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Korea's Fight against COVID-19



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Table of Contents

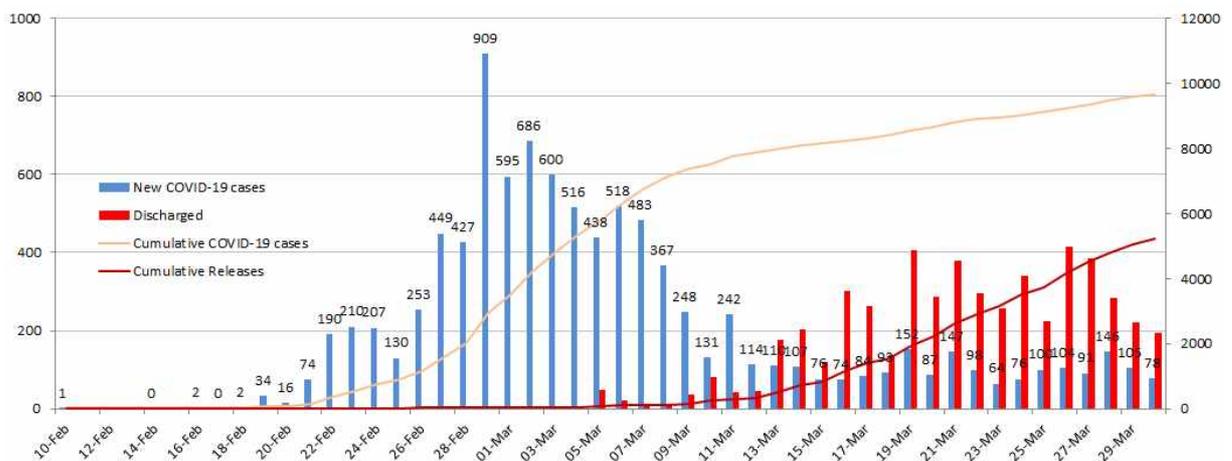
| | |
|---|----|
| 1. Coordinated Global Response against COVID-19 | 1 |
| 2. COVID-19 Situation in Korea | 2 |
| 3. COVID-19 Control Strategy : Test, Trace and Treat & Civic Participation..... | 3 |
| 4. Open and Transparent Response with Minimal Interference in Traffic | 7 |
| 5. Curbing COVID-19 Inflow from Abroad..... | 8 |
| 6. Minimizing COVID-19 Outflow Overseas | 10 |
| 7. Whole-of-Government Adaptive Approach | 11 |

1. Coordinated Global Response against COVID-19

- The international community is facing an unprecedented global crisis with the fast spread of the COVID-19 pandemic to an ever-growing number of countries and peoples (202 countries and territories as of 30 March). The pandemic has triggered widespread closing of borders, wiped out global mobility of people and goods, disrupted global supply and distribution networks, and spread panic and fear, not to mention stalled or ended the lives of those infected by the virus. To beat COVID-19 and recover from the devastation it has wrought, an unprecedented level of global solidarity and coordinated action is needed. No country will be fully safe before the world as a whole feels safely protected from COVID-19.
- The Republic of Korea has overcome the worst phase of the spread of the virus so far in the country, and the Government is prepared to fully share all information and insight garnered in our ongoing fight against COVID-19 with our partners in the international community. We will partake in coordinated global responses, extend the strongest support to multilateral efforts to fight the virus, and do our utmost to meet demands in other countries for medical equipment and supplies subject to our domestic needs and production capacity. We hope the legacy of COVID-19 to be one of global solidarity and better preparedness for the next time based on the principles of openness, civic engagement and transparency.
- With this commitment and vision, President Moon Jae-in took part in the Extraordinary Virtual G20 Summit, chaired by Saudi Arabia on 27 March, to advance coordinated global response against COVID-19. He has also engaged with numerous world leaders over the telephone. The Government is also having bilateral and multilateral telephone/video consultations with many countries at various levels/sectors, including Disease Control and Prevention Agencies, to share information and coordinate responses.
- ◆ The Korean Government recently initiated a prospective cohort study on domestic COVID-19 cases in close collaboration with the WHO, with the expectation that clinical, epidemiological, and immunological studies may contribute to international efforts in the fight against COVID-19 and provide scientific grounds for drawing up guidelines and recommendations.

