The COVID-19 situation and Response Measures of Republic of Korea

Hoon Sang Lee, MD, MPH
Yonsei University
Figure 2. COVID-19 cases per million population reported in the last seven days by countries, territories and areas, 28 September through 4 October 2020**


Map Production: WHO Health Emergencies Programme

© World Health Organization 2020. All rights reserved.

*See data, table and figure notes.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Straight and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
Figure 1: Number of COVID-19 cases reported weekly by WHO Region, and global deaths, 30 December 2019 through 04 October 2020**
COVID-19 Situation in Korea

Cases in Korea (as of 12am on November 28, 2020, data aggregated from January 3)

- Confirmed Cases (accumulation): 33,375
- Released from isolation (Released from Quarantine): 27,349
- Isolated: 5,504
- Deceased: 522
- Daily Change: +504, +246, +252, +6

Testing in Korea (as of 12am on November 28, 2020, data aggregated from January 3)

- Tests Performed: 3,032,004
- Tests Concluded: 2,973,210
- Positive Rate: 1.1%
- Positive tests / total number of tests concluded = 100%

Positive Results (Confirmed Cases): 33375/1.1 %
In Progress: 58794/1.9 %
Negative Results: 2939835/97.0 %
Public Health Response - Governance
Public Health Response for COVID-19 in Korea

**Response to Cases**
- Fast and accurate epidemiological investigation
- Disclosure of whereabouts of confirmed cases (utilizing technology)
- (utilizing technology)
- Self-quarantine of all contacts

**Early Detection**
- Expansion of diagnostic testing
- Expansion of local screening center
- Specimen collection via screening station including drive-thru screening stations
- Aggressive testing on all high-risk groups

**Quarantine at the point of entry**
- Special entry procedure
- Recommend minimizing travel plans
- Provision of travel history to healthcare providers

**Treatment of Non COVID-19 Patients**
- Operation of National Safe Hospitals
- Allow receiving prescriptions over the phone and by proxy

**Treatment of COVID-19 cases**
- Patient classification and bed allocation by severity
- Severe cases are treated at hospitals while mild cases are treated at facilities
- Set up Living and Treatment Centers (Mild cases)
Public Health Response - Governance

- Cooperation among the Central Government and Local Governments

- Risk communication, campaign, and disclosure of information in a prompt and transparent manner; provision of counseling for the public via 1339 and public health centers

- Reinforcement of government measures such as the adherence to the code of conduct
Public Health Response - Governance

Response System

Central Disaster and Safety Countermeasure Headquarters
- Head: Prime Minister
  - Vice Head 1: Minister of Health and Welfare
  - Vice Head 2: Minister of Interior and Safety

Central Disaster Management Headquarters
- Head: Minister of Health and Welfare

Central Disease Control Headquarters
- Head: Director of NCDC

Pan-government Countermeasures Support Headquarters
- Head: Minister of Interior and Safety

Relevant Ministries and Organizations
- Central government and relevant organizations

Local Disaster and Safety Management Headquarters (local governments)
- Infectious Disease Prevention and Control Teams (local governments)
COVID-19 Response in Korea

- Test may be conducted based on a physician's judgement.
- Focus on treatment of severe cases, Est. Living Treatment Centers 1- Apr. 301.
- Quarantine & test Shincheonji member (19,993).
- Expanded the scope of testing (Testing may be conducted based on a physician's judgement).
- Set "Central Disaster Management H.Q."
- May 6 Distancing in daily life
- April 1 Mandatory 14 days quarantine on all passengers from overseas
- Discharged Cases: 9,632
- Active Cases: 1,021
EOC (Emergency Operation Center)

24hr Situation Room | Response HQ
---|---
Briefing Room | Video Conference Room
EOC (Emergency Operation Center)
COVID-19 Response in Korea - Testing

- **Daily Capacity:** Average 15,000 ~ Max. 20,000
- **Turn Around Time:** 6 ~ 24hrs
- **Testing Institutions:** Total 118

668,492 tests have been conducted (As of May 11)

KCDC, National Quarantine Station 4, Research Institutes of Public Health and Environment (RIPHEs) 18, Private medical Labs and hospitals 95

