2019-nCoV – update 4th February 2020

Date: Tuesday 4th February 2020
Sources: Several, see list below

The number of new cases continue to increase with 2,825 new cases in China reported the 2nd to the 3rd February bring the total reported case count in China to 17,205 with 362 deaths and 181 international cases.

On the basis of current available data, the main driver of transmission of 2019-nCoV is represented by symptomatic cases (1). Even though uncommon, nCoV transmission from asymptomatic person and virus has been found in recovering patients (2). The fact that asymptomatic persons are potential sources of 2019-nCoV infection may warrant a reassessment of transmission dynamics of the current outbreak. In this context, the detection of 2019-nCoV and a high sputum viral load in a convalescent patient (Patient 1) arouse concern about prolonged shedding of 2019-nCoV after recovery.

Infection prevention and control for the care of patients with 2019-nCoV in healthcare settings, ECDC 2 February 2002 (3)

This document aims to provide guidance to EU/EEA healthcare facilities and healthcare providers on infection prevention and control measures during the management of suspected and confirmed cases of 2019-nCoV infection.

Case definition and European surveillance for human infection with novel coronavirus (2019-nCoV) (4)

ECDC document with the ECDC case definition for surveillance and criteria for testing.

Sustained human to human transmission since middle of December (5)

A study of 425 patients with confirmed nCoV pneumonia found that the majority of cases (55%) with onset before January 1, 2020, were linked to the Huanan Seafood Wholesale Market, as compared with 8.6% of the subsequent cases.

The mean incubation period was 5.2 days (95% confidence interval [CI], 4.1 to 7.0), with the 95th percentile of the distribution at 12.5 days.

R₀ estimate (6)

The study estimated the basic reproduction number R₀ of 2019-nCoV to be around 2.2 (90% high density interval: 1.4–3.8), indicating the potential for sustained human-to-human transmission. Transmission characteristics appear to be of similar magnitude to severe acute respiratory syndrome-related coronavirus (SARS-CoV) and pandemic influenza, indicating a risk of global spread.

Travel ban in Wuhan delayed spread by 2.9 days (7)

By combining epidemiological and human mobility data we find that the travel ban slowed the dispersal of nCoV from Wuhan to other cities in China by 2.91 days (95% CI: 2.54-3.29).

Modelling predict peak of the epidemic the 3rd week of March (8)
The model assumes a population attack rate of 3% and models the effect of different degrees of mobility reductions and transmissibility.

Sources

1. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200201-sitrep-12-ncov.pdf?sfvrsn=273c5d35_2


In the literature

https://jvi.asm.org/content/early/2020/01/23/JVI.00127-20

First Case of 2019 Novel Coronavirus in the United States
DOI: 10.1056/NEJMoa2001191.

Emerging Understandings of 2019-nCoV
Editorial. The Lancet 2020;395<.311. 1st Feb. 2020
PMID: 31986259 DOI: 10.1016/S0140-6736(20)30186-0

Full-genome Evolutionary Analysis of the Novel Corona Virus (2019-nCoV) Rejects the Hypothesis of Emergence as a Result of a Recent Recombination Event

Emerging Respiratory and Novel Coronavirus 2012 Infections and Mass Gatherings

A pneumonia outbreak associated with a new coronavirus of probable bat origin.

EITaF comment

The numbers continue to increase in China and internationally. More and more countries impose travel restrictions and airlines suspend flights to and from China.

The reason for these unprecedented measures is that we have a new virus never seen in humans before, the outbreak is evolving and we just learned that people are infectious in the incubation period and continue to be PCR pos. after recovery. Thus, there is no doubt that sustained human-to-human transmission is the main driver of the outbreak.

With only 181 international cases (as reported the 3rd February) international spread is still limited and gives us time to refresh our health care personnel on personal protection equipment (PPE), and infection control and prevention (IPC) routines.

It is important to realize that the 2019-nCoV has a very different epidemiology with sustained person-to-person transmission in the community with limited number of nosocomial cases. The daily number of new cases also far exceeds what we saw for SARS
and see for MERS.

The SARS outbreak never infected the number of people so rapidly as we see here. The peak number was 140 new cases in one week and 58% of the cases were nosocomial (A Novel Coronavirus Emerging in China - Key Questions for Impact Assessment. Munster VJ et al. N Engl J Med 2020 Jan 24).

MERS does not have an $R_0$ able to become epidemic in a wider scale except in very crowded settings, demonstrated in the outbreak in South Korea. 70% of MERS cases are nosocomial (Munster VJ et al. N Engl J Med 2020 Jan 24) and the number of cases since 2012 most probably represent repeated introductions into humans from camels.

Will it become a pandemic?

Probably, but the current fatality rate of 2% is most probably an overestimation based on hospitalised cases alone. We can hope that it will be at the level of the 2009 H1N1 pandemic.

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