2. COVID-19 Situation in Korea

- The COVID-19 epidemic in Korea has so far been largely concentrated in a specific region of the country and within a specific religious group¹. Concerted efforts by health authorities in February and early March to exhaustively test and isolate those at high-risk in the region and among the members of the group around the country resulted in a surge of hundreds of new cases being identified daily for some time. However, by quickly identifying those infected through exhaustive testing and aggressively tracking down their contacts to prevent further spread of the virus, the situation has been stabilized.
- ◆ The number of newly confirmed cases per day has been showing steady decline since hitting a peak at 909 new cases on 29 February. Since March 15th when the number first fell below 100, the average number of newly confirmed cases per day has fluctuated around this level. Since mid-March, the daily number of patients who had fully recovered, tested negative for COVID-19, and discharged from hospitals or treatment centers (shown in red) has steadily surpassed that of the newly confirmed cases (shown in blue), as can be seen in the graph below. On 28 March, the number of patients fully cured and released surpassed those still remaining in care.



< COVID-19 Situation in Korea >

- Despite the encouraging trend, we continue to remain vigilant as there are sporadic spikes in group/community transmissions in various parts of the country, as well as an increase in COVID-19 cases among recent overseas travelers². We have continued to quickly adapt our countermeasures and control strategies in response to the evolving nature of the spread. The measures currently in effect and outlined in this paper are the result of whole-of-government deliberation and decision to adapt and upgrade our response to COVID-19.

¹ As of 30 March, 58.7% of confirmed cases are linked to Shincheonji Church and 82% are residents of Daegu / North Gyeongsang Province.

² As of 30 March, a total of 476 confirmed cases have been determined as influxes from overseas. Nearly half of those cases (202) were found during entry procedures.

3. COVID-19 Control Strategy : Test, Trace and Treat & Civic Participation

- The Korean Government's COVID-19 control strategy consists of robust testing to identify confirmed cases, tracing their contacts to prevent further spread, and treating those infected at the earliest possible stage, while actively engaging the public to participate in social-distancing and other preventive measures.
- ◆ WHO Director-General Tedros noted, “Korea was faced with accelerating community transmission but did not surrender. It educated, empowered and engaged communities, developed an innovative testing strategy and expanded lab capacity, did exhaustive contact tracing and testing in selected areas...WHO is working in solidarity with other countries with community transmission to apply the lessons learned in Korea and elsewhere, and adapt them to the local context” (*WHO press briefing, 18 March*) The WHO has continued to show trust in Korea's emergency response capability and its public health measures since the early stage of the COVID-19 outbreak in Korea.
- **(Testing : RT-PCR³ Diagnostic Screening)** Robust diagnostic testing capability lies at the core of our control strategy for COVID-19 epidemic. With our current diagnostic testing capacity of up to 20,000 tests per day, we have performed a total of nearly 400,000 tests so far⁴, and continue to test at near-full capacity.
- This was made possible by fast-track authorization of test-kits produced by biotech companies while maintaining the highest performance standards, rapid transfer of technology to relevant sectors, and efficient networking of public and private institutions capable of testing at scale. Currently, COVID-19 tests are conducted at 118 testing institutions across the country, including the Korean Centers for Disease Control and Prevention, 4 National Quarantine Stations, 18 Research Institutes of Public Health and Environment, and 95 private medical laboratories and hospitals.

To fully utilize this diagnostic testing capacity for early detection of COVID-19, the government introduced measures to provide convenient access to testing centers for the public while maintaining the safety of medical workers and healthcare institutions.

- ◆ **(Innovations in Access to Testing)** To protect healthcare institutions from COVID-19 contamination during specimen collection and to prevent cross-infections between patients, we set up separate, isolated ‘Screening Centers’ at public health centers and healthcare institutions nationwide that are exclusively dedicated to serving those that either have had contact with confirmed cases or are displaying

³ Real-Time Reverse Transcription Polymerase Chain Reaction.

