

A family cluster of SARS-CoV-2 infection involving 11 patients in Nanjing, China

Human infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has become a global health concern.^{1,2} Currently, human-to-human transmission of the virus accounts for most infections worldwide.³ We report a family cluster of SARS-CoV-2 infection involving 11 patients in Nanjing, China.

The detailed timeline of exposure for the 11 confirmed patients is presented in the appendix 2. The index patient travelled to Nanjing on Jan 21, 2020, from Xiaogan (about 70 km from Wuhan), and switched trains in Wuhan. After arriving in Nanjing, she stayed with two of her sisters (patients 1 and 2) and her mother (patient 3) at their family home. She had a family dinner with her mother, two sisters, and her brother (patient 4) on Jan 21. The index patient had another family dinner with eight

relatives on Jan 23. She had been well without any symptoms of infection but started to have a fever and cough on Jan 28. She went to Zhejiang on Jan 24, where she tested positive for SARS-CoV-2 infection on Jan 29. No one in the family cluster had travelled to Wuhan in the previous 2 weeks except for the index patient. Three patients (patients 1–3) who lived together with the index patient and three relatives (patients 4, 6, and 7) who attended the dinner with the index patient on Jan 23 were positive for SARS-CoV-2 infection thereafter. Furthermore, patient 5 who lived with patient 4 and had no direct contact with the index patient was diagnosed with SARS-CoV-2 infection on Jan 30. On Jan 24, two patients (patients 6 and 7) who had been well without any symptoms attended another family dinner with 13 relatives. Three of the relatives (patients 8–10) were diagnosed with SARS-CoV-2 infection within 2 weeks.

Human-to-human transmission can occur among close contacts of SARS-CoV-2.³ However, the family

cluster of patients we describe provides evidence that asymptomatic people can be potential sources of SARS-CoV-2 infection.

We obtained written informed consent from the patients and the case study was approved by the institutional ethics board of our hospital (Nanjing Drum Tower Hospital, The Affiliated Hospital of Nanjing University Medical School). We declare no competing interests.

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- 2 Gorbalenya AE, Baker SC, Baric RS, et al. Severe acute respiratory syndrome-related coronavirus: the species and its viruses—a statement of the Coronavirus Study Group. *bioRxiv* 2020; published online Feb 11. DOI:10.1101/2020.02.07.937862.
- 3 Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med* 2020; published online Jan 29. DOI:10.1056/NEJMoa2001316.



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For the Chinese translation of the abstract see Online for appendix 1

See Online for appendix 2