

Pneumonia cases possibly associated with a novel coronavirus in Wuhan, China

9 January 2020

Event background

On 31 December 2019, the [Wuhan Municipal Health Commission](#) reported a cluster of 27 pneumonia cases of unknown aetiology, including seven severe cases, with a common reported link to Wuhan's South China Seafood City market (a wholesale fish and live animal market selling different animal species). The cases showed symptoms common to several respiratory diseases such as fever, dyspnoea, and radiological tests compatible with bilateral lung infiltrative lesions. Authorities placed all cases under isolation, initiated contact tracing activities and applied hygiene and environmental sanitation activities at the market, which was closed to the public on 1 January 2020. Preliminary investigations suggested viral pneumonia, meanwhile analyses were performed to identify the pathogen. According to the Chinese authorities, no significant human-to-human transmission has been observed. No cases among healthcare workers have been reported.

By 5 January 2020, [Chinese authorities](#) had reported 32 additional pneumonia cases of unknown aetiology in Wuhan with dates of onset ranging from 12–29 December 2019. This adds up to 59 cases, seven of which are severely ill. Contact tracing activities have identified 163 close contacts. Laboratory investigations have ruled out seasonal and avian influenza viruses, adenovirus, SARS and MERS coronaviruses as the causative agents of these cases. Environmental cleaning of the South China Seafood City market has been completed and further hygiene investigations are ongoing.

Since it has direct transport links to Wuhan, the Hong Kong Special Administrative Region (SAR) has enhanced the monitoring of cases with unexplained pneumonia in hospitals. To date, no cases related to the Wuhan cluster have been reported by the health authorities in Hong Kong SAR. Following the enhanced surveillance, the authorities have published [a list](#) of suspected cases, with details of confirmed laboratory tests of the different pathogens causing respiratory symptoms in these cases. In addition to the clinical monitoring and laboratory testing, epidemiological investigations are being carried out to support the enhanced surveillance.

Media have reported that neighbouring countries and regions such as [Hong Kong SAR](#), [Taiwan](#), [Thailand](#), [Malaysia](#), [Vietnam](#), [the Philippines](#) and [Singapore](#) have implemented thermal entry screening activities for all travellers arriving from the affected area at their transport hubs such as airports and train stations. According to a [media report](#) passengers arriving in Singapore with fever and acute respiratory illness or pneumonia, who had travelled to Wuhan up to 14 days before the onset of symptoms, are being screened and isolated, with further investigation being initiated.

On 5 January 2020, the World Health Organization (WHO) published a [disease outbreak news](#) item summarising the information available as of 3 January 2020. The data are considered to be 'limited' to be able to perform an overall risk assessment. WHO refers to 'the reported link to a wholesale fish and live animal market, which could indicate an exposure link to animals. Although the symptoms reported among the patients are common to several respiratory diseases, and pneumonia is common in the winter season; the occurrence of this number of cases of pneumonia requiring hospitalization clustered in space and time should be handled prudently.' WHO does not recommend any specific measures for travellers and advises against travel or trade restrictions being imposed on China.

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On 6 January 2020, the US Centers for Disease Control and Prevention (CDC) published a [Watch – Level 1 travel notice](#) related to the cases of pneumonia, addressing travellers to and from Wuhan as well as providing clinical information to healthcare practitioners to be aware of the cluster of pneumonia cases. On 8 January 2020, the US CDC also informed of the cluster of cases with unknown pneumonia through the [Health Alert Network](#) (HAN). Healthcare providers should consider patients with severe respiratory symptoms, having travelled to Wuhan since 1 December 2019 and had onset of illness within two weeks of returning, and who do not have another known diagnosis as cluster-related cases. Different respiratory specimens, along with specimens from urine, stool and serum, should be collected from these patients. The US CDC recommends that 'symptomatic patients... wear a surgical mask as soon as they are identified and be evaluated in a private room with the door closed.' According to CDC, healthcare providers should use contact precautions and wear an N95 disposable face piece respirator while evaluating the patient. For patients admitted for in-patient care, in addition to standard precautions, contact and airborne isolation precautions are recommended, although no evidence of human-to-human transmission has been reported.

Another [media report](#) interviewing a member of the Chinese Academy of Engineering, states that 'on 7 January 2020, a new coronavirus was detected in the laboratory, and the entire genome sequence of the virus was obtained. A total of 15 positive results of the new coronavirus were detected by nucleic acid detection methods. From one positive patient the virus was isolated from the samples and showed a typical coronavirus appearance under an electron microscope. The expert group believes that the pathogen of this unexplained case of viral pneumonia was initially identified as a new type of coronavirus.' The [Chinese CDC](#) also refers to a report by [XINHUA](#), the official press agency of China, detailing the detection of a new coronavirus.

The [WHO Regional Office for the Western Pacific](#) has posted a statement that also mentioned the 'preliminary determination of a novel (or new) coronavirus, identified in a hospitalised person with pneumonia in Wuhan'.