⁴ As of 30 March, 395,194 COVID-19 tests have been performed, which translates into one test for every 130 persons in Korea.

symptoms associated with COVID-19. There are 635 ‘Screening Centers’ in operation nationwide as of late March.

To cut time needed for sample-taking and further limit exposure of front line medical workers as well as those that are waiting to be tested, our medical community pioneered ‘Drive-through Testing Stations’, allowing drivers to go through the process of registration and specimen collection in under 10 minutes without needing to get out of their vehicles. This has quickened the time involved in the procedure by threefold, allowing up to six sample-takings per hour at ‘Drive-through Testing Stations’ compared to two sample-takings at ‘Screening Centers’. The Government compiled and distributed ‘Standard Operating Procedure Manual for Drive-through Testing Stations’. As of late March, there are 79 drive-through testing stations in operation nationwide.

A number of private hospitals have adopted a phone-booth type testing facility that enables rapid ‘walk-through’ of potential patients while protecting front line medical workers who collect specimens behind clear acrylic panels. Incheon International Airport has introduced “open-air walk-through” testing stations that utilize the naturally windy outdoor environment for ventilation, in order to quickly and safely process a large number of inbound passengers.



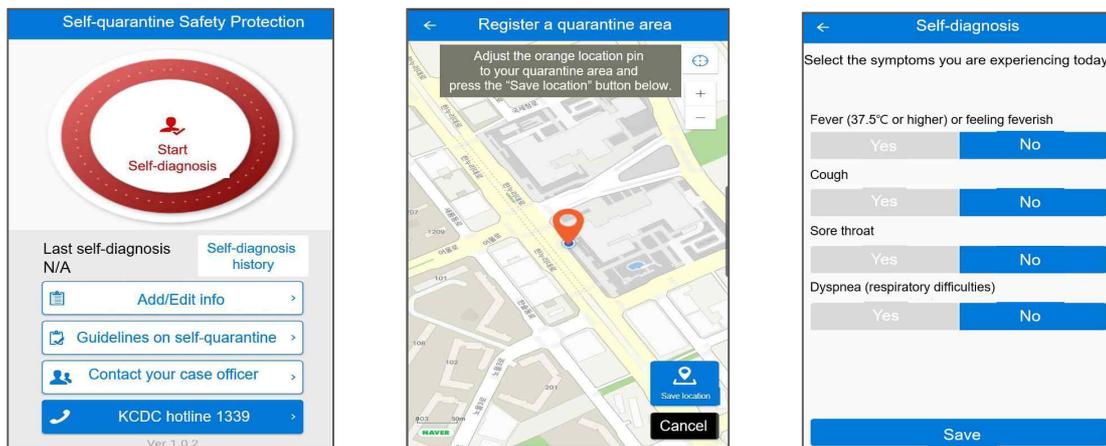
< Drive-through and Walk-through / Open Walk-through Testing Stations in Operation >

➤ **(Tracing : Rigorous Epidemiological Investigations and Monitoring of Contacts)**

The Government is vigorously tracking and testing those who had been in contact with confirmed cases, utilizing credit card transaction history, CCTV footage and mobile phone GPS data when necessary within scope of our domestic law (Infectious Disease Control and Prevention Act). Relevant anonymized information⁵ is disclosed to the public with due care to protect personal information, so that those who may have crossed paths with confirmed cases may get themselves tested. Contacts identified through epidemiological investigations are tested for COVID-19, put under self-quarantine and monitored on a one-on-one basis by assigned public health officials for their safety and health.

⁵ Information required by the public to prevent spread of infectious diseases may be disclosed under the ‘Infectious Disease Control and Prevention Act.’ Disclosure is strictly limited to data relevant and necessary in the prevention of infectious diseases and fully anonymized to protect personal information according to guidelines provided by KCDC.

