Fighting the Coronavirus Pandemic, East Asian Responses - Republic of Korea: Mass-testing, targeted investigations and the transparency issue

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Key Policies

- A quick reaction to the Wuhan outbreak, with screening, tracing and monitoring of incoming travelers as early as the beginning of January
- Mass-testing for free, including at drive-through test centers and for international travelers arriving in Korea
- A fast-track procedure approval of testing kits for contagion outbreaks
- Intense and compulsory contact tracing
- A government epidemiological investigation of the Shincheonji cult, at the origin of a large contagion cluster in the city of Daegu
- Strict digital monitoring of quarantines, with fines and prison terms to deter violators
- Central government action against the leaking of the identity of infected patients to the public
- Entry bans limited to Chinese nationals with a passport issued from Hubei province and anyone who has visited Hubei province within the past 14 days
- Free-of-charge medical care for all confirmed patients regardless of their nationality

Our series "Fighting the Coronavirus Pandemic, East Asian Responses" continues with the Republic of Korea. The ROK is held as a model in Europe for systematically testing risky individuals for COVID-19 and making free-testing widely available across the country. Like Taiwan and Singapore, South Korea has reacted immediately to the early signs of crisis in Wuhan, and has instituted strict digital monitoring of individuals placed in quarantine. But Korea has had to face a major localized cluster in the city of Daegu, requiring a massive government investigation, and provides an interesting case for thinking privacy in times of pandemic.

Timeline

January 3: First enhanced quarantine and screening measures for travelers from Wuhan

January 8: First suspected case of COVID-19 raises the alarm

January 20: First confirmed case (a Chinese woman) of COVID-19 in South Korea

End of January: Call among the population for a ban on all Chinese travelers, with a petition signed by around 540,000 South Korean citizens on the Presidential Blue House website

January 31: 700 South Korean nationals evacuated from Wuhan on two chartered flight and sent to two isolation facilities located in Asan and Jincheon

February 4: A COVID-19 testing kit, developed by Korean company Kogene Biotech, gets KCDC approval ; start of production

February 12: A third chartered flight sent to evacuate 147 people from Wuhan, including South Korean citizens and their Chinese family members

February 18: Middle-aged woman (**"Patient 31"**) is tested positive to COVID-19 and believed to have spread the virus to hundreds of people in the city of **Daegu**

February 19: The central government (Ministry of Health and Welfare and KCDC) dispatches a special task force in **Daegu** to implement disease control measures with the local government.

February 21: In relation with 'Patient 31', the number of infections jumps to 204 (multiplied by 6 in 3 days), with 16,196 people already tested, mostly in Daegu.

February 22: KCDC sends a rapid response team to Daegu, conducting epidemiological investigation and environmental disinfection. The Daegu Shincheonji members (circa 10,000) are monitored and tested, their travel history is investigated.

February 23: Government raises the alert level to 'Red' (highest level)

February 25: KCDC acquires the **list of all 210,000 Shincheonji members** and monitors them via phone to check any symptom

February 26: Government opens 'drive-through' testing centers, gas station-like facilities where people can be tested while still sitting in their car

February 29: Government says it supplied nearly 4.5 million masks via public organizations. Among them, 1.54 million went to the cluster cities of Daegu and Cheongdo. KCDC recommends "social distancing"

March 1: Seoul's city government files criminal complaint with the Seoul Central District Prosecutors' Office against leader of the Shincheonji cult on charges of murder and disease control act violations.

March 2: Korea Post startsed distributing 650,000 masks through its 1,406 post offices. Each customer can buy up to five masks at a time at a price of 0,81 USD per mask

March 3: Government creates "Life treatment centers" (생활치료센터), in order to move virus patients with mild symptoms in every city

March 5: Prime Minister Chung Sye-kyun announces Republic of Korea will ban mask exports and fairly distribute face masks to people

March 9: President Moon Jae-in states that South Korea may enter a "phase of stability"

March 15: Moon Jae-in declares Daegu as a **special disaster zone,** first time for reasons unrelated to natural disasters

March 22: Government decides to test **all incoming travelers from Europe** for the COVID-19 at the airport. Start of the **"Social Distanciation Campaign"** (22 March – 7 April): Prime Minister Chung Sye-kyun strongly calls for suspending operations in facilities such as religious gatherings, indoor sports and entertainment facilities.

Analysis

The Republic of Korea (ROK) is now held out by the WHO as a policy response example to the COVID-19 crisis. The government has so far contained the virus outbreak without confinement or travel ban, despite having a very high number of confirmed cases - 9137 by March 25. The ROK has developed a policy of mass-testing, with a testing capacity of 20,000 tests per day. As of March 25, a total of 357,896 individuals were tested. Korea's first phase of response is very similar to Singapore and Taiwan, with a rapid government reaction in anticipation of the crisis and building on procedures developed after the 2015 Middle East Respiratory Syndrome (MERS) outbreak, which caused 38 deaths in Korea. However, the ROK has had to face a major cluster in the city of Daegu linked to the covert activities of the religious cult Shincheonji. This has precipitated the government's choice of a mass-testing policy.

