South Korea

South Korea Offers a Lesson in Best Practices

The United States May Be Left With Only the Most Invasive of Them

By Victor Cha April 10, 2020

A checkpoint at Incheon International Airport, South Korea, March 2020
Xinhua / eyevine / Redux

When it comes to the novel coronavirus, South Korea has taken tracing to a new level. When passengers deplane at Incheon International Airport near Seoul, they pass through mandatory temperature checks and are required to download the health ministry’s self-diagnosis app. Once at their destinations, they must use the app every day to self-report any symptoms of COVID-19, the disease caused by the new coronavirus. The movements of those who test positive are tracked, and other people in their vicinity receive social-distancing alerts on their phones.

Most Americans would chafe at this type of Big Brother surveillance as contrary to the values of freedom and privacy, even in these disruptive times. To compare South Korea’s infection numbers with those of the United States, however, is to wonder whether combating the virus and reopening the economy could require temporarily eschewing those values in favor of invasive policies.

Stay informed.
The United States and South Korea confirmed their first cases of COVID-19 within a day of each other, but since then, the United States has registered case numbers in six digits, whereas South Korea has barely cracked 10,000 and has witnessed a slowdown in the rate of infection. South Korea’s COVID-19 mortality rate is one-third that of the United States. And per capita, South Korea has tested three times as many citizens as the United States has—thanks in part to South Korean companies, which produce more than 350,000 test kits per day and plan to increase their output to one million.

But South Korea’s surveillance is only one small aspect of what has become the gold standard for flattening the curve. The South Korean response—a blend of quick action and policy innovations coordinated by the national government—has proven enormously effective in containing the COVID-19 outbreak and can provide lessons for other countries, such as the United States, which have faltered by comparison. But because the United States has squandered valuable time to contain the virus, it may be forced to consider a version of South Korea’s more intrusive solutions if it wants to save lives, reopen businesses, and arrest economic free fall.

TIME IS OF THE ESSENCE
The timeline of South Korea’s response is one of efficient containment. The country wasted little time. Less than a week after South Korea detected its first case of COVID-19 on January 20, health officials met with 20 medical and pharmaceutical companies to jump-start the production and approval of test kits. After some initial hesitation, the government declared a national emergency on February 23. The administration of U.S. President Donald Trump would take three more weeks to do the same.

South Korea placed a premium on working quickly, even after its early start. At the end of January—just nine days after that first positive case—the Korea Centers for Disease Control and Prevention (KCDC) and the National Health Insurance Service established
a “1339” call center to update the public and collect case data. At the same time, the Korea Occupational Safety and Health Agency started supplying more than 700,000 facemasks to vulnerable workplaces. About two weeks after the first case was confirmed, the government approved and distributed test kits capable of producing results in six hours. South Korea then proceeded to test more than 20,000 people daily.

South Korea placed a premium on working quickly. The quick response can be attributed to the lessons South Korea learned during the Middle East Respiratory Syndrome outbreak in 2015. During that epidemic, South Korea suffered the largest number of cases outside of Saudi Arabia, in part because the government’s response was slow and inadequate. The public lacked information, and the health-care system lacked test kits. Carriers of the virus moved from one facility to another in search of tests. To avoid repeating those errors, the South Korean government created emergency response systems, trained for the next pandemic, and passed a law providing for the immediate approval of testing systems in the event of a health crisis. The latter policy allowed for the quick production of test kits during the COVID-19 outbreak.

INNOVATION NATION

South Korea’s constructive response to the new epidemic owes a great deal to innovation. Much attention has already been given to South Korea’s use of high-tech apps and CCTV to geolocate and tag sick people. But South Korea’s most elegant innovations have been common sense ones that have saved lives and slowed the spread of the virus.

About one month after South Korea’s first positive case, for example, health officials came up with the idea of a drive-through testing facility. The first one was set up in the parking lot of a university on February 23. There are now more than 70 drive-through facilities and more than 600 testing facilities nationwide. These facilities allowed for thousands to be tested daily even while maintaining social distancing, as patients waited safely in the confines of their vehicles.