- ◆ Those that have been identified as contacts with confirmed cases and under self-quarantine are linked to their assigned government case officers through an innovative ‘self-quarantine safety protection app’, which allows the officers to monitor their symptoms twice daily and be alerted when self-quarantine is broken. This tracking of the phone’s GPS location is done with the consent of the contacts. The app also includes guidelines on self-quarantine and contact information of the Korea Centers for Disease Control and Prevention (KCDC) and assigned case officers.



<Self-Quarantine Safety and Protection App>

- ◆ Hospitals and pharmacies have been granted access to patients’ travel histories to a select number of affected countries via our National Health Insurance and International Traveler Information System to aid in the screening of suspected cases of COVID-19 infection so that patients may be tested and, if confirmed positive, treated at the earliest possible time.
- **(Treating : Speedy Recovery of Patients infected with COVID-19)**
- ◆ As COVID-19 infection can manifest with little or no symptoms, we prioritize early detection through preemptive diagnostic screening and rigorous epidemiological investigations, followed by intensive treatment at the earliest possible stage to increase the likelihood of successful recovery. As a result, COVID-19 fatality rate in Korea has been kept relatively low at 1.64% (as of 30 March), and most of the related deaths have been either among the elderly or those with existing medical conditions. The rate is expected to increase in the coming days/weeks as patients under intensive care may succumb to the virus.
 - ◆ Currently, over 79% of fatalities have occurred in patients who are 70 years of age or older. So far no one below 29 years of age has succumbed to COVID-19, and only two fatalities have occurred in the 30-49 age range. The fatality rate among the

younger population (below 49 years of age) remains very low at 0.036%. Although the elderly are more vulnerable to serious complications and deaths from COVID-19, a 97 year old woman recently set the record for being the oldest patient to make full recovery.

| Age Group | Cases | Deaths (%) | Fatality Rate (%) |
|-----------|-------|------------|-------------------|
| Over 80 | 437 | 80 (50.63) | 18.31 |
| 70-79 | 640 | 45 (28.48) | 7.03 |
| 60-69 | 1,218 | 21 (13.29) | 1.72 |
| 50-59 | 1,812 | 10 (6.33) | 0.55 |
| 40-49 | 1,297 | 1 (0.63) | 0.08 |
| 30-39 | 1,002 | 1 (0.63) | 0.10 |
| 20-29 | 2,630 | 0 (0.00) | - |
| 10-19 | 513 | 0 (0.00) | - |
| 0-9 | 112 | 0 (0.00) | - |
| Total | 9,661 | 158 | 1.64 |

<COVID-19 Fatality Rates among Age Groups as of 30 March>

- ◆ To secure hospital beds necessary for treatment, we have designated 67 ‘infectious disease hospitals’ to accommodate exclusively COVID-19 patients, and transferred their existing inpatients to other institutions. Also, to prioritize medical resources to those that are in need of treatment, we established a Patient Management System comprised of a network of medical professionals that categorizes COVID-19 patients into four groups of mild, moderate, severe and extremely severe according to the severity of their symptoms. Patients with mild symptoms with little need for medical care are being accommodated under quarantine in temporarily repurposed corporate and public training facilities (called ‘Living Treatment Centers’), and monitored by healthcare staff at least twice a day for symptoms. Those that develop more serious symptoms requiring medical intervention are promptly put under hospital care, and those that make full recovery according to relevant standards are discharged. Patients in the other three categories of severity are immediately put under hospital care in national infectious disease hospitals or other government-designated medical institutions. As of late March, there are 139 Living Treatment Centers in operation with 14,503 available rooms.
- **(Civic Awareness and Participation)** The Korean Government’s strategy to test, trace and treat, together with the high-level of public trust and civic awareness and adherence to personal hygiene, voluntary testing, self-quarantine, and social-distancing, has effectively slowed the spread of COVID-19.

To contain and minimize the sporadic clusters of local transmissions in various parts of the country, the government has been leading a half-month campaign of strengthened social-distancing with a view to reopen schools in April. The government has advised the public against unnecessary travel and socializing, strongly recommended religious, indoor sports and entertainment facilities to suspend operations, and in case of continued operations to strictly conform to guidelines such as mandatory wearing of masks and records-keeping of participants' contact information. In cases where the guidelines are repeatedly ignored, administrative orders for closure are being issued. Taking stock of the situation in collaboration with city/provincial education authorities, the decision was made to open schools on-line in phases, starting with the final grades in middle and high schools on April 9th.

