



COVID-19: Challenges and Experiences in Korea

REPI Global Report 2020-2 (WP-20-2)
Special Issue on COVID-19: Challenges and Experiences in Korea

Submitted to the Coordinating Ministry for Economic Affairs
Republic of Indonesia

**From Testing through Dropping COVID-19 Cases:
Public-Led Citizen Cooperation to Combat COVID-19**



COVID-19: Challenges and Experiences in Korea

REPI Global Report 2020-2 (WP-20-2)

March 20, 2020

Copyright © Regional Economy and Policy Institute (REPI), 2020

1113 Research Complex, Daegu University
201 Daegu University Rd., Gyeongbuk 38453, South Korea

REPI Global Report Series 2020-2 (Working Paper No. 20-2)
[Special Issue] COVID-19: Challenges and Experiences in Korea

Submitted to the Coordinating Ministry for Economic Affairs
Republic of Indonesia

The Four Keys to South Korea's Effective Dropping of the COVID-19 Cases

No. 1

Private Testing Kit Development and Public Emergency Use Authorization (EUA)

No. 2

Systemized Managing of COVID-19 Spreads by the KCDC and Central Government

No. 3

Local Governments' Cooperation/Communication with the KCDC/Cent. Government

No. 4

Citizens' Cooperation/Endeavor to Follow the Public Guide and Social Distancing

From Testing through Dropping COVID-19 Cases: Public-Led Citizen Cooperation to Combat COVID-19

“With knowing our enemies and knowing ourselves, we will not be imperiled in a hundred battles.” Sun Tzu emphasized this strategic maxim about 2500 years ago. The novel coronavirus in 2019 (COVID-19), which is causing public health and economic problems over the world, has been being widespread since its onset in Wuhan, China in late 2019. On its onset, it was novel to many countries but was not entirely novel to South Korea and some other countries that had experienced severe epidemics.

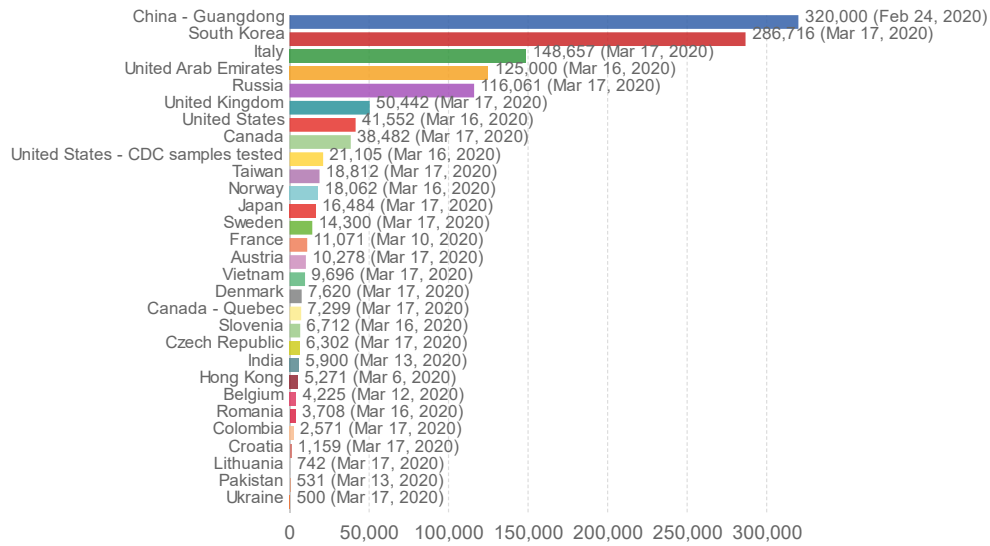
South Korea had experienced SARS (in 2003), the novel influenza A (H1N1) (in 2009), and MERS (in 2015), and this experience greatly helped understand the outbreak of the epidemics. Eventually, the lessons from those three epidemics were the most precious assets of Korea in rapidly monitoring, guiding, tracing, reporting, isolating, and treating cases “timely” utilizing a procedural clinical “drive-through” checkups with diagnostic testing, negative pressure isolation rooms (NPIRs), and COVID-19 residential treatment centers (RTCs).

