where a couple of doctors from the hospital joined in with warnings and cautions to some of their colleagues. As referred in *Caixin Online*, from the social media account of [Li Wenliang](#), it is stated that there are 7 cases of SARS at the Wuhan Central Hospital, all connected to the [Huanan Seafood Wholesale Market](#).^[12]

For *Vision Medicals*, too, these are hectic days (27–30 December) with the Chinese CDC requesting all results from *Vision Medicals* and from the Chinese Academy of Medical Science: "this was an urgent, secret and serious investigation".^[17]

The first official messages in the pandemic

Wuhan Municipal Health Commission sends hard-copy messages to its affiliated institutions, containing guidelines in confronting a possible outbreak of infectious pneumonia.^[25] Two scan-copies also found their way, the same day, to the [Weibo QQ](#) service – a social media platform.^{[26][27][36]}

The first information reaching an international context

The [ProMED reporting program](#), under auspice of [ISID](#), reported on the situation in Wuhan. The full date is actually 30 December 23:59:00.^[25]

WHO may also have noticed the information coming out from Wuhan.^[37]

31 December [[edit](#)]

The first public message in the pandemic

The Wuhan Municipal Health Commission released a briefing on its website about the pneumonia outbreak in the city.^[28] The message on finding pneumonia of unknown cause was circulated through news agencies, including the state television [CCTV](#)^[29], local news agencies (ex. [湖北日报网](#) [Hubei Daily Online])^[38] and social media (ex. [Weibo](#) account "央视新闻" [ed. "YangShiXinWen", *China Central Television News*]).^[30] *The People's Daily* said the "exact cause remained unclear and it would be premature to speculate."^[32]

Information was picked up by international news agencies [Reuters](#) and Deutsche Welle as well as Hong Kong based *South China Morning Post*:

Hong Kong takes emergency steps as mystery 'pneumonia' infects 27 in Wuhan^[32]

China investigates SARS-like virus as dozens struck by pneumonia^[39]

Chinese officials investigate cause of pneumonia outbreak in Wuhan^[40]

Inter-regional reactions

In response to the announcement from the Wuhan municipality, the Hong Kong government Centre for Health tightened their inbound screening processes. In a press release, the CHP sent a general appeal to the public to maintain hygiene, with detailed advice on washing hands and wearing a face-mask, and as well further precautions when travelling outside Hong Kong.^[33] Hong Kong Secretary for Food and Health Sophia Chan Siu-chee announced "[any suspected cases] including the presentation of fever and acute respiratory illness or pneumonia, and travel history to Wuhan within 14 days before onset of symptoms, we will put the patients in isolation."^[32]

Tao Lina, a public health expert and former official with the Shanghai Center for Disease Control and Prevention, said, "I think we are [now] quite capable of killing it in the beginning phase, given China's disease control system, emergency handling capacity and clinical medicine support." No human-to-human infection had been reported so far and more pathological tests and investigations were underway, an official said.^[32]

Information reaching an international context

According to the World Health Organisation, it received information concerning the situation in Wuhan.^[41]

The US [CDC](#) claim to have "first learned of a 'cluster of 27 cases of pneumonia'" in Wuhan on this day.^[42]

Claims of earlier cases [\[edit \]](#)

- **March 2019** Chavarria-Miró et al. (submitted) reported finding traces of potentially SARS-CoV-2 related genetic material in a sewage sample collected in Barcelona on 12 March 2019. This manuscript is available as a preprint and has not yet undergone peer review. The researchers suggest that this finding "indicates circulation of the virus in Barcelona long before the report of any COVID-19 case worldwide". However, other researchers have regarded the results with caution, pointing out that there is no evidence of increased respiratory infection in Barcelona around that time. It has been suggested that the results could be a false positive due either to contamination in the laboratory or to the imprecision of the test.^{[43][44][45]}
- **August 2019** A manuscript of a study by a team of epidemiologists in [Boston](#) suggested that COVID-19 could have been spreading in China as early as August 2019. The study found increased traffic in [parking lots](#) of Wuhan hospitals that summer, coinciding with increased internet search traffic for terms such as "diarrhea". The authors hypothesized that these results were the result of early coronavirus cases, but cautioned that they could not directly verify such a link or rule out alternative explanations. Other researchers expressed cautious interest in the study, while noting that it did not compare the results from Wuhan to hospitals in other places.^{[46][47]} Some researchers have criticised the study's methodology, noting that diarrhea is only the 7th most common symptom of COVID-19.^[48]

- **27 November:** A preprint posted online in June 2020 reported that two raw [sewage](#) samples collected independently on 27 November 2019 in [Santa Catarina, Brazil](#), detected SARS-CoV-2 (100,000 copies per litre), 66 days in advance of the first confirmed COVID-19 case in the Americas. Subsequent samplings were positive on 11 December and 20 February. These samples show that SARS-CoV-2 could have been circulating in Brazil since late November 2019.^[49]

Short summary [\[edit \]](#)

Retrospective studies consider the SARS-CoV-2 to have evolved in November 2019. Scientific comprehension of this new kind of [SARS-like coronavirus](#) took place at *Vision Medicals*, located in Guangzhou province, between 24–27 December 2019. Clinical apprehension of a pending epidemic started at Hubei Provincial Hospital of Integrated Chinese and Western Medicine in Wuhan almost the same time, in the days between 27 and 29 December 2019. At 31 December 2019 the Wuhan Health authorities issued a case statistic. At that day information reached WHO through official channels and the U.S. CDC as well.

See also [\[edit \]](#)

- [Timeline of the COVID-19 pandemic](#)

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