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Nosocomial outbreak of COVID-19 pneumonia in Wuhan, China

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SARS-CoV-2 can be rapidly transmitted from person to person in nosocomial and social settings, despite patients having no symptoms <https://bit.ly/34BHtB5>

Cite this article as: Wang X, Zhou Q, He Y, *et al.* Nosocomial outbreak of COVID-19 pneumonia in Wuhan, China. *Eur Respir J* 2020; 55: 2000544 [<https://doi.org/10.1183/13993003.00544-2020>].

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ABSTRACT

Background: The novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), infected over 3300 healthcare workers in early 2020 in China. Little information is known about nosocomial infections of healthcare workers in the initial period. We analysed data from healthcare workers with nosocomial infections in Wuhan Union Hospital (Wuhan, China) and their family members.

Methods: We collected and analysed data on exposure history, illness timelines and epidemiological characteristics from 25 healthcare workers with laboratory-confirmed coronavirus disease 2019 (COVID-19) and two healthcare workers in whom COVID-19 was highly suspected, as well as 10 of their family members with COVID-19, between 5 January and 12 February 2020. The demographics and clinical features of the 35 laboratory-confirmed cases were investigated and viral RNA of 12 cases was sequenced and analysed.

Results: Nine clusters were found among the patients. All patients showed mild to moderate clinical manifestation and recovered without deterioration. The mean period of incubation was 4.5 days, the mean±SD clinical onset serial interval (COSI) was 5.2±3.2 days, and the median virus shedding time was 18.5 days. Complete genomic sequences of 12 different coronavirus strains demonstrated that the viral

structure, with small irrelevant mutations, was stable in the transmission chains and showed remarkable traits of infectious traceability.

Conclusions: SARS-CoV-2 can be rapidly transmitted from person to person, regardless of whether they have symptoms, in both hospital settings and social activities, based on the short period of incubation and COSI. The public health service should take practical measures to curb the spread, including isolation of cases, tracing close contacts, and containment of severe epidemic areas. Besides this, healthcare workers should be alert during the epidemic and self-quarantine if self-suspected of infection.