

Editorial



# The Outbreak Cases with the Novel Coronavirus Suggest Upgraded Quarantine and Isolation in Korea

Jin-Hong Yoo <sup>1,2</sup> and Sung-Tae Hong <sup>3</sup>

<sup>1</sup>Division of Infectious Diseases, Department of Internal Medicine, College of Medicine, The Catholic University of Korea, Seoul, Korea

<sup>2</sup>Division of Infectious Diseases, Department of Internal Medicine, Bucheon St. Mary's Hospital, Bucheon, Korea

<sup>3</sup>Department of Tropical Medicine and Parasitology, Seoul National University College of Medicine, Seoul, Korea



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**Address for Correspondence:**

**Sung-Tae Hong, MD, PhD**

Department of Tropical Medicine and Parasitology, Seoul National University College of Medicine, 103 Daehak-ro, Jongno-gu, Seoul 03080, Korea.

E-mail: hst@snu.ac.kr

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**ORCID iDs**

Jin-Hong Yoo

<https://orcid.org/0000-0003-2611-3399>

Sung-Tae Hong

<https://orcid.org/0000-0002-0300-1944>

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On January 31, 2020, the WHO declared the outbreak of novel coronavirus 2019 (2019-nCoV) a public health emergency over the world but did not restrict international transportation of human and trade.<sup>1</sup> However, many countries began to limit immigrants from China after the declaration.

In Korea, a total of 24 patients of pneumonia or respiratory infection by 2019-nCoV have been confirmed by the Korea Center for Disease Control and Prevention (KCDC) by February 7, 2020 (Table 1). The KCDC is closely and actively monitoring clinical patients and contacted persons by the known patients.

Here we need to pay attention to three of these patients—Patient number 1, 3, and 12.

The Patient 1 had pneumonia as early as three days after the symptom onset, although her condition was stable.<sup>2</sup> During the first 3 days, she did not develop any clinical features suggesting pneumonia. If an early high-resolution computed tomography scan of the lungs had not been taken, the pneumonia would not have been diagnosed. This suggests that the possibility of 2019-nCoV pneumonia cannot be excluded based only on the clinical clues. And the patient is still in a severe clinical course with high oxygen demand for more than two weeks.<sup>2</sup> Based on this clinical course, although the 2019-nCoV is tentatively known to have less severity of the disease than SARS, the virulence of the disease needs to be evaluated more carefully.

The Patient 3 was meaningful in that he caused a secondary infection to the Patient 6 in Korea for the first time. The Patient 6 then infected two of his family members, Patient 10 and 11 to establish a tertiary infection. This raises the concern that the 2019-nCoV could spread significantly into the community in the near future. All of them were on the KCDC list and therefore they were detected rather early.

The Patient 12 contracted a secondary infection in Japan and had never been to Wuhan. Therefore, he easily entered Korea without strict screening at the airport, and lived his daily life for more than ten days without any restriction until 2019-nCoV infection was confirmed. The Patient 12 also has potential to spread the disease as widely as the Patient 3 to the community, and actually the Patient 14 is his wife.

**Table 1.** Cases<sup>a</sup> of novel coronavirus 2019 infection confirmed in Korea

Serial No.	Date of diagnosis	Age/gender	Nationality	Past history of overseas travel	Hospital care	Remarks
1	Jan. 20	35/woman	Chinese	Wuhan	Incheon Medical Center	Detected at airport quarantine
2	Jan. 24	55/man	Korean	Wuhan, Shanghai	NMC	Self-quarantine
3	Jan. 26	54/man	Korean	Wuhan	Myongji Hospital	-
4	Jan. 27	55/man	Korean	Wuhan	SNUBH	-
5	Jan. 30	32/man	Korean	Wuhan, Changsa	SMCSMC	-
6	Jan. 30	55/man	Korean	No, contact with No. 3	SNUH	Secondary transmission
7	Jan. 31	28/man	Korean	Wuhan, Qingdao	SMCSMC	Not listed by KCDC
8	Jan. 31	62/woman	Korean	Wuhan, Qingdao	Wonkwang University Hospital	Not listed by KCDC
9	Jan. 31	28/woman	Korean	No, contact with No. 5	SMCSMC	A friend of No. 5
10	Jan. 31	54/woman	Korean	No, contact with No. 6	SNUH	Family of No. 6
11	Jan. 31	25/man	Korean	No, contact with No. 6	SNUH	Family of No. 6
12	Feb. 1	49/man	Chinese	Japan, contact with patients in Japan	SNUBH	Not listed by KCDC
13	Feb. 2	28/man	Korean	Wuhan	NMC	Evacuated from Wuhan by government
14	Feb. 2	40/woman	Chinese	Contact with No. 12	SNUBH	The wife of No. 12
15	Feb. 2	43/man	Korean	Wuhan	KAFCH	-
16	Feb. 4	42/woman	Korean	Thailand	CNUH	Suspected contraction in Thailand
17	Feb. 5	37/man	Korean	Singapore	Myongji Hospital	Contact with a Malaysian patient
18	Feb. 5	21/woman	Korean	Thailand, contact with No. 16	CNUH	Family of No. 16
19	Feb. 5	36/man	Korean	Singapore	SMCSMC	Contact with a Malaysian patient
20	Feb. 6	41/woman	Korean	No, contact with No. 15	KAFCH	Family of No. 15
21	Feb. 6	59/woman	Korean	No, contact with No. 6	SNUH	A friend of No. 6
22	Feb. 6	46/man	Korean	No, contact with No. 16	Chosun Univeristy Hospital	Family of No. 16
23	Feb. 6	57/woman	Chinese	Wuhan	NMC	Touring Korea since Jan. 23
24	Feb. 7	28/man	Korean	Wuhan	NMC	Evacuated from Wuhan by government A colleague of No. 13

