

Current understanding of COVID-19 compared with NSRA Pandemic Influenza planning assumptions

SAGE secretariat

<b>1<sup>st</sup> Order Assumptions</b>	<b>Pan Flu reasonable worst case, including confidence intervals where possible. Source: 2019 NSRA, which uses 2016 population estimate.</b>	<b>COVID-19 key conclusions of SAGE to date, based on a 2016 UK population Source: 2019 NSRA, which uses 2016 population estimate.</b>
<b>Basic Reproductive Rate (R<sub>0</sub>)</b>	No number included in planning assumptions	(Number of secondary cases generated on average by one primary case. Suppression of an outbreak requires R to be sustained below 1)  Estimated 2-3 in Wuhan. Unknown in other Chinese regions and internationally
<b>Doubling Time</b>	No number included in planning assumptions	(Time required for the number of cases to double) 4-5 days in China
<b>Incubation period</b>	Short incubation period – 1-3 days	(Time between exposure to infection and symptom onset) Range remains 1 to 14 days, with average of 4-5 days
<b>Duration of Illness</b>	Assumes normal flu profile – most people back to normal activities in 7-10days	From symptom onset to hospitalisation: average of 7 days. From onset of illness to discharge from hospital: average of 23 days but may include avoidable delay in discharge. (From onset of illness to death). Average of 22 days for severe cases, but large variation around this. Longest time so far appears to be 41 days.
<b>Duration of infectivity</b>	Adults are infectious for up to five days from the onset of symptoms. Longer periods have been found, particularly in those who are immunosuppressed. Children may be infectious for up to seven days. Some people can be infected, develop immunity, and have minimal or no symptoms but may still be able to pass on the virus.	Duration of infectivity likely to vary depending on severity of individual cases. 14 days as upper limit. Peak infectivity is probably around the start of symptom onset, average 2-6 days, then falling off rapidly.
<b>Transmission</b>	Sustained human-to-human transmission.  Around a third of infected people are asymptomatic.	Current understanding is that the transmission route is respiratory and via contact. This means that viruses are transmitted via touching an infected person and spray of droplets such as coughing and sneezing. Human-to-human transmission outside China has occurred but there is as yet no definitive evidence of a sustained outbreak/epidemic elsewhere. Asymptomatic transmission cannot be ruled out and transmission from mildly symptomatic individuals is likely.
<b>Case Fatality Rate (CFR) (symptomatic cases)</b>	2.5%	(The proportion of deaths within a designated population due to an epidemiological outbreak). Uncertain but planning on the assumption 2-3%

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