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Guidance

COVID-19: epidemiology, virology and clinical features

Updated 13 April 2020

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Latest updates to this information

13 April: updated with latest global case numbers

1. Epidemiology

On 31 December 2019, the World Health Organization ([WHO](http://www.who.int)) was informed of a cluster of cases of pneumonia of unknown cause (<http://www.who.int/csr/don/05-january-2020-pneumonia-of-unknown-cause-china/en/>) detected in Wuhan City, Hubei Province, China.

On 12 January 2020 (<http://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/>) it was announced that a novel coronavirus had been identified in samples obtained from cases and that initial analysis of virus genetic sequences suggested that this was the cause of the outbreak. This virus is referred to as [SARS-CoV-2](https://www.biorxiv.org/content/10.1101/2020.02.07.937862v1) (<https://www.biorxiv.org/content/10.1101/2020.02.07.937862v1>), and the associated disease as [COVID-19](#).

As of 13 April 2020 (10:00am CET), more than 1.80 million cases have been diagnosed globally, with over 113,000 fatalities. In the 15 days to 13 April, over 1.09 million cases were reported (European Centre for Disease Prevention and Control, situation update worldwide (<https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases/>)).

The [WHO](https://who.sprinklr.com/) coronavirus dashboard (<https://who.sprinklr.com/>) has country by country information. [WHO](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/) also publishes a daily international situation report (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>).

The total number of confirmed cases in the UK (<https://www.gov.uk/guidance/coronavirus-covid-19-information-for-the-public>) is published by the Department of Health and Social Care, and is available in a visual dashboard (<https://www.gov.uk/government/publications/covid-19-track-coronavirus-cases>).

2. Virology

Coronaviruses are a large family of viruses with some causing less-severe disease, such as the common cold, and others causing more severe disease such as Middle East respiratory syndrome ([MERS](#)) and Severe Acute Respiratory Syndrome ([SARS](#)) coronaviruses.

2.1 Nomenclature and characterisation

On 11 February, [WHO](https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020) (<https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020>) named the syndrome caused by this novel coronavirus [COVID-19](#) (<https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020>) (Coronavirus Disease 2019) using its best practice guidance (https://www.who.int/topics/infectious_diseases/naming-new-diseases/en/).

The Coronavirus Study Group (CSG) of the International Committee on Taxonomy of Viruses (<https://www.biorxiv.org/content/10.1101/2020.02.07.937862v1>) has designated the aetiological agent 'severe acute respiratory syndrome coronavirus 2' ([SARS-CoV-2](#)). Characterisation of [SARS-CoV-2](#) is ongoing. Initial information shared by China and [WHO](https://www.who.int) indicates that [SARS-CoV-2](#) is a beta-coronavirus that is genetically similar to [SARS](#)-like coronaviruses obtained from bats in Asia.

3. Transmission

The source of the outbreak has yet to be determined. Preliminary investigations in China in January 2020 identified environmental samples positive for SARS-CoV-2 in Huanan Seafood Wholesale Market in Wuhan City, however, some laboratory-confirmed patients did not report visiting this market. A zoonotic source to the outbreak has not been identified yet, but investigations are ongoing.

According to current evidence, the COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes.

Human-to-human transmission is occurring extensively. Hence, precautions to prevent human-to-human transmission are appropriate for both suspected and confirmed cases (see infection prevention and control guidance (<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>)).

In addition to respiratory secretions, SARS-CoV-2 has been detected in blood, faeces and urine.

In the context of COVID-19, airborne transmission may be possible in specific circumstances and settings in which procedures or support treatments that generate aerosols are performed.

4. Clinical features

Fever, cough or chest tightness, myalgia, fatigue and dyspnoea are the main symptoms reported.

A variety of abnormalities may be expected on chest radiographs, but bilateral lung infiltrates appear to be common (similar to what is seen with other types of viral pneumonia).

Public Health England has issued guidance on the investigation and initial clinical management of possible cases (<https://www.gov.uk/government/publications/wuhan-novel-coronavirus-initial-investigation-of-possible-cases>).