

## CORRESPONDENCE

## Covid-19 in South Korea — Challenges of Subclinical Manifestations

**TO THE EDITOR:** The first confirmed case of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in South Korea was imported from China on January 20, 2020. By February 10, there were 28 cases of laboratory-confirmed coronavirus 2019 (Covid-19, the illness caused by SARS-CoV-2 infection) in South Korea (Fig. S1 in the Supplementary Appendix, available with the full text of this letter at NEJM.org). The characteristics of these patients<sup>1</sup> and the patient numbers are provided in Table S1. The median age of the patients was 41 years (range, 21 to 73), and 15 of the 28 patients (54%) were men. The mean interval ( $\pm$ SD) from symptom onset to diagnosis was  $4.3\pm 4.1$  days.

Eleven cases of Covid-19 were acquired locally and involved delayed diagnosis. Delays in detection of infected patients may be related to subclinical symptoms and diverse initial manifestations that make it difficult for clinicians to diagnose Covid-19. Eight of 20 patients who reported specified symptoms (40%) initially presented with fever, and respiratory symptoms were nonspecific. Some patients reported severe sore throat, whereas others had only a mild cough.

Most of the early local infections were transmitted from patients who were being actively monitored because of recent travel (Patients 3, 5, and 6). Patient 3, who had subclinical symptoms, transmitted SARS-CoV-2 infection to Patient 6, who in turn transmitted it to Patients 10, 11, and 21. During his stay in Japan, Patient 12 had been exposed to a person with confirmed Covid-19. However, he was not screened in the quarantine area at Gimpo International Airport in Seoul, South Korea, because South Korean officials had not been informed about the contact. Patient 12 appears to have subsequently infected Patient 14.

Control strategies for outbreaks of Middle East respiratory syndrome coronavirus (MERS-CoV) infection have focused on tracing contacts of

symptomatic patients with epidemiologic links. However, during the 2015 MERS-CoV outbreak in South Korea, nosocomial transmission persisted despite active quarantine measures.<sup>2</sup> Early data suggest that SARS-CoV-2 infection is more likely to be transmitted than MERS-CoV infection because of a higher estimated reproductive number (2.2 vs. 0.9) and a shorter estimated serial interval distribution (7.5 days vs. 12.6 days).<sup>3,4</sup>

Among the 28 infected patients reported here, Covid-19 was diagnosed by surveillance testing in South Korea in 3 who were asymptomatic. Although asymptomatic transmission has been suggested, it is uncertain when patients with Covid-19 are infectious during the incubation period or whether they are infectious primarily when they have symptoms.<sup>5</sup> Better assessments of viral shedding are needed to properly inform our understanding of transmission dynamics and infection-control practices. Early detection of Covid-19 is difficult because of its apparent subclinical nature in some persons.

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Disclosure forms provided by the authors are available with the full text of this letter at NEJM.org.

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