The first infected case occurred in January 20, 2020, right after the case’s exposure to COVID-19 in China. Until mid-February 2020, local community-associated infection (CAI) was not standing out. However, after about one thousand people’s regular gathering in a building around early and mid-February, COVID-19 began spreading from Daegu to the entire country soon. The number of confirmed cases abruptly soared up to nearly 3,000 by the last day of February 2020, but the central and local governments continued to try containing and mitigating the spread of COVID-19. Its death rate, which is mainly concentrated on (but not necessarily limited to) the elderly with underlying diseases, is currently around 1%, as of mid-March, 2020.

Total COVID-19 tests performed by country



Most recent data as of 17 March 2020 - 18.30GMT. Estimates were collected by Our World in Data from official country reports. In some cases the total number of tests may correspond to the number of individuals who have been tested, rather than the number of samples.



Source: Our World in Data

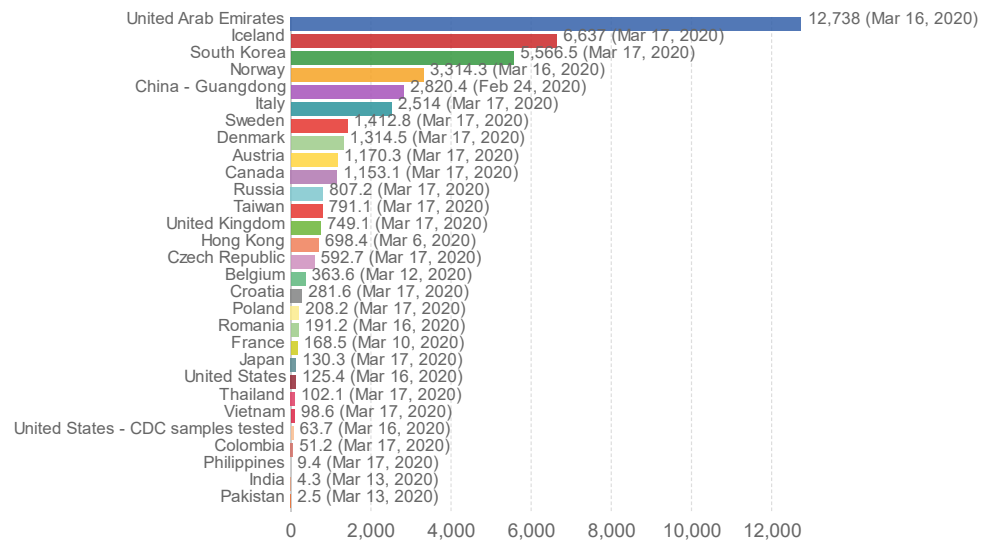
Note: Data for the United States corresponds to estimates from the COVID-Tracking Project.

OurWorldInData.org/coronavirus • CC BY

Total COVID-19 tests performed per million people



Most recent data as of 17 March 2020 - 18.30GMT. Estimates were collected by Our World in Data from official country reports. In some cases the total number of tests may correspond to the number of individuals who have been tested, rather than the number of samples.



Source: Our World in Data

Note: Data for the United States corresponds to estimates from the COVID-Tracking Project.

OurWorldInData.org/coronavirus • CC BY

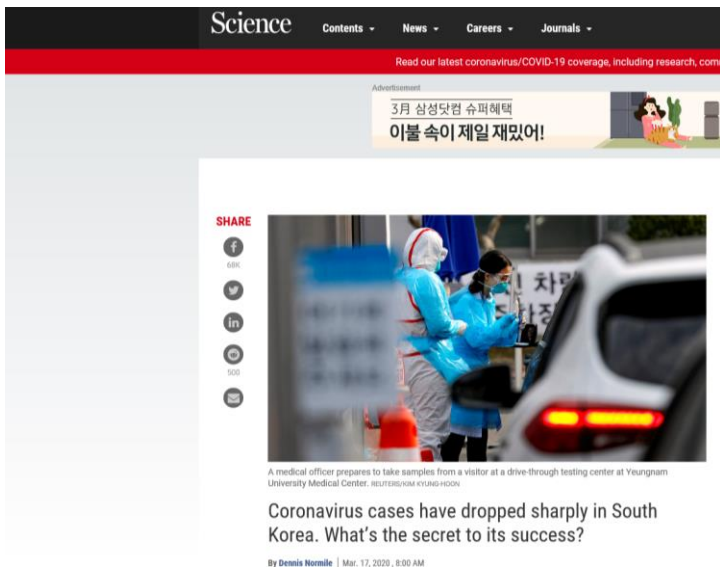
Figure 1. Total COVID-19 Tests per se (above) and per Million People Performed by Country

