



The following information resources have been selected by the National Health Library and Knowledge Service Evidence Virtual Team in response to a request to collate the best available evidence and guidance on the following question: what is the incubation period for COVID-19? The resources are listed in our estimated order of relevance to practicing healthcare professionals confronted with this scenario in an Irish context. In respect of the evolving global situation and rapidly changing evidence base, the Evidence Team has provided link-outs to continually updating sources of information rather than prescriptive or static statements of evidence; it is therefore advised to use the hyperlinks in this document to ensure that the information you are disseminating to the public is the most current, valid and accurate.

## BMJ Best Practice

### [COVID-19: Aetiology and Pathophysiology](#)

Current estimates of the incubation period range from 1 to 14 days, according to the World Health Organization<sup>1</sup> and the US Centers for Disease Control and Prevention.<sup>2</sup> The median incubation period has been estimated to be 5 days.<sup>3</sup> Transmission may be possible during the incubation period.<sup>4</sup>

## Primary Research

### [Lauer et al. Incubation Period of Coronavirus Disease 2019 from Publicly Reported Confirmed Cases: Estimation and Application](#)<sup>5</sup>

**Results:** There were 181 confirmed cases with identifiable exposure and symptom onset windows to estimate the incubation period of COVID-19. The median incubation period was estimated to be 5.1 days (95% CI, 4.5 to 5.8 days), and 97.5% of those who develop symptoms will do so within 11.5 days (CI, 8.2 to 15.6 days) of infection. These estimates imply that, under conservative assumptions, 101 out of every 10,000 cases (99th percentile, 482) will develop symptoms after 14 days of active monitoring or quarantine.

**Limitation:** Publicly reported cases may over-represent severe cases, the incubation period for which may differ from that of mild cases.

**Conclusion:** This work provides additional evidence for a median incubation period for COVID-19 of approximately 5 days, similar to SARS. Our results support current proposals for the length of quarantine or active monitoring of persons potentially exposed to SARS-CoV-2, although longer monitoring periods might be justified in extreme cases.

<sup>1</sup> World Health Organization. Novel coronavirus (2019-nCoV) situation report - 6. January 2020 [internet publication]. <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200126-sitrep-6-2019--ncov.pdf>

<sup>2</sup> Centers for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19): symptoms. February 2020 [internet publication]. <https://www.cdc.gov/coronavirus/2019-ncov/about/symptoms.html>

<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pubmed/31995857>.

<sup>4</sup> <https://www.ncbi.nlm.nih.gov/pubmed/32067043>.

<sup>5</sup> <https://www.ncbi.nlm.nih.gov/pubmed/32150748>.



### [Linton et al. Incubation Period and Other Epidemiological Characteristics of 2019 Novel Coronavirus Infections](#)<sup>6</sup>

**Abstract:** The geographic spread of 2019 novel coronavirus (COVID-19) infections from the epicentre of Wuhan, China, has provided an opportunity to study the natural history of the recently emerged virus. Using publicly available event-date data from the ongoing epidemic, the present study investigated the incubation period and other time intervals that govern the epidemiological dynamics of COVID-19 infections. Our results show that the incubation period falls within the range of 2–14 days with 95% confidence and has a mean of around 5 days when approximated using the best-fit lognormal distribution. The mean time from illness onset to hospital admission for treatment and/or isolation was estimated at 3–4 days without truncation and at 5–9 days when right truncated. Based on the 95th percentile estimate of the incubation period, we recommend that the length of quarantine should be at least 14 days. The median time delay of 13 days from illness onset to death [17 days with right truncation] should be considered when estimating the COVID-19 case fatality risk.

### [Backer et al. Incubation Period of 2019 Novel Coronavirus \(2019-nCoV\) Infections among Travellers from Wuhan, China](#)<sup>7</sup>

Using the travel history and symptom onset of 88 confirmed cases that were detected outside Wuhan in the early outbreak phase, we estimate the mean incubation period to be 6.4 days (95% credible interval: 5.6–7.7), ranging from 2.1 to 11.1 days (2.5th to 97.5th percentile). These values should help inform 2019-nCoV case definitions and appropriate quarantine durations.

Produced by the members of the National Health Library and Knowledge Service Evidence Team.<sup>†</sup> Current as at 12 March 2020. This evidence summary collates the best available evidence at the time of writing. Emerging literature or subsequent developments in respect of COVID-19 may require amendment to the information or sources listed in the document. Although all reasonable care has been taken in the compilation of content, the National Health Library and Knowledge Service Evidence Team makes no representations or warranties expressed or implied as to the accuracy or suitability of the information or sources listed in the document. This evidence summary is the property of the National Health Library and Knowledge Service and subsequent re-use or distribution in whole or in part should include acknowledgement of the service.

<sup>6</sup> <https://www.ncbi.nlm.nih.gov/pubmed/32079150>.

<sup>7</sup> <https://www.ncbi.nlm.nih.gov/pubmed/32046819>.



The following PICO(T) was used as a basis for the evidence summary:

	COVID-19 incubation period
	Optimal patient outcome. Containment of infection. Length of hospital stay

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