

THREAT ASSESSMENT BRIEF

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 in the concerned market, which was closed to the public on 1 January 2020. Preliminary investigations suggested viral pneumonia, meanwhile analyses in order to identify the pathogen were carried out. According to the Chinese authorities, no significant human-to-human transmission has been observed. No cases among health care workers have been reported.

By 5 January 2020, [Chinese authorities](#) reported 32 additional pneumonia cases of unknown aetiology in Wuhan of which dates of onset range from 12 to 29 December 2019. This adds up to 59 cases of which seven are severely ill. Contact tracing activities identified 163 close contacts. Laboratory investigations 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 was completed, and further hygiene investigations are ongoing.

Due to direct transport links to Wuhan, the Hong Kong Special Administrative Region (SAR) has initiated an enhanced monitoring of cases with unexplained pneumonia in hospitals. No cases related to the Wuhan cluster have been reported by the health authorities in Hong Kong SAR to-date. The authorities published [a list](#) of suspected cases following the enhanced surveillance, 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 support the enhanced surveillance.

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

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On 5 January 2020, the World Health Organization (WHO) published a [Disease outbreak news](#) item summarising the information as of 3 January 2020. The available data are considered “limited 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 on China.

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 health care practitioners to be aware of the cluster of pneumonia cases. On 8 January 2020, the US CDC also informed through the [Health Alert Network](#) (HAN) Advisory about the cluster of cases with unknown pneumonia. Health care providers should consider patients with severe respiratory symptoms who travelled to Wuhan since December 1, 2019 and had onset of illness within two weeks of returning, and who do not have another known diagnosis as cluster-related cases. The collection of different respiratory specimens as well as specimens from urine, stool, and serum, , should be collected from such patients. The US CDC recommends that “symptomatic patients... to wear a surgical mask as soon as they are identified and be evaluated in a private room with the door closed.” According to CDC, health care providers should use contact precautions and wear an N95 disposable face piece respirator while evaluating the patient. For patients admitted for inpatient care, contact and airborne isolation precautions, in addition to standard precautions are recommended, although no evidence of human-to-human transmission has been reported.

Another [media report](#) interviewing the 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 the report of [XINHUA](#), the official press agency of China, reporting the detection of a new coronavirus.

The [WHO Regional office for the Western Pacific](#) 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 (the United Kingdom) with three weekly flights and Rome (Italy) with five weekly flights. Authorities in the concerned countries remain vigilant and closely monitor the situation. Among these countries, Italy has establish enhanced surveillance on the incoming flights from Wuhan, China and the United Kingdom has informed the health care providers and will publish travel advice to the general public.

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

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Chinese authorities 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 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. No cases belonging to the cluster in Wuhan have been identified outside of Wuhan to date and no suspected or possible cases with unknown pneumonia and travel-relation 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 suspected place of exposure, which could indicate an exposure link to animals. Although the Seafood Market has now been closed and disinfected, the respective 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 uncertainty to the following assessment.

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 travel volume to/from China and within China, hence increasing the likelihood of arrival of possible cases.

However, considering there is no indication of human-to-human transmission, the risk to travellers is considered to be low. For the same reason and as 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 health care workers or medical personal has been reported in China. Therefore, the likelihood of nosocomial transmission is low.

Options for response

The currently available information about 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, and avoid contact with animals, particularly with poultry, their excretions or droppings. Travellers with respiratory symptoms returning from Wuhan or travelling in China with stay in Wuhan should seek medical attention and indicate their travel history to Wuhan to the health care 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, along the lines of 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 were identified in EU countries. Isolation of cases and appropriate personal protective measures following the national recommendations will additionally minimise the risk of **nosocomial transmission**.

Health care providers should be aware of the ongoing event with cluster of cases with pneumonia of unknown aetiology. The clinical signs and symptoms include mainly fever and difficulty in breathing. Invasive lesions of both lungs were identified from chest radiographs. Travellers returning from China with stay in Wuhan and viral pneumonia of unknown aetiology should be identified and reported to the respective health care authorities as soon as possible.

The ongoing seasonal influenza epidemic in Southeast 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 currently available information, 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 case 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 capacity to perform generic coronavirus testing, or having 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

ECDC experts (in alphabetic order): Cornelia Adlhoch, Tamas Bakonyi, Sergio Brusin, Celine Gossner, Thomas Mollet, Teymur Noori, Jordi Borrell Pique.

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