Immediately after credible reports of severe contagious pneumonia cases in Wuhan, Korean health authorities start strengthening surveillance measures. An emergency team is set up by the Korea Centers for Disease Control and Prevention (KCDC, 질병관리본부) to study the disease. On January 3, enhanced screening measures, including quarantine, are adopted for travelers coming from Wuhan. To prepare for the Lunar New Year inflow of Chinese visitors, the KCDC also instructs health facilities to enhance infection prevention and control practices.

The emergence of suspected and confirmed cases in Korea in January and the absence of travel restrictions lead to public outrage. A petition on the Presidential Blue House website calling for a ban on all Chinese travelers receives 540,000 signatures. However, public pressure does not change the prevention centered Korean strategy, enforced through screening, local quarantine and self-quarantine recommendations. KCDC conducts epidemiological investigation and contact tracing for confirmed cases, as well as for travelers coming directly from Wuhan. The ROK is among countries having conducted an evacuation from Wuhan. On January 31, two chartered flights evacuate around 700 South Korean nationals from Wuhan and send them in designated facilities for 14-days isolation.

This early response fails to prevent a sudden increase of the contagion in mid-February. A "super-spreader", otherwise known as Korea's "Patient 31", creates a major cluster in the city of Daegu. As of March 24, **71.28%** of Korean confirmed COVID-19 cases are located in the Daegu area. A member of a religious cult called **Shincheonji Church of Jesus,** the middle-aged woman came into contact with more than 1,100 people during a religious gathering in the southeastern city of **Daegu,** a city of 2.5 million inhabitants. She refused a coronavirus test 3 times, under the pretext she had not recently traveled to China. A Ministry of Justice investigation revealed that the sect had a secret office in Wuhan and 42 members traveled from there to Korea in the previous 6 months; a criminal investigation is launched. By early March, the Daegu cluster results in multiplication of cases in Korea by 100 times. The extremely fast number increase brings a high number of patients with mild symptoms in hospitals, while at the same time, on February 21, 1,800 patients are at home waiting for hospital beds and two of them die in the process.

A specificity of Korea's crisis management is the localized outbreak management in and around Daegu, which requires a strategic adjustment. The Ministry of Health and Welfare and KCDC dispatches a special task force in Daegu to implement specific control measures jointly with the local government. In practice, KCDC describes the new approach as a mix of both **"containment and mitigation"**. From February 24, in the infected municipalities of Daegu and Cheongdo, the focus is on isolating and treating potential cases rather than tracing. In other regions, *"epidemiological investigation and environmental disinfection are conducted to find Shincheonji-related cases as well as to prevent sporadic community spread"*. Even though tracing

is not prioritized in the biggest cluster, the government does not let go of the tracing strategy to identify cases outside of the region.

Indeed, the Korean government engages in a targeted nation-wide testing campaign of Shincheonji cult members. On February 25, KCDC acquires the **full list of the 210,000 Shincheonji members,** present in 12 branches across the country, and starts testing and tracing members. This targeted testing campaign implies a coordination effort between the national and local levels. Local governments are given lists of Shincheonji members in their areas, and contact them via phone one by one. On March 9, KCDC declares the testing of the 10,000 Daegu Shincheonji members is almost complete.

After another cluster is discovered on March 16 in a church in Seongnam, near Seoul, the government launches on March 22 a two weeks 'social distancing campaign' ('사회적 거리두기' 캠페인) to incite religious, sport and entertainment activities to shut down, and the Seoul mayor decides the closure of several churches. The Seongam church had not respected previous government recommendation to avoid religious gatherings, resulting in an infection of at least 51 people. According to a study from the KCDC published on March 23, people in their teens and 20s represents 34% of total infection in Korea. It could be because, like in Singapore, young people respect less social distanciation than older generations.

Beyond Daegu and the Shincheonji affair, the ROK's crisis management relies on a systematic campaign of testing. From the experience of mismanagement of the 2015 MERS outbreak, KCDC creates a fast-track approval process of testing kits for immediate production in case of a virus outbreak. Before that, the private sector, representing 90% of Korean test production, needed a lengthy authorization process to launch new tests.

Thanks to this new system, on February 4, only two weeks after China releases the genetic sequence of COVID-19, a virus testing kit developed by Korean company Kogene Biotech Co Ltd obtains KCDC approval. The test kit, which gets results in six hours, becomes available in 50 clinics just three days after its official approval. Korean health authorities are thus able to test hundreds of thousands of citizens for the virus in the space of a few days.

The COVID-19 testing campaign is a mix of **free testing and intense compulsory tracing.** Testing is free of charge for suspected cases (i.e. in the presence of symptoms or of a link to a confirmed case) since January, including for foreign nationals. Government covers hospitalisation costs, treatment and provides compensation for people living in self-quarantine. After the Daegu outbreak, the Korean government creates "Drive-through Test Centers" , where people can be tested for free and on demand inside their own car. Results are later sent by text message. The aim of those structures is to limit contact between patients and medical workers, as well as gaining time on the testing process, since it is possible to test 10 persons an hour. Within one month, a total of 40 drive-through facilities is active nationwide. In addition, to face the wave of incoming infected travelers returning or visiting Korea after mid-March, the government decides to test for COVID-19 all incoming travelers from Europe at the airport on March 22. In practice, passengers arriving from EU countries, if tested positive, are transferred to a hospital and treated immediately. Passengers testing negative still need to undergo a period of quarantine; Korean nationals must undergo a second examination within three days after returning home.

