Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

2 Zhibin H, Song C. Screening and management of asymptomatic infection of corona virus disease 2019 (COVID-19). *Chin J Prev Med* 2020; published online March 9. DOI:10.3760/cma.j.cn112150-20200229-00220.
3 Fernandez-Antoran D, Piedrafita G, Murai K, et al. Outcompeting p53-mutant cells in the normal esophagus by redox manipulation. *Cell Stem Cell* 2019; **25:** 329–41.
4 Bi Q, Wu Y, Mei S, et al. Epidemiology and transmission of COVID-19 in Shenzhen China: analysis of 391 cases and 1286 of their close contacts. *medRxiv* 2020; published online March 4. DOI:10.1101/2020.03.03.20028423 (preprint).
5 Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. *Zhonghua Liu Xing Bing Xue Za Zhi* 2020; **41:** 145–51 (in Chinese).

Authors' reply

We appreciate the concerns raised by Yongshun Huang and colleagues regarding our Article[1] on radiological findings in coronavirus disease 2019 (COVID-19). During the outbreak of COVID-19 in China in January, and February, 2020, timely diagnosis was a crucial step for infection control, especially in the epidemic area of Wuhan, Hubei province. However, RT-PCR kits were not sufficiently provided to hospitals in Wuhan until Jan 16, 2020. Before then, there was less capacity of kits to meet the rapidly increasing clinical demand. Furthermore, the total positive rate of RT-PCR for throat swab samples was reported to be less than 60%.[2] The diagnostic sensitivity of viral pneumonia by chest radiography was relatively low,[3] whereas CT had a high sensitivity for diagnosis of COVID-19, making it a potential primary tool for COVID-19 detection in epidemic areas.[2] Additionally, according to the guideline for diagnosis and treatment of COVID-19 by the Chinese Ministry of Health (fifth trial edition),[4] clinically suspected cases in Hubei province were mainly those with imaging features consistent with pneumonia.

We agree that there should be clear criteria for CT use in diagnosis of COVID-19. In fact, we do not recommend CT for screening or early diagnosis in all areas or for all populations. In our study, group 1 (preclinical) included health-care workers (ten nurses and five physicians) from two hospitals in Wuhan, who were on the frontline during the outbreak peak. All 15 participants had close contact with confirmed cases and willingly underwent CT scanning as a screening measure. Our Article retrospectively included this group, mainly to illustrate the imaging findings in the subclinical phase, which might also be incidentally found in patients who are imaged for other reasons. Based on this discovery in an epidemic area, we have proposed the potential role of CT in asymptomatic high-risk individuals with a history of exposure to COVID-19 patients in epidemic areas. Compared with another recent publication,[5] the discrepancy in CT positive rates might be attributed to variable sample sizes, different demographic features, and potential retrospective selection bias.

In the epidemic area, all CT scans were done in accordance with strict infection control protocol to avoid cross-infection. We agree that use of CT for screening or diagnosis has a disproportionate risk–benefit ratio. Fortunately, under well controlled epidemic conditions in Wuhan, the RT-PCR assay or severe acute respiratory syndrome coronavirus 2 antibody test are the first choices for screening for COVID-19 at present.

We declare no competing interests.

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1 Shi H, Han X, Jiang N, et al. Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. *Lancet Infect Dis* 2020; published online Feb 24. https://doi.org/10.1016/S1473-3099(20)30086-4.
2 Ai T, Yang Z, Hou H, et al. Correlation of chest CT and RT-PCR testing in coronavirus disease 2019 (COVID-19) in China: a report of 1014 cases. *Radiology* 2020; published online Feb 26. DOI:10.1148/radiol.2020200642.
3 Franquet T. Imaging of pulmonary viral pneumonia. *Radiology* 2011; **260:** 18–39.
4 General Office of National Health Committee. Notice on the issuance of a program for the diagnosis and treatment of novel coronavirus (2019-nCoV) infected pneumonia (fifth trial edition). Feb 5, 2020. http://www.nhc.gov.cn/yzygj/s7652m/202002/e84bd30142ab4d8982326326e4db22ea.shtml (accessed March 20, 2020).
5 Zhibin H, Song C. Screening and management of asymptomatic infection of corona virus disease 2019 (COVID-19). *Chin J Prev Med* 2020; published online March 8. DOI:10.3760/cma.j.cn112150-20200229-00220.

Invisible spread of SARS-CoV-2

We read with interest Adam Kucharski and colleagues' mathematical modelling study of the early dynamics of coronavirus disease 2019 (COVID-19).[1] We agree that a stochastic transmission model might best fit with the reality around the Huanan Seafood Wholesale Market, which was the origin of the COVID-19 outbreak[2] and 1 mile away from our hospitals in Wuhan. We appreciate the work making use of different datasets and considering travel. However, we have concerns about the clinical and strategic values of this work.

First, the authors separated exposed (and not yet symptomatic) individuals from infectious (and symptomatic) individuals. Clinically, both groups are contagious. We wonder if they considered separately for these two groups the correlation of variation in the viral genome with speed of spread?

Second, epidemiological modelling depends primarily on the use of a realistic and dynamic basic reproduction number (R_0), such as those in a previous study,[3] in which the reported R_0 varied from greater than 7 before, to less than 1 after, control measures were introduced.

Third, it is unclear to us whether the Wuhan-based stochastic transmission model can accommodate variation in cultures and lifestyles, which often affects adherence to social distancing, which is crucial for prevention of respiratory transmission.

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