**Key Dates:**
- Feb. 7: Private medical institutions take diagnostic testing
- Mar. 7: Drive Thru Screening Station
- Mar. 22: Increased the number of screening stations (including private hospitals)
- Jan. 27: KCDC Emergency Meeting to secure supply of diagnostic products

**Graph Details:**
- New
- Cumulative
## The Stage of Laboratory Testing

<table>
<thead>
<tr>
<th>Pre-stage</th>
<th>1 stage</th>
<th>2 stage</th>
<th>3 stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TTX(Table Top Exercise) for Disease X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan-11</td>
<td></td>
<td>Establish Pan-corona virus lab testing</td>
<td></td>
</tr>
<tr>
<td>Jan-13</td>
<td></td>
<td>Start to develop SARS CoV-2 specific-real time RT-PCR</td>
<td></td>
</tr>
<tr>
<td>Jan-22</td>
<td>Transfer technique to 7 local public health lab(1st)</td>
<td>Transfer technique to 11 local public health lab(2nd)</td>
<td></td>
</tr>
<tr>
<td>Jan-24</td>
<td></td>
<td>Transfer technique to 7 local public health lab(1st)</td>
<td></td>
</tr>
<tr>
<td>Jan-28</td>
<td></td>
<td>Transfer technique to 7 local public health lab(1st)</td>
<td></td>
</tr>
<tr>
<td>Jan-29</td>
<td></td>
<td>Establish SARS CoV-2 specific-real time RT-PCR</td>
<td></td>
</tr>
<tr>
<td>Jan-31</td>
<td></td>
<td>• Disclose the KCDC protocol(real time RT-PCR) to related society</td>
<td></td>
</tr>
<tr>
<td>Feb-4</td>
<td>• Transfer new technique to 18 local public health lab</td>
<td>• Start to recruit and evaluate potential EUA products</td>
<td>• Decide to operate EUA</td>
</tr>
<tr>
<td>Feb-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Detailed Activities:
- **Decide to operate EUA**
- **Start to recruit and evaluate potential EUA products**
- **Conduct evaluation test performance with medical Lab. Specialist**
- **Conduct in cooperation with the Korean Society for Laboratory Medicine**
- **Transfer new technique to 18 local public health lab**
- **Establish SARS CoV-2 specific-real time RT-PCR**
- **Establish Pan-corona virus lab testing**
- **TXX(Table Top Exercise) for Disease X**
Ensuring early patient detection through screening clinics and diagnostic testing

- Operation of Drive-Thru Sample Collection & Screening Clinics
Application and Web Services to find National Security Hospital and Screening Centers

Finding nearby screening centers

A list of national security hospitals (National COVID-19 screening center app)
Publicly Distributed Face Mask Information Service

DATA GENERATION
- MFDS, HIRA, Pharmacy, Post office, Nonghyup
- Retail platform
- Pharmacy
- Post office
- Hanaro Mart
- Health Insurance Review and Assessment Service (HIRA)
- System preventing multiple purchases of masks

DATA PROVISION
- MSIT, MOIS, NIA, Cloud companies, Naver, Kakao
- Open data
- NIA National Information Society Agency
- Map API of Naver and Kakao

DATA USE
- MSS, Web service and app developers, General public
- Private web portals & developers
- Web & App development service
- Support cloud services for API, web services, and applications
- Web
- APP
- General Public

Develop & operate mask API
Support cloud services for API, web services, and applications
Contact tracing strategy: stepwise approach

**Investigation**
- Interview
  - Obtain information through patient interview (identify route)
  - If necessary, perform preemptive defense against infectious diseases

**Risk assessment**
- Collective objective information
  - Gather additional information
  - Check and verify results of the interview
  - Perform evaluation for the classification of contacts

**Contact classification**
- Investigate medical records
- Phone location information (GPS mobile)
- Card transaction log
- CCTV (Closed-Circuit Television)

**Contacts management**
- Close contact
- Casual contact
- Move restriction
- Sx. monitoring

**Contents**
- Method/Tool
  - Interview
    - Patient
    - Primary physician
    - Family
  - Investigate medical records
  - Phone location information (GPS mobile)
  - Card transaction log
  - CCTV (Closed-Circuit Television)

- Perform contacts classification and management by following guidelines
Contact tracing strategy
Mobile Data Utilization