The Korean government also conducts intrusive contact tracing to track known and suspected cases alike, **without the need of individual's approval**. At first, KCDC uses mostly **mobile phone records** as well as **CCTV camera footage** to determine who has come in contact with a confirmed carrier. The newspaper *Chosun Ilbo* describes the tracing process as: 1/ identifying people who

came within a 2-m distance of a confirmed case a day before the person started displaying symptoms, and 2/ narrowing down depending of the conditions of contact (if the person was wearing a mask, sneezed, etc). Suspected cases are then put in self-quarantine for 14 days. **Credit card records** are also used to improve tracing, as these records are more precise than phone records (roughly 80% of transactions in Korea are now made with credit cards). This tracing is done in collaboration with credit card companies: the KCDC sends information about a case with the date of first symptoms, and the companies send back data. **According to Korean law, this kind of information is usually given upon court approval or personal consent, but in case of a national crisis, the KCDC is able to skip this step**.

The Korean government strictly monitors quarantined individuals, like Singapore and Taiwan. The Korean Ministry of the Interior and Safety has developed a mobile phone application named "self-quarantine safety protection" for Android and IoS users. The app monitors the location of the quarantined user and offers a channel to communicate directly with health authorities and report on the evolution of their symptoms. Violators of the quarantine terms are fined up to US$2500.

But what is more specific of the Republic of Korea is the controversy regarding disclosing to the public the identity and the location of patients and quarantined individuals. On its website, KCDC provides **extended lists of confirmed cases.** Even though the names are not revealed, a wide range of personal information is disclosed: age, sex, neighborhood, where the infection took place. **Local governments relay those information** through local and social media. Some cities even release "**emergency alerts" through text messages** to inform inhabitants of confirmed case in their vicinity. Names are not mentioned, but information such as occupation, employers and travel history are relayed, and even translated in English for foreign inhabitants. Private initiatives emerge, such as an aggregation of KCDC data through the website Coronamap.

The invasion of privacy becomes so extreme that the **National Human Right Commission** expresses concern about the excessive disclosing of private information of patients, which are easily identified by their workplace or travel history. On March 10, KCDC sets new guidelines preventing regional governments from leaking information (such as address or employer) that could lead to identification of patients. However, an exception is made for cases where a patient has infected large numbers of colleagues at work.

The Korean government, like Taiwan, has adopted an industrial policy to support and control mask production and distribution. The country has a daily mask production capacity of 10 million units, yet 90% of the raw materials are imported from China. This explains why the Korean policy to boost production centered on the local production and retail of the key raw material for mask production, melt-blown nonwoven fabric filters. According to Finance Minister Hong Nam-ki, the ROK targets an increase of its daily mask output from 10 million to at least 13 million. To avoid shortages, the government first limits mask exports to 10% of the output before completely banning mask exports from March 5. On the same day, to prevent hoarding situations faced earlier in the month, the Korean government decides rationing and control of their national distribution. Prime Minister Chung Sye-kyun announces that masks will first be provided to the medical, quarantine and law-enforcement sectors, and then evenly distributed to the general population. Korea Post is put in charge of distributing 650,000 masks though all its post office, with buying limited to five masks by person at a price of 1,000 won per mask (around 0,81 USD). Overall, compared to Taiwan, the mask production and distribution strategy has been much less successful, leading the vice-minister of Health to state on March 1: "We apologize deeply to people regarding mask issues".

The crisis in Daegu leads the Moon administration to declare the city and three nearby

municipalities in North Gyeongsang as a **"special disaster zone"** on March 15. It is the first time this status is used for non-natural disaster causes. Under the Korean legislation, people within the designated zones are eligible to receive state support for livelihood costs and exemptions in paying utility bills and public health insurance fees. The Korean government has set aside a a massive supplementary bill of 11.7 trillion won (approximately 9 billion USD), with 1 trillion won going to the cluster of Daegu-city and North Gyeongsang Province (approximately 811 million USD) - legislation is passed by the National Assembly on March 17.

The ROK is now associated in the media with mass-testing, and indeed the free testing possibility, including the drive-through testing, has been a major feature of the government's response, emulated today by other governments. Yet neither the number of available masks, nor the quantity of tests are enough to cover the entire population. Two features are actually more significant. First, the massive investigation conducted to address the emergence of the Daegu cluster and avoid contagion along the national network of the Shincheonji sect, making use of all available data. Second, Korea displays features similar to the other Asian dragons: a quick reaction centered on tracing and monitoring to avoid a major contagion, targeted border controls expanding over time, and a strict quarantine policy. Finally, there is tension around leaking of the identity of infected patients to the wider public, and how the central government places local governments under control to avoid such practices. This raises the question of the deterrent effect of naming and shaming risks on the social behavior of the population, vs. the impact on privacy and individual rights.