As a result, as of March 17, the number of COVID-19-tested people in Korea has become almost close to 0.3 million, which is compatible to Guangdong, China (Figure 1). Daily new confirmations soared up to 909 on February 29, but have already dropped to the level around 100 after mid-March, and

its present confirmed cases have been considered stabilized to reach 8,652. Recently, the United States House of Representatives, Time, CNN, Science, BBC, the Guardian, Forbes, Aljazeera and many other global news agencies have reported South Korea's endeavor to contain and mitigate the transmission of COVID-19 (Figure 2). **The net confirmed cases (cumulative confirmations minus full recoveries) have been being dropping conspicuously to 6419 (as of March 20) from 7536 as the zenith on March 12.**



(CNN, March 17, 2020)



(Science, March 17, 2020)



(BBC, March 12, 2020)

Note: The original news articles here are accessible by the titles, authors, and the date via the Web.

Figure 2. Global News Agencies' Reports of South Korea's Mitigation of the COVID-19 Spread



COVID-19: Challenges and Experiences in Korea

The Four Keys to Korea's Effective Dropping of the COVID-19 Cases

1. “Private” Testing Kit Development and “Public” Emergency Use Authorization (EUA)

Kogene Biotech and Seegene have developed their precise but inexpensive COVID-19 test kits in early and mid-February, respectively. According to the central government policy, the Ministry of Food and Drug Safety (MFDS), via the Korea Centers for Disease Control and Prevention (KCDC), then approved their products immediately for emergency use authorization (EUA) after thorough and intensive screening and evaluations in a week. After this private success and speedy approval, other competitors also developed compatible test kits. Since they are based on the standard testing platform of polymerase chain reaction (PCR), it began to be immediately used in Korea, Italy, Spain, Germany, and many elsewhere. The tests for first-screened visitors with symptoms have been made without charge by the government in Korea, which led to almost 300,000 tests as of March 20.

2. Systemized Managing of COVID-19 Infections and Spreads by the KCDC and the Central Gov.

The KCDC has continuously monitored “every and each” case from its first occurrence, immediately assisting providing public disinfection services and moving patients to selectively designated COVID-19 clinics (usually in the public, general, university, or large hospitals) all around the country. It also aggregated and disaggregated data, updating and tracing sites, traffics, symptoms, and contacted people according to the confirmed cases’ traffics. It treated patients in negative pressure isolation rooms (NPIRs) usually in detached hospital buildings or annexes after exterior or open-air container-housing clinics and “drive-through” diagnostic systems. After intensive treatment in NPIRs in local hospitals, with the help of the Ministry of Health and Welfare, it assists local governments to finally care the patients in residential treatment centers (RTCs). The RTCs have been provided by local governments’ related organizations, by private firms like Samsung, and by universities or a diverse type of institutes or training centers. The central government has played its role as the control tower to manage the situations. The Prime Minister moved to Daegu, where was an epicenter in Korea, and the central government has sent airliners to evacuate Korean citizens from highly infectious countries or regions with limited medical assistance. It also provided lower-priced but high-quality KF-94 masks almost compatible with N95 in the United States by 5-day rotating public provision, helping the Web portals instantaneously expose the stockpile per pharmacy “geographically”. It provides **the COVID-19 portal at <http://ncov.mohw.go.kr>**.

3. Local Governments' Cooperation and Communication with the KCDC/Central Government

Local governments have quickly responded to the increasing local infections. After double-checking with the KCDC and Ministry of Health and Welfare, they have utilized short message services (SMSs) to keep all citizens with mobile phones instantaneously updated of the confirmed cases' traffic and contacted people (removing any personal information). They actively make COVID-19 campaigns so that citizens can be reminded of 'behavioral rules to remember' (translated as "COVID-19 Guideline").

