ECDC INTERNAL DOCUMENT

Communication

ECDC lines-to-take:

Novel coronavirus, China, 2019-nCoV

Last update: 21 January 2020

Background

Following first reports of a cluster of pneumonia cases in the Chinese Wuhan municipality at the end of December 2019, Chinese authorities identified a as causative agent a new coronavirus which is genetically related to SARS-CoV and MERS-CoV at beginning of 2020.

To date, almost 500 human infections in China as well as exported cases in Thailand, Japan, South Korea and the United States have been confirmed. The outbreak in Wuhan has initially been linked to a large seafood and animal market, suggesting a possible zoonotic origin to the outbreak.

However, so far the source of infection remains unknown and can therefore still be active, which could lead to further cases being detected. The outbreak investigations are on-going and in this rapidly evolving context, ECDC will provide updated guidance and information as it becomes available.

Key Messages

- The developments observed over the last few days, highlight that this novel coronavirus potentially originates impactful localised outbreaks in healthcare and other settings. Further global spread is likely.

- From what ECDC, national and international agencies are currently know, the outbreak is caused by a novel coronavirus. There are still many unknowns regarding to the virulence and pathogenicity of the virus, the severity of affected patients, transmission patterns, reservoir and source of infection. Epidemiological analyses available to date are also limited which leads to many uncertainties on the characteristics and the dynamic of the outbreak.

- ECDC is monitoring this event through epidemic intelligence activities, and provides risk assessments to support EU Member States and the EU Commission in their response activities. At this stage, we think further global spread is likely and that there is a high likelihood that cases might be imported into neighbouring countries with a high volume of people travelling to and from Wuhan.

- On 20 January 2020, health authorities in China confirmed human-to-human transmission of this virus, including to a number of healthcare workers.

- The upcoming Chinese New Year celebrations at the end of January will lead to increased travel to/from China and within China. With that, the likelihood of people infected with 2019-nCoV infection in the EU/EEA also increases.

- The likelihood of infection for travellers visiting Wuhan having close contact with symptomatic individuals is currently considered as moderate, the same as for importation of cases to the EU/EEA.

  Outbreak investigations are on-going and while this is a rapidly evolving situation, ECDC will provide guidance and updated information in its website as it becomes available.

Questions and answers

Q. What can we say about this new virus and related outbreak at this stage?

A. From what ECDC, national and international agencies currently know, the outbreak is caused by a novel coronavirus. There are still many unknowns regarding to the virulence and pathogenicity of the virus, the severity of affected patients, its transmission patterns, reservoir and source of infection. Epidemiological analyses available to date are also limited which leads to many uncertainties on the characteristics and the dynamic of the outbreak.

Coronaviruses were identified in the mid-60s and are known to infect humans and a variety of animals (including birds and mammals). This family of viruses are known to cause illness in humans ranging from the common cold to more severe or even fatal diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).

Previous severe coronavirus-associated diseases such as SARS and MERS have been less transmissible than influenza but they have been prone large localised and nosocomial outbreaks. The mortality rate for SARS and MERS-CoV infections have also been much higher than for influenza infections.

There is currently limited information about the epidemiological and clinical characteristics of the infection caused by 2019-nCoV. Although the data available to ECDC is currently very scarce (see e.g. open source platform nextstrain.org which visualises pholygenetic analysis and relation between the nCoV and SARS and other beta-coronaviruses). This novel coronavirus seems genetically closely related to the 2003 SARS virus and appears to have similar epidemiological characteristics

There are currently no vaccines against coronaviruses.

Q. What are the symptoms and treatment options?

A. Even if severe and fatal infections have also been observed, human infections with common coronaviruses are mostly mild and asymptomatic, resembling those of a common cold (cough, fever, runny nose, etc.). These viruses are able to cause lower respiratory tract infections and pneumonia in humans.

There is not specific treatment for this disease so the clinical approach is symptomatic-based on the patient's clinical condition. Moreover, supportive care (e.g. supportive therapy and monitoring – oxygen therapy, fluid management, empiric antimicrobials) for infected persons can be highly effective.

Q. What about human-to-human transmission?

A. Authorities in China confirmed human-to-human transmission of this virus on 20 January 2020, including to a number of healthcare workers. The infection was confirmed, with 14 medical staff who provided medical care to patients with new coronavirus. Further evidence of human-to-human transmission, is based on the fact that none of the cases detected outside of China have apparent direct exposure to the Wuhan Huanan seafood market.

Due lack of available epidemiological data ECDC is unable to assess the extent of this human-to-human transmission. However, we expect numbers of cases and deaths in China to increase over the coming days. Following the use of new laboratory tests in contact tracing cases have started to be reported from outside Wuhan.

Q. What is the risk of this outbreak spreading further?

A. Currently four countries have reported cases and further global spread is likely. Without implementation of appropriate infection prevention and control (IPC) measures at the point of care of persons under investigation, there is a moderate likelihood of outbreaks in destination countries. In the past, systematic implementation of infection prevention and control measures were effective in controlling both SARS-CoV and MERS-CoV.

The likelihood of importation of cases of 2019-nCoV to the EU/EEA by travellers from Wuhan is considered to be moderate and could be influenced by implementation of exit screening by the local authorities in Wuhan.

Current evidence on human-to-human transmission and the report of infections among healthcare workers in Wuhan, reinforces the recommendation for rigorous compliance with IPC measures, as specified in the WHO interim guidance. Those measures include placement of suspected and confirmed cases in single rooms, implementation of contact and droplet precautions, and airborne precautions when performing aerosol generating procedures or interventions.