A drive-through test facility in Daegu, South Korea, March 2020

Kim Kyung-Hoon / Reuters

Another simple but pragmatic idea was the “designated site” system, in which the government assigned some medical facilities to handle COVID-19 cases exclusively and others to handle other ailments. Designated sites were listed on the government app and identified with large signs on their premises. People in HAZMAT suits stood at hospital entrances to direct walk-in patients to the designated and nondesignated sites. This system helped keep virus-afflicted patients away from other patients, thus reducing the spread of the disease.

ALL POLITICS IS NATIONAL

South Korea’s COVID-19 response would have been far less nimble without the coordination of the national government. The government brought the public and private sectors together to solve problems, and it responded to the outbreak on a national scale, rather than leaving local authorities to address the epidemic piecemeal. National authorities are preparing for the recovery from the pandemic’s economic fallout by announcing aid packages for cities and provinces, suspending social security payments, and providing cash payments to households below the median income level.

Nowhere is the effect of national coordination more apparent than in the case of facemasks. South Korea suffered a mask shortage similar to that of the United States,
and there, too, the shortage led to hoarding and price gouging. On March 5, the government purchased 80 percent of the masks produced domestically. It prioritized hospitals for distribution and then created a price control and ration system. To prevent hoarding, citizens were allowed to purchase masks only on designated days based on the last digits of their birth years.

Due to the government’s control over distribution, a mask in South Korea costs about $1.27 and can be purchased at a pharmacy, a post office, or an agricultural cooperative. The wide supply ensures that mayors and governors do not have to outbid one another for medical supplies. By contrast, the United States’ haphazard, decentralized response has left states to fight with one another over federal stockpiles and foreign imports of medical equipment. An N-95 mask is selling in the United States on eBay for as high as $30.

EMBRACING BIG BROTHER

The United States bungled several aspects of its early pandemic response and thus lost a great deal of time. Initially, Trump thought a travel ban on China and Europe was enough to stop the spread of the virus. To add insult to injury, the U.S. Centers for Disease Control and Prevention produced test kits that didn’t work, and the Federal Drug Administration did not allow for an expedited regulatory approval process. But the next steps matter. If the United States wants to reopen the economy soon, it can still draw from some of South Korea’s best practices to flatten the curve in virus hot spots and keep cases to a minimum in parts of the country that have yet to experience a severe outbreak. Unfortunately, at this late juncture, the solutions left for the United States to choose from may be the more invasive ones in South Korea’s arsenal.

Effective testing and contact tracing could have contained the outbreak early. That horse has evidently left the barn—but pervasive testing, comprehensive contact tracing, and persistent social distancing are precisely what will be required in order for portions of the economy to recover and safely reopen. The United States still needs to develop tests and figure out how to trace contacts at scale. One way to do this is to train and enlist an army of technicians to map out the web of interactions for each infected individual. Alternatively, the United States could follow South Korea in leveraging the one piece of technology that every citizen possesses—a cell phone.

There are, to be sure, unwelcome Big Brother elements to South Korea’s self-diagnosis and tracking apps. Americans value their privacy as a constitutional right and may, as a result, reject location tracing, opting instead to wait for a vaccine. But that wait could take well over one year and could create untold financial, physical, and psychological strains. South Korea’s phone app is a possible solution; it effectively uses GPS, a technology that is familiar to most Americans. Given its early lag in testing and tracking, the United States must take this uncomfortable step toward social tracking, even temporarily—or risk the loss of tens of thousands of more lives.

06.04.2020

Coronavirus cases have dropped sharply in South Korea. What’s the secret to its success?

The country of 50 million appears to have greatly slowed its epidemic; it reported only 74 new cases today, down from 909 at its peak on 29 February. And it has done so without locking down entire cities or taking some of the other authoritarian measures that helped China bring its epidemic under control. “South Korea is a democratic republic, we feel a lockdown is not a reasonable choice,” says Kim Woo-Joo, an infectious disease specialist at Korea University. South Korea’s success may hold
lessons for other countries—and also a warning: Even after driving case numbers down, the country is braced for a resurgence.