Sharing of Location and Movement
Information of the Confirmed Case
COVID-19 Epidemiological Investigation Support System

System User Interface (UI)

Movement Paths of Confirmed Cases (Sample)
COVID-19 Epidemiological Investigation Support System

Figure 17 COVID-19 Data Collection Procedure Before & After COVID-19 Epidemiological Investigation Support System

Table 3 Benefits of COVID-19 Epidemiological Investigation Support System

<table>
<thead>
<tr>
<th>Contact tracing method (time per case)</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manually tracked by health workers (one day per case)</td>
<td>Automated tracing (ten minutes per case)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management of access record</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing into a paper ledger</td>
<td>Automated tracking of log-in records</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coordination among agencies</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fragmented coordination by phone, e-mail</td>
<td>Multi-agency coordination under a central platform</td>
<td></td>
</tr>
</tbody>
</table>

COVID-19 SMS

* Paperwork and contacts needed amongst 28 organisations supporting KCDC have been replaced with the automatic system.

- **Analysis on the movement of confirmed cases**
  - Before application: 24h
  - After application: 10m

- **Management of access to personal information**
  - Before application: Inefficient management by hand-written records
  - After application: Efficient management by computerised records

- **Coordination between organisations**
  - Before application: Overloaded work and delayed contact
  - After application: Real-time information interchange
SMART quarantine information system after MERS outbreak in 2015
Quarantine and special immigration procedure flow

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landing</td>
<td>Fill out the health condition questionnaire and special quarantine declaration. Use the dedicated arrivals hall.</td>
</tr>
<tr>
<td>Quarantine</td>
<td>Submit the health condition questionnaire. Check body temperature. Koreans get notification for self-quarantine.</td>
</tr>
<tr>
<td>Special immigration declaration</td>
<td>Submit the special quarantine declaration. Verify domestic contact information. Install the self-diagnosis app and self-quarantine safety protection application.</td>
</tr>
<tr>
<td>Test</td>
<td>Those without symptoms: Receive quarantine certificate and placed under 14 days of self-quarantine. Those with symptoms: Get test in Incheon Airport Quarantine Center. Positive: Treated in hospitals or living and treatment support center. Negative: Self-quarantine for 14 days.</td>
</tr>
</tbody>
</table>

* Measures to enhance infection prevention and control of entrants from abroad are being updated and can be found from regular briefing of Central Disaster and Safety Countermeasure Headquarters on COVID-19 [http://ncov.mohw.go.kr](http://ncov.mohw.go.kr)
Quarantine and special immigration procedure flow

Entrants

Asymptomatic

Korean nationals
- Self-quarantine for 14 days
  - Europe and U.S
    - tested within three days (Install the Self-Quarantine Safety Protection App)
  - Others
    - tested within 14 days (Install the Self-Quarantine Safety Protection App)

Foreign nationals (Long-term visas)
- Self-quarantine for 14 days
  - Europe and U.S
    - tested within three days (Install the Self-Quarantine Safety Protection App)
  - Others
    - tested within 14 days (Install the Self-Quarantine Safety Protection App)

Foreign nationals (Short-term visas)
  - Europe and U.S
    - Tested at airport (testing may take up to two days)
    - facility quarantine for 14 days
  - Others
    - tested within 14 days (Install the Self-Diagnosis App)

Those exempt from quarantine
- Tested at airport (testing may take up to two days)
- active monitoring (Install the Self-Diagnosis App)
<table>
<thead>
<tr>
<th>Start to Mobile app</th>
<th>Proceed with special quarantine form</th>
<th>Proceed with daily Self Health Check</th>
<th>Check screening clinics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self Health Check Mobile App</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special Quarantine Declaration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Passport No. (パスポート番号)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please Enter Your Passport Number.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Place select the Region you have visited or actually lived in the last 14 days. (最近14日以内に訪問したり、実在の居住地域を選択してください。)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Select (国番号選択)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Place Number (携帯電話番号)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PHONE NUMBER VERIFICATION</strong> (携帯電話番号確認)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Contact in Korea (携帯で連絡可能な知人の電話番号)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please input numbers only, except a hyphen.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of School in Korea (韓国内の学校名)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please enter the name of the school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daily Self-diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choose the symptoms you have today (今日の症状を選択してください)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Fever - above 37.5 degrees (または発熱が発生している)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No symptoms (無症状)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES (はい)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO (いいえ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cough (せき)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES (はい)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO (いいえ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sore Throat (くさつぼみ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES (はい)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO (いいえ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyspnea (呼吸困難)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES (はい)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO (いいえ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Submit (提出)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>View Only Korean Version is Available (コロナ専用診療所の確認)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Nearest Designated Medical Clinic (近くのコロナ専用診療所)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.mohw.go.kr">www.mohw.go.kr</a></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Quarantine/Observation Facility & Laboratory Facility