Public support and participation in the efforts to overcome COVID-19 has materialized into civic activism nationwide. For example, countless people have volunteered to help out in the hard-hit Daegu/North Gyeongsang Province. At one point, there were some six volunteers for every patient/person under self-quarantine.

4. Open and Transparent Response with Minimal Interference in Traffic

- The Korean Government is fully committed to sharing information on developments in our COVID-19 situation and Government policy, both domestically and internationally, in a prompt and transparent manner. Our domestic law (Infectious Disease Control and Prevention Act) ensures the public's right to be informed on the latest developments and responses to outbreaks and infection control. Since day one, press briefings have been held twice a day by the Center of Disaster and Safety Countermeasure Headquarters in the morning and the Central Disease Control Headquarters in the afternoon with simultaneous interpretation into sign language. These briefings are live-streamed through the internet⁶ with simultaneous interpretation into English for international viewers. Regular press releases that cover a wide range of information including the number of confirmed and suspected cases of COVID-19, number of diagnostic tests performed, regional distribution of confirmed cases, epidemiological links, number of contacts under quarantine and number of discharged cases, and various statistics are also provided in English every day⁷.

- On 30 January 2020, in declaring the outbreak of COVID-19 infection as a Public Health Emergency of International Concern (PHEIC), the WHO recommended against travel or trade restrictions. On 11 March 2020, the WHO declared COVID-19 to be a pandemic, but its recommendation on international traffic has remained the same.

⁶ www.arirang.com at 11:00am and 2:00pm daily

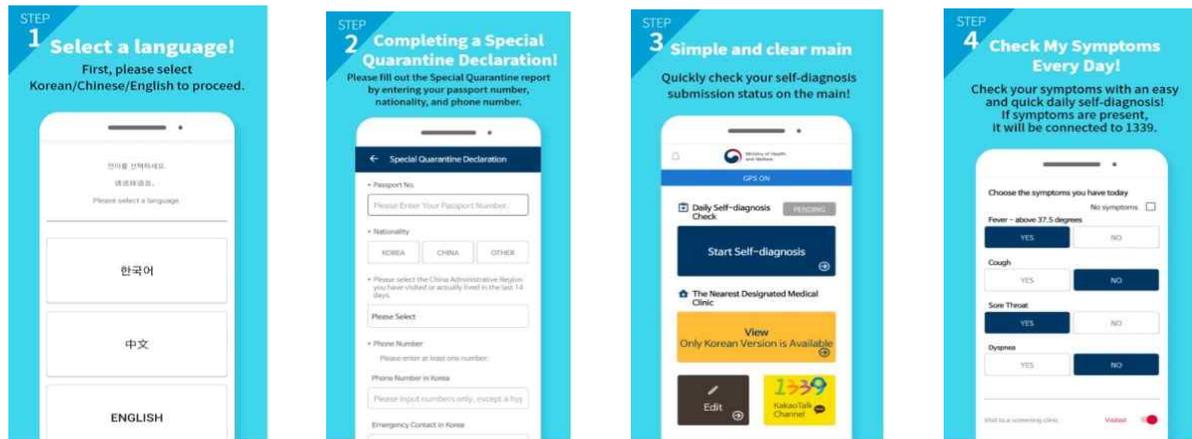
⁷ www.cdc.go.kr/cdc_eng/

- In our fight against COVID-19, the Korean government is committed to complying with WHO recommendations on border controls, i.e. that measures in relations to international traffic that significantly interfere with the movement of people and goods during public health emergencies, need to be proportionate to the public health risk, be short in duration, and be reconsidered regularly as situation evolves.
- ◆ The Korean government's adherence to the principles of openness, transparency and minimal interference to international traffic has been consistently applied to policies on both inbound and outbound travels.