4. Citizens' Cooperation and Endeavor to Follow the Government Guide and Social Distancing

Citizens have well responded to the KCDC's and local government's information and guidance. Such guidance includes the 'behavioral COVID-19 rules to remember' (translated as "COVID-19 Guideline") visualizing such everyday tips to prevent COVID-19 as washing hands with soap frequently and wearing masks in a courtesy to each other citizen (Figure A1 (English and Chinese versions)), "social distancing" campaigns, and "how to call (#1339) to visit the designated COVID-19 clinics." The KCDC and the Ministry of Health and Welfare have provided the "standard procedure" for public and private organizations to report cases, help people with symptoms wait (in isolation), and cooperate with the KCDC as the expert disease control authority and the central government as the control tower. Citizens prudently followed those guidelines. Another contribution of citizens includes psychologically and emotionally comforting each other and the voluntary development of smartphone applications like "Corona 100m," which alerts citizens when (s)he is about to reach within 100 meters of the site where the cases just occurred (utilizing georeferencing technology to be applied to the mapping of personal-information-screened traffic data).

Appendix. Useful COVID-19 Related Sites and KCDC's Behavioral Rules (Examples)

Korea Centers for Disease Control and Prevention (KCDC):

https://www.cdc.go.kr/cdc_eng/

Global daily COVID-19 update:

<https://www.worldometers.info/coronavirus/>

Geographical global COVID-19 cases:

<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>.

Visualized COVID-19 information:

<http://www.cidrap.umn.edu/covid-19/maps-visuals>

ArcGIS COVID-19 GIS Hub:

<https://coronavirus-disasterresponse.hub.arcgis.com/>

Figure A1. COVID-19 Guidelines (Behavioral Rules) (English and Chinese Versions)

COVID-19 Guideline

The general public

- Wash your hands thoroughly with soap and running water
- Cover your mouth and nose with your elbow when coughing or sneezing
- Do not touch your eyes, nose, or mouth with unwashed hands
- Avoid coming in contact with people having fever or respiratory symptoms
- Wear a facemask when visiting a health facility
- Avoid visiting a crowded place

Person with symptoms* * Person having fever or respiratory symptoms

- Do not go to school or work and avoid outdoor activities
- Take a rest at home and monitor the symptoms for 3-4 days
- Visit a triage health center, when fever (≥38°C) continues for 3 days or more and consult with KCDC Call Center at 1339, a local code+120 or a local health center
- Use a personal vehicle and wear a facemask when visiting a health facility
- Inform your healthcare provider of a travel history and contact history with persons with respiratory symptoms
- Avoid visiting other regions or having outdoor activities and (Persons in isolation) Please follow guidance provided by physicians and public health authority.

* For more information on COVID-19, visit COVID-19 official homepage kcov.mohw.go.kr Issue Date: 2020. 2. 25

新型冠状病毒肺炎 (COVID-19) 防范指南

普通公民

- 用肥皂和流水充分洗手。
- 咳嗽或打喷嚏时用衣袖遮挡口鼻。
- 没有洗手不触摸眼口鼻。
- 不接触有发热或呼吸道症状的人。
- 访问医疗机构时佩戴口罩。
- 尽量不前往人员密集场所。

疑似患者* *有发热或呼吸道症状(咳嗽、咽痛等)的人

- 请勿上班或上学,减少外出。
- 居家充分休息,并观察3-4天。
- 持续高热3天以上或症状加重时
- 拨打电话咨询呼叫中心(1339, 区号+120),保健所或先到访筛查诊疗所接受诊疗。
- 访问医疗机构时利用私家车并佩戴口罩。
- 如实告知医务人员海外旅行史和有无接触呼吸道症状患者。
- 减少外出或访问其他地区和被隔离人员应严格遵守医务人员和防疫部门的指示。

* 新型冠状病毒 COVID-19 疫情相关信息请在官方主页确认。 kcov.mohw.go.kr Issue Date: 2020. 2. 25

Source: KCDC (2020).