Behind its success so far has been the most expansive and well-organized testing program in the world, combined with extensive efforts to isolate infected people and trace and quarantine their contacts. South Korea has tested more than 270,000 people, which amounts to more than 5200 tests per million inhabitants—more than any other country except tiny Bahrain, according to the Worldometer website. The United States has so far carried out 74 tests per 1 million inhabitants, data from the U.S. Centers for Disease Control and Prevention show.

South Korea’s experience shows that “diagnostic capacity at scale is key to epidemic control,” says Raina MacIntyre, an emerging infectious disease scholar at the University of New South Wales, Sydney. “Contact tracing is also very influential in epidemic control, as is case isolation,” she says.

Yet whether the success will hold is unclear. New case numbers are declining largely because the herculean effort to investigate a massive cluster of more than 5000 cases—60% of the nation’s total—linked to the Shincheonji Church of Jesus, a secretive, messianic megachurch, is winding down. But because of that effort, “We have not looked hard in other parts of Korea,” says Oh Myoung-Don, an infectious disease specialist at Seoul National University.

<table>
<thead>
<tr>
<th>South Korea</th>
<th>Social assistance</th>
<th>Childcare support</th>
<th>The government will support childcare with W2.4T to low-income households as they shift from child daycare to home care. Specifically, parent employees get W50,000/day.</th>
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<tr>
<td></td>
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<td>Cash transfer (new)</td>
<td>W200B to low-income households getting unemployed and to those under COVID-19 treatment/quarantine.</td>
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<td></td>
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<td>Cash transfer</td>
<td>Reintroduction of job seekers’ allowance for low-income households, with such allowance being increased from W200,000 to 500,000 for up to 3 months.</td>
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<td>In-kind food/voucher scheme</td>
<td>W2.8T are provided via a 4-month-worth purchase vouchers to households receiving child and social assistance.</td>
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<td></td>
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<td>Cash transfers (new)</td>
<td>The government decided to offer emergency relief payments of 9.1 trillion won to households in the bottom 70 percent income bracket. A total of 14 million households to become recipients. Payments to vary according to the household members: 0.4 million won (single-person households), 0.6 million won (two-person households), 0.8 million won (three-person households), 1.0 million won (four-person households)</td>
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<td>Utility and financial obligation support (waiver/postponement)</td>
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<td>The government will also provide a 1.3 trillion won worth of electricity bill payment deferral, which will be given to 3,200,000 small businesses and 1.570 million low-income households for three months from April to June.</td>
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<td></td>
<td>Health insurance support</td>
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<td>The Korean social insurance agency will allow for payout of industrial accident insurance to workers who are tested COVID-19 positive; deduction of health insurance premium payments by 50% is planned for low-income households.</td>
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<td></td>
<td>Social security contribution subsidy/waiver</td>
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<td>The government will expand the social security contribution reliefs as it will offer 3-month payment deferrals and 30 percent contribution cuts. The deferrals and cuts will be applied to contributions for March and beyond.</td>
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11 [http://english.mof.go.kr/popup/20200302_policyFocus/popup.html](http://english.mof.go.kr/popup/20200302_policyFocus/popup.html)
| Labor markets | Wage subsidies | National HealthCare contributions:  
- Current relief: Give 50 percent cut in contributions for three months to those in the bottom 20 percent income bracket and bottom 50 percent in hard-hit areas (A total of 3,460,000 beneficiaries)  
- Expand to bottom 40 percent and give them 30 percent reduction for three months (Additional beneficiaries of 4,880,000)  
National Pension contributions:  
- The government will adopt a long installment payment plan rather than a payment exemption. For citizens are to receive their pension benefits according to the contributions they made.  
- Temporarily expand the eligibility for the contribution relief  
- Allow up to 60 month installment payment Unemployment insurance contributions:  
- Give a three-month payment deferral to small businesses with less than 30 employees: 6,120,000 employees and 2,280,000 businesses, around 44 percent of the total unemployment insurance holders, to receive the payment deferral |
| Wage subsidies | | Increased by W400 billion, to KRW500 billion. This emergency measure introduced a further increase in employment retention subsidies from 66% of wages to 90% for 3 months, April to June (while maintaining the cap of $66/employee/day). Large firms are subject to the 66% threshold. |
| Shorter work time benefits | | Increased by 25% of existing indirect employment-cost subsidies (to W400,000 per worker) in the event an employee reduces work hours for COVID-19-related family care, coupled with relaxing eligibility criteria (e.g. the minimum employment duration from 6 months to 1 month). |
| Labor market regulation | | Flexibility in the system introduced: (i) extend the employment contract by 50 days for those whose employment terms are |
South Korea, where initially the infections spun out of control, the government has been able to slow down the pandemic by using aggressive tracking tools.