Q. What if the virus comes to Europe?

A. In light of the current knowledge and the number of unknown factors, ECDC considers that there is currently a moderate likelihood of infection for EU/EEA travellers visiting Wuhan, and also a moderate likelihood of detecting imported cases in Europe, particularly in light of the Chinese New Year festivities which might lead to increased travel.

Assuming limited human-to-human transmission and that timely and rigorous infection prevention and control measures (IPC) are applied around potential imported cases detected in the EU/EEA, the likelihood of further spread in community settings is considered very low.

However, both SARS-CoV and MERS-CoV have been linked to nosocomial outbreaks or super-spreading events, therefore strict infection prevention and control should be applied for the management of persons under investigation and confirmed cases.

The impact of an imported case of 2019-nCoV in an EU/EEA country without the application of appropriate IPC measures is potentially high, therefore the risk of such a scenario is estimated to be high.

Q. How does ECDC assess the risk?

A. The initial assessments of infectious disease threats such as 2019-nCov usually are complex and challenging as they are produced when information is often limited and circumstances can evolve rapidly. However, rapid risk assessments should still be based on the structured identification of key information from all readily available sources at the time in order to provide a clear estimate of the scale of the health threat while documenting the level of uncertainty.

This uncertainty is documented and managed in the algorithms by adopting a precautionary approach, a proportionality principle and moving through the algorithm to a higher level of risk.

ECDC's approach uses three separate algorithms (the probability of infection in the EU, the probability of infection of EU citizens outside the EU and the likely impact) of infection together with a risk ranking matrix (low, moderate, high) to produce an overall risk level.

You can find detailed information about our risk assessment methodology here: https://www.ecdc.europa.eu/sites/portal/files/documents/operational-tool-rapid-risk-assessment-methodolgy-ecdc-2019.pdf

Q. What is ECDCs role in this outbreak?

A. ECDC is monitoring this event through epidemic intelligence activities, and provides risk assessments to guide EU Member States and the EU Commission in their response activities.

Some brief overview:

- ECDC has developed a guidance on how to identify suspected cases and when to initiate testing.
- Case definitions for the European Region are currently under development by ECDC and WHO Regional Office for Europe.
- There are no specific guidelines for assessing the risk of 2019-nCoV transmission during a flight. However, ECDC just published a RAGIDA (Risk assessment guidelines for Infectious diseases transmitted on aircraft) - Middle East Respiratory Syndrome Coronavirus (MERS-CoV) which recommendations can be applied for 2019-nCoV.
- Working on mathematical modelling to support the prediction of certain scenarios of the evolution of the outbreak.
- Level of preparedness in Member States facing possible imported cases.

The outbreak investigations are on-going and ECDC will provide updated guidance and information as it becomes available.

Risk assessments published:
https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-cluster-pneumonia-cases-caused-novel-coronavirus-wuhan (17 January)
https://www.ecdc.europa.eu/en/publications-data/pneumonia-cases-possibly-associated-novel-coronavirus-wuhan-china (9 January)

All relevant documents and epi updates are published on the related outbreak page:
https://www.ecdc.europa.eu/en/novel-coronavirus-china

Q. What is the role of the EWRS?

A. The Early Warning and Response System (EWRS) allows EU countries to send alerts, to share information and to coordinate response on events with a potential impact on the EU,. In this context, EWRS has been used to share response measures implemented at national level by EU Member States.
https://www.ecdc.europa.eu/en/early-warning-and-response-system-ewrs

Q. What is the role of other actors?

A. Chinese health authorities are driving the investigations of this outbreak, while WHO monitors the situation at global level and is working in close cooperation with officials in China and Thailand.

Q. How can one promptly prove or exclude human-to-human transmission?

A. A rapid outbreak investigation describing the likely time, and place of infection with characteristics of each case together with the characteristics of the circulating pathogen will help to understand how people are infected. However, there are still many unknowns about this outbreak, introducing a high level of uncertainty.

More information is urgently needed to evaluate the full extent of the mode of transmission in this outbreak. Further research is currently underway combining clinical and epidemiological data.

Q. Is there a risk that the virus can mutate?

A. This is always a possibility, but so far the information about the virus is quite scarce so it is hard to make any predictions.

Q. What precautions should be taken?

A. **EU/EEA countries** should review procedures for informing incoming and outgoing passengers from/to Wuhan, China of the situation around 2019-nCoV at their Points of Entry (PoE), particularly in countries where there are direct flights, along the national procedures for contact tracing and contact follow up for at least 14 days.

In addition, Member States are urged to review their procedures for in-country transportation, isolation and management of high consequence infectious disease cases, including staffing and laboratory support.

To help prevent coronavirus infection, usual precaution should be adhered to such as exercising good hand and food hygiene and avoiding contact with infected persons.

Travellers planning to visit Wuhan e.g. for the Chinese New Year celebrations should be advised to avoid visiting wet markets or places where live or dead animals are handled and to avoid contact with sick persons, in particular with respiratory symptoms. They should also adhere to good hand and food hygiene, and avoid contact with animals, their excretions or droppings.

Travellers with acute respiratory symptoms returning from Wuhan or travelling in China with a scheduled stay in Wuhan, should be advised to seek medical attention and indicate their travel history to Wuhan to the healthcare specialist. Member States may consider guiding these cases to a particular call centre or a particular healthcare facility, according to their planning. National authorities in China are advising against non-essential travel to Wuhan.

In addition, 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 influenza disease, in accordance with the respective national recommendations.

Q. Are the Chinese authorities handling this well?

A. Until now, the Chinese authorities have shared information on the virus quickly, and about confirmed cases including public statements on the situation every few days. ECDC is also in regular contact with the China CDC.

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