5. Curbing COVID-19 Inflow from Abroad

- In adherence to WHO recommendations, the Korean Government is effectively managing the risk associated with cross-border traffic not with blanket entry bans but with continuous adaptation and fine-tuning of the measures designed to control and keep track of inbound travelers. These have been phased in, broadly corresponding to changing location of the virus outbreaks. The scope of the testing has adapted to the changes, so as to make optimum use of the testing capacity against the multiplying source of risks with inbound travelers. At all phases, those confirmed as positive, both Korean and foreigners, whether at airport quarantine, local medical facilities, temporary testing/quarantine facilities, are promptly taken into medical care.
- **(Phase I: Special Entry Procedure and Self-Diagnosis Mobile App)** In the early stages of COVID-19 epidemic, travelers from only a select number of affected countries, determined by a number of factors such as their geographical proximity to Korea, size of inbound traffic and potential risk, were subject to the Special Entry Procedure and Self-Diagnosis Mobile App. However, in response to the global spread of COVID-19 which culminated in the WHO pandemic declaration, as of 19 March, all travelers entering Korea from abroad, regardless of nationality, became subject to these measures.
 - ◆ **(Special Entry Procedure)** The Special Entry Procedure requires inbound travelers to undergo fever checks, and submit Health Questionnaire and Special Travel Record Declaration upon arrival at the entry hall for immigration. Travelers need to provide their contact information and address in Korea in the Travel Record Declaration. Immigration officials check, on site, whether the travelers can be reached via the phone number provided. Entry is denied if they do not provide a reachable phone number.
 - ◆ **(Self-Diagnosis Mobile App)** Inbound travelers have also been required to install the Self Diagnosis App on their smartphones and submit their health status every day on the app for 14 days. If they show symptoms of COVID-19 infection for more than two consecutive days, the Korea Center for Disease Control and Prevention

and local authorities follow up to take the necessary measures. Those who neglect to submit their health status are tracked down by public health authorities to identify their location and health status. Those unable to download the app on their phones, e.g. holders of 2G mobile phones or those unfamiliar with using apps, are reached and monitored through a call center for 14 days.



<Self-Diagnosis Mobile Applications>

- **(Phase II: Mandatory COVID-19 Testing of All Inbound Travelers from Europe)** In response to the spread of COVID-19 epidemic and increasing influx into Korea of COVID-19 cases originating from Europe, on 22 March, COVID-19 testing became mandatory for all inbound travelers from Europe. Korean nationals are required to take the test at nearby medical facilities after returning home. Foreigners, who are not necessarily enrolled in the Korean public healthcare system, are tested immediately after arrival at a separate facility near the airport. All found negative have been required to quarantine for 14 days.
- **(Phase III: Mandatory Self-Quarantine for All Inbound Travelers)** With the pandemic fast spreading to many other regions and the number of newly confirmed cases growing among inbound travelers, on 29 March, the government decided on uniform measures that would apply to all inbound travelers. As of 1 April, a 14-day quarantine will be mandatory, regardless of nationality. All inbound travelers are required to download the 'Self-Quarantine Safety and Protection App' on their smartphones. Korean nationals and foreign nationals on long term visas (holders of alien registration cards) will be required to self-quarantine at their residence. Those without a place of residence or on short-term visas will be hosted at a government quarantine facility. Testing will be administered to those showing symptoms. In case of inbound travelers from Europe, phase II mandatory COVID-19 testing continues to apply, regardless of symptoms.