The airport of Wuhan has [direct flight connections](#) with some European Union (EU) cities: Paris (France) with six weekly flights, London (United Kingdom) with three weekly flights and Rome (Italy) with five weekly flights. Authorities in the concerned countries remain vigilant and are closely monitoring the situation. Among these countries, Italy has established enhanced surveillance for incoming flights from Wuhan, China and the United Kingdom has informed healthcare providers and will publish travel advice to the general public.

General information on coronaviruses is available [here](#).

ECDC risk assessment for the EU/EEA

Chinese authorities have ruled out SARS-CoV, MERS-CoV, seasonal influenza virus, avian influenza virus, adenovirus and other common respiratory pathogens. Reports indicate that a new coronavirus has been identified as the etiological agent for viral pneumonia in hospitalised cases belonging to the pneumonia cluster in Wuhan. Media reports cite Xu Jianguo, who confirms identification of a new coronavirus, however, no sequence data have been made publicly available yet. To date, no cases belonging to the cluster in Wuhan have been identified outside of Wuhan and no suspected or possible cases with unknown pneumonia and travel to Wuhan have been reported from EU/EEA countries or globally. To date, only local people living and working in Wuhan seem to be affected.

The seafood market in Wuhan is mentioned as a suspected place of exposure, which could indicate an exposure link to animals. Although the seafood market has now been closed and disinfected, the source of infection has not been identified. Information on case characteristics, aetiology, epidemiological data, exposure and applied case definition to identify cases belonging to the cluster in Wuhan is limited. There are still many unknowns about this outbreak, introducing a high level of uncertainty to the assessment below.

Risk for travellers, introduction and further spread in the EU: three EU airports have direct flight connections to Wuhan and there are indirect flight connections to other EU hubs. The upcoming Chinese New Year celebrations at the end of January will cause an increased volume of travel to/from China and within China, thus increasing the likelihood of possible cases arriving.

However, given that there is no indication of human-to-human transmission, the risk to travellers is considered to be low. For the same reason, and since no cases have been detected outside of Wuhan, the likelihood of introduction to the EU is considered to be low, but cannot be excluded. Consequently, the risk of further spread within the EU should a case be identified is considered low to very low.

Risk of nosocomial transmission, infection prevention and control: So far, no human-to-human transmission or spread to healthcare workers or medical personal has been reported in China. Therefore, the likelihood of nosocomial transmission is low.

Options for response

The information currently available on this cluster of cases with pneumonia, possibly associated with a novel coronavirus, is very limited. Options for response might change when more data become available.

Travellers planning to visit Wuhan should avoid visiting wet markets or places where live or dead animals and birds are handled. They are advised to adhere to good hand and food hygiene practices and avoid contact with animals, particularly poultry, their excretions or droppings. Travellers with respiratory symptoms returning from Wuhan or travelling in China and staying in Wuhan should seek medical attention and indicate their travel history to the healthcare specialist.

Due to the currently high activity of the seasonal influenza epidemic in China, travellers should receive seasonal influenza vaccination at least two weeks prior to travel to prevent severe disease, in line with the relevant national and international recommendations.

Based on the limited information available at the moment, standard infection prevention and control and appropriate hygiene measures might be sufficient if cases are identified in EU countries. Isolation of cases and use of appropriate personal protective measures following national recommendations will additionally minimise the risk of nosocomial transmission.

Healthcare providers should be aware of the ongoing event and the cluster of cases with pneumonia of unknown aetiology. The clinical signs and symptoms include fever and difficulty in breathing. Invasive lesions of both lungs have been identified from chest radiographs. Travellers returning from China having stayed in Wuhan and present with viral pneumonia of unknown aetiology should be identified and reported to the respective healthcare authorities as soon as possible.

The ongoing seasonal influenza epidemic in South-East Asia with high activity might increase the number of possible cases due to respiratory illness and pneumonia not related to the event. It is therefore important to further investigate patients with pneumonia and travel history to Wuhan, China and initiate diagnostic laboratory testing to rule out other respiratory pathogens as aetiological agent. No specific tests for this potentially new coronavirus are available. As verified detailed information on the causative agent is not available yet, the specificity and sensitivity of the routine laboratory diagnostic tests cannot be evaluated. Based on the information currently available, molecular diagnostic tests for the generic detection of coronaviruses would be able to detect this putative, novel coronavirus. According to the directory of the European laboratory network on emerging viral diseases (EVD-LabNet), within the network [28 laboratories](#) have the capacity and capability to perform generic coronavirus diagnostic tests. However, as the specificity and sensitivity of the tests are unknown in this context, laboratory results should be evaluated with special care. Positive test results must be verified (i.e. by nucleotide sequence determination), and in the event of certain negative test results, the use of general virus detection methods (i.e. metagenomic sequencing, microarray techniques, virus isolation and electron microscopy) should be taken into consideration. Laboratories without the capacity to perform generic coronavirus testing or obtaining inconsistent test results should approach European specialist laboratories with experience in coronavirus diagnostics. It is important to collect different types of specimens from suspected cases for diagnostic purposes. Early reporting of suspected cases to the public health authorities is crucial.

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Consulted experts

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