For example, the government has released a smartphone app that can track self-quarantine subjects to ensure that they do not leave their homes and maintain strict separation from other people, including family members. Those under quarantine can use the app to report their symptoms, and provide status updates to officials.

Similarly, Israel is using mobile phone data to track the movements of those who have tested positive for the virus and to identify those who need to be quarantined.

Moreover, across Bangladesh, the government has initiated a process to draw a digital map to track coronavirus cases and find out areas susceptible to contamination by using mobile users' information — a move that may help portray the real picture of a possible outbreak. Under a self-reporting method, mobile users will get a short message (SMS) from their operators and in reply, they will share some of their health information.

All the 16.62 crore mobile phone users in the country will start getting SMS from this morning and they will be asked to make a call to *3332# free of charge. During the 90-second call in the form of interactive voice response (IVR), users will reply to five questions about their age; whether they have breathing problems; if they have fever or cough; whether they have come in contact with someone who returned from abroad recently; and if they have come close to any coronavirus-infected people.

Furthermore, one of the countries that have efficiently harnessed big data analytics to contain the spread of the Coronavirus pandemic is Taiwan. The country reported only about 50 odd cases by mid-March, while its neighbor (South Korea) had clocked close to 8000 cases.

 Taiwanese officials have conducted a detailed mapping of people who were infected and from whom they caught the infection. They integrated the Taiwan National Health Insurance databases with immigration and customs databases.

 Using all of this data, the Taiwanese Government could trace the 14-days travel histories and symptoms of its citizens. Further, international travelers were asked to scan a QR code. This redirected them to an online health declaration, which was used to provide contact information and symptoms.

 The US government is in active talks with Facebook, Google and a wide array of tech companies and health experts about how they can use location data gleaned from Americans' phones to combat the novel coronavirus, including tracking whether people are keeping one another at safe distances to stem the outbreak.

 Public-health experts are interested in the possibility that private-sector companies could compile the data in anonymous, aggregated form, which they could then use to map the spread of the infection, according to three people familiar with the effort, who spoke on the condition of anonymity because the project is in its early stages.
Despite as against more than 10,000 positive cases of Corona in South Korea, there are only reported deaths of 174 (as on 3rd April, 2020) and the cases are dropping sharply. This country has emerged as a sign of hope and a model to emulate. The country of 50 million has managed to do this without locking down entire cities or taking some of the other authoritarian measures taken by countries like China.

Testing:- Behind its success so far has been the most expansive and well-organized testing program in the world, combined with extensive efforts to isolate infected people and trace and quarantine their contacts. Rate of testing here is approximately 5200 tests per million inhabitants—more than any other country around the world. For comparison, US has been doing approximately 70-80 tests per million. Diagnostic capacity at scale is key to epidemic control.

Contact Tracing:- Contact tracing is also very influential in epidemic control, as is case isolation.

Hunt down the cluster groups:- Govt’s herculean effort to investigate massive clusters of congregation, for example that of more than 5000 cases linked to the Shincheonji Church of Jesus, a secretive, messianic megachurch, and bring them to close their activities has helped the outbreak under control. This helps in curbing community spread of the disease on a large scale.

Experience:- South Korea learned the importance of preparedness the hard way. In 2015, a South Korean businessman came down with Middle East respiratory syndrome (MERS) after returning from a visit to three Middle Eastern countries. He was treated at three South Korean health facilities before he was diagnosed with MERS and isolated. By then, he had set off a chain of transmission that infected 186 and killed 36, including many patients hospitalized for other ailments, visitors, and hospital staff. Tracing, testing, and quarantining nearly 17,000 people quashed the outbreak after 2 months. The specter of a runaway epidemic alarmed the nation and dented the economy. That experience showed that laboratory testing was essential to control an emerging infectious disease. MERS experience certainly helped South Korea to improve hospital infection prevention and control.