- ◆ **(Exceptions for Necessary Travel)** To minimize the restrictive effect on necessary international travel, the 14 day self-quarantine requirement will be waived for holders of A1 (Diplomatic), A2 (Official) and A3 (Treaties) Visas, and those that have been issued a ‘Self-Quarantine Waiver⁸’ at a Korean Embassy/Consulate prior to departure. These travelers are tested for COVID-19 upon arrival, and if tested negative, subject to active monitoring. This includes daily submission of health conditions via the Self-Diagnosis App and answering daily phone calls from health authorities throughout their stay in Korea.
- **(Costs)** The Korean government shoulders all costs involved in the testing and treatment of COVID-19 for both Korean and foreign nationals. The costs related to self-quarantine, including fees charged for the use of government quarantine facilities, are assumed by the individual travelers regardless of their nationality.
- **(Temperature Checks Prior to Boarding Korea-Bound Flights)** As of 30 March, all airlines operating to and from Korea have been asked to conduct temperature checks on all passengers except flight crew, regardless of nationality, prior to boarding. Those with temperatures of over 37.5°C will be denied boarding and refunded. This measure was adopted to minimize the influx of COVID-19 cases into Korea and to ensure the safety of international passengers during their flight.

6. Minimizing COVID-19 Outflow Overseas

- In addition to the above measures to manage the risk of influx of COVID-19 cases into Korea through international travel, the Korean Government also tries to minimize the outflow of COVID-19 from Korea.
- **(Exit Bans)** In accordance with our relevant domestic laws (Quarantine Act Article 24), the Korean government grounds individuals identified as COVID-19 contacts⁹ from exiting the country during their 14 day self-quarantine, regardless of whether they are symptomatic of COVID-19. As of 30 March, over 22,000, identified to have had contact with confirmed cases, have been so grounded during the duration of their self-quarantine.

⁸ Issuance of Self-Quarantine Waivers will be considered for (1) crucial business (e.g. contract signing, investment), (2) academic function (e.g. participation in an academic symposium), and (3) other necessary travel (e.g. public interest, humanitarian reasons)

⁹ Persons who have been in contact with an infected patient, starting two days before the patient showed symptoms.

- **(COVID-19 Free Airport)** Pledging to become a ‘COVID-19 Free Airport’, Incheon International Airport has implemented a full-fledged three step temperature monitoring program on outbound passengers. Temperature checks are conducted at the terminal (1) when entering the departure hall and (2) before entering the security check point (with thermal cameras / when detected with higher body temperature, with non-contact thermometers for more accurate results), and (3) at the boarding gate (with non-contact thermometers). When confirmed to have a fever of 37.5°C or higher, passengers are escorted to the National Quarantine Office for further inspection and may not be allowed to board.
 - ◆ In addition, Incheon International Airport has further strengthened disinfection protocol of its facilities, including special sterilization of check-in counters and security search equipment three times a day. Facilities that are exposed to physical contact with passengers such as elevators and escalators are also disinfected with alcohol three times a day. Similar measures are being implemented in other international airports in Korea.
- To facilitate essential international travel, hospitals in Korea designated by the Korea Centers for Disease Control and Prevention as the COVID-19 Diagnostic Examiner have been authorized to issue standardized ‘Health Status Check Certificates’ certifying that the holder, through a physical evaluation by a clinician, has no cough, shortness of breath, sore throat or any respiratory symptoms, and has tested negative for COVID-19 by RT-PCR testing.

7. Whole-of-Government Adaptive Approach

- Since 23 February, upon upgrading the health alert for COVID-19 to the highest level (“serious”) in the face of the massive outbreak in Daegu, the Korean Government has maintained a concerted whole-of-government approach in the fight against COVID-19. The Prime Minister chairs the Central Crisis Management Committee, comprising all relevant ministries of the central government as well as the seventeen provinces and major cities. Korea is highly devolved, and City Mayors and Provincial Governors are directly elected by the voters. Mobilizing their resources and responsibilities has been crucial in the fight against COVID-19.
- With this approach, we have harnessed the support and participation of local governments in promptly allocating and reallocating the resources for disease control where they are needed the most, staying on joint message and action in the face of the fast evolving challenges of COVID-19, and sustaining the public buy-in around the country for the Government’s efforts.

- This has also enabled us to quickly adjust and fine-tune our measures and solutions with minimum disruption. This concerted, adaptive approach will be maintained in the on-going fight against COVID-19 and in the efforts to overcome its socio-economic consequences.
- In the same spirit of team work, the Korean Government is ready to actively participate in the efforts to strengthen coordinated global response against COVID-19 and better preparedness for the future.

/ END /