NMC = National Medical Center, SNUBH = Seoul National University Bundang Hospital, SMCSMC = Seoul Metropolitan City Seoul Medical Center, SNUH = Seoul National University Hospital, KCDC = Korea Centers for Disease Control and Prevention, KAFCH = Korean Armed Forces Capital Hospital, CNUH = Chonnam National University Hospital.

<sup>a</sup>Reported by the KCDC, February 7, 2020.

Many patients shared common exposure and family transmission.

The Patients 3, 7, 8, and 15 had history of working or staying at the Wuhan International Fashion Center (The Place®), Wuhan, China. They may have been exposed by the virus at the Center, and Patients 7 and 8 moved from China on the same air plane. The Patients No. 17 and 19 participated a conference in Singapore on Jan. 18-23, 2020. They did not travel Wuhan. Patients 10, 11, and 21 were family or friend of No. 6, No. 18 and 22 were family of No. 16, and No. 20 was family of No. 15. Family transmission continues during home isolation.

However, the real problem is that the Patients 7, 8, 12, and 23 were not on the list of active monitoring by the KCDC. This suggests that there are more possible patients although the KCDC is actively monitoring all of the people on the list of direct or indirect contacts with the confirmed patients. As Yoo<sup>3</sup> mentioned in the last issue of the *Journal of Korean Medical Science*, clearing the present outbreak of 2019-CoV in Korea may last longer period than expected. Complete elimination of the 2019-Cov transmission depends critically on early detection of patients out of the KCDC list.

At this point, we must doubt whether the present defenses thus far have been successful.

Screening with the current guidelines applied only to those with symptoms has reached its limit. Although evidence is still unclear, claims about the possibility of transmission from asymptomatic cases continue to be published.<sup>4</sup>

More than 6,000 people came already to Korea from Wuhan during holidays of this New Lunar Year's Day. Given the incubation period, the next period of 1–2 weeks is important. If the virus has a large amount of viral shedding before symptoms are evident, it is likely that it has been widespread in our community.

Now, serious consideration should be given to the temporary ban on visitors or to the high-level quarantine of all entrants from China. It is reported that about 20,000 visitors come every day from China. By February 6, 2020, the outbreak of 2019-nCoV is still progressing seriously in China over 28,000 patients with 560 deaths according to reports of the Chinese Committee of Hygiene. No one can estimate how many patients may appear in the near future because thousands of patients and several tens of deaths are added every day in China. Considering our demographics and population mechanics including Chinese visitors, we should seriously worry that the virus has been already disseminated into our community over the current known levels of exposure.

Ban of entry or high-level quarantine is not a violation of human rights, nor is it an irrational racism. This is a serious health security emergency in Korea as well as in the world. The government must discern this security agenda and decide how to upgrade enforcing the present national strategy against the 2019-nCoV outbreak as soon as possible.

Quarantine at the immigration for asymptomatic visitors from epidemic areas is an effective preventive method that has been historically proven and should be actively applied.<sup>5,6</sup> However, this way looks not enough to end the present outbreak. In addition, because the possibility of dissemination within our community cannot be ruled out, the more active preemptive containment policy is required targeting both domestic and international transmission.

Perhaps this is the last chance for us to contain further spread of the disease. If it spreads further, we have no way to stop the virus.

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