Legislation:- Legislation enacted since then gave the government authority to collect mobile phone, credit card, and other data from those who test positive to reconstruct their recent whereabouts. That information, stripped of personal identifiers, is shared on social media apps that allow others to determine whether they may have crossed paths with an infected person.

KCDC:- After the novel coronavirus emerged in China, Korea Centers for Disease Control and Prevention (KCDC) raced to develop its tests and cooperated with diagnostic manufacturers to develop commercial test kits. The first test was approved on 7 February, when the country had just a few cases, and distributed to regional health centers.

Prioritization:- High-risk patients with underlying illnesses get priority for hospitalization. Those with moderate symptoms are sent to repurposed corporate training facilities and spaces provided by public institutions, where they get basic medical support and observation. Those who recover and test negative twice are released.

Strict Monitoring:- Close contacts and those with minimal symptoms whose family members are free of chronic diseases and who can measure their own temperatures are ordered to self-quarantine for 2 weeks. A local monitoring team calls twice daily to
make sure the quarantined stay put and to ask about symptoms. Quarantine violators face up to 3 million won ($2500) fines. If a recent bill becomes law, the fine will go up to 10 million won and as much as a year in jail.

**Cooperation:** People are cooperating via voluntary social distancing nationwide. The government is advising people regularly to wear masks, wash their hands, avoid crowds and meetings, work remotely, and to join online religious services instead of going to churches. Those with fevers or respiratory illnesses are urged to stay home and watch their symptoms for 3 to 4 days.

**Data/Research:** The government hopes to control new clusters. The national testing capacity has reached a staggering 15,000 tests per day. There are 43 drive-through testing stations nationwide. In the first week of March, the Ministry of the Interior also rolled out a smartphone app that can track the quarantined and collect data on symptoms. Scientists are eager to see more epidemiological data. KCDC releases the basic counts of patients, their age and gender, and how many are linked to clusters. Scientists would like to study detailed individual patient data, which would enable epidemiologists to model the outbreak and determine the number of new infections triggered by each case, also known as the basic reproductive number; the time from infection to the onset of symptoms; and whether early diagnosis improved patients’ outcomes. A group of epidemiologists and scientists has proposed partnering with KCDC to gather and share such information. Medical doctors are also planning to share details of the clinical features of COVID-19 cases in the country in forthcoming publications.

One option for Covid-19 testing — which South Korea has made more readily available than most other countries — involves public “phone booths.” A hospital in Seoul has installed them around its building to offer easy, quick testing to people worried they may have the disease. One person at a time can enter one side of the glass-walled booth and grab a handset connected to a hospital worker standing on the other side of the glass. After a consultation, the staff member can stick their arms into rubber gloves embedded into the booth to swab the patient quickly, collecting a sample before the booth is quickly disinfected. The hospital says the seven-minute exam allows it to test almost 10 times as many samples as it could without the special booths.

**South Korea:** 9,241 confirmed cases, 131 deaths

Here the strategy has relied on active, free and massive screening (including drive-through tests) for symptomatic individuals, case contacts and travellers. Schools have been closed, working remotely is recommended, and large gatherings are banned. Mask wearing, sanitiser use and thermal screening in buildings are widespread. Notably, there have been neither lockdowns nor restriction to movement.

The UNDP Seoul Policy Centre has reviewed some outbreak-related practices in South Korea. Among these are disclosure of real-time information on COVID-19 by the government via dedicated websites, mass media, phone messages and mobile apps. Also, as of 19 March there were approximately 85 drive-through testing stations, and nearly 20,000 people are tested every day – more tests per head of population than anywhere else.

People under compulsory self-quarantine (eg those awaiting the test results) are monitored through an app by government and police, and violators are punished. Only people with severe symptoms are hospitalised, the rest being sent home.

Private sector companies actively participate in disseminating and collecting virus-related information, which includes data on confirmed coronavirus patients, along with
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<th>the patient's nationality, gender, age, which places the patient has visited, and how close citizens are to these patients.</th>
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<td>Telecom companies are providing the government with mobile data to monitor the movement of COVID-19 patients.</td>
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