< Quarantine/Observation Facility >

< Laboratory (BSL3) >
# Self-quarantine Safety APP

## Self-quarantine Safety APP for Self-quarantined Subjects

### Start page
- **Self-diagnosis**
- **Register quarantine location**
  - **Move the map and press the location you want to change for more than 1 second**

### Self-Diagnosis
- **Select today’s symptoms**
  - Fever - above 37.5 degrees
  - Temperature
  - Cough
  - Sore Throat
  - Dizziness

### Self-quarantine Guidelines
- **List and Status of Self-quarantined Subjects**
  - **My profile**
  - **List of self-quarantined**
    - **Total: 8**
    - **GU Changgyu (29)**
      - Symptomatic / Not submitted
      - Not Available
    - **Kim Injeong**
      - Not submitted
      - Not available
    - **Yim Gyu-hyun**
      - Not submitted
      - Not Available
    - **Jeong Ji-young (29)**
      - Symptomatic / Not submitted
      - Out of bounds

### Out of Bounds Alerts
- **Current location of the quarantined subject**
- **Symptomatic Subject Alert**
  - **JO Gyu-hwan reported having a fever, a cough, a sore throat, and respiratory difficulties.**

Clova CareCall Service by the city of Sungnam
AI Based Chabot Service for Checking Self Quarantine Status

1. Input target
2. Auto-call twice a day
3. Reply to fever status and other symptoms
4. Report fever status and other symptoms
5. If symptoms exist, contact individually
Establishment of Patient Management System

<table>
<thead>
<tr>
<th>Establishment of Patient Management System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment System Based on Severity</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Securing Beds For Hospitalized Treatment</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Providing Healthcare Staff and Protective Gear</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Managing Medicinal Supplies and Developing Vaccines and Therapies</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Examples of Living and Treatment Support Centers

Gyeongbuk-Daeug Living and Treatment Support Center 1

- **Current status:** Gyeongbuk-Daeug Living and Treatment Support Center 1 opened at the Samsung Human Resources Development Institute in Yeongdeok-gun, Gyeongsangbuk-do.

- **Capacity:** 210 mild cases diagnosed in Daeug and Gyeongsangbuk-do

  < Staff >

  - Healthcare and living support service provided through the pan-governmental support team.
  - **(Healthcare staff)** 3 physicians, 6 nurses, and 9 nurse’s aides.
  - **(Medical supplies)** Medical supplies such as self-control hygiene kits and protective clothing prepared.
    - 400 self-control hygiene kits, 780 N95 masks, 780 Level-D protective suits, 1,170 pairs of latex gloves, 1,500 masks for the public, 300 specimen collection kits, etc.

  - **(Healthcare service)** Patients are closely monitored and managed on a continual basis.
    - Self-monitoring by patients (body temperature, respiratory symptoms, etc.) is conducted twice a day.

<Photos of Gyeongbuk-Daeug Living and Treatment Support Center 1>
Social distancing campaign

As of 23 March

Avoid physical contact with other people. Put 2-meter “healthy distance” between yourself and others.

No night out
No religious gathering
No indoor fitness facilities

As of 21 March

For the next 15 days, please participate in enhanced social distancing.

Stay home as much as possible.
Cancel or postpone non-essential travel, events, and social gatherings.

High-risk facilities are strongly recommended to suspend operation.
Religious facilities, indoor fitness facilities, nightlife venues

Venues that remain in operation must strictly comply with the infection prevention guidelines.
Nation Wide Social Distancing

Initiating from Aug. 23

Implementation of Nationwide Social Distancing: Level 2

“Mandatory Mask-Wearing” (Effective as of 12 AM, Aug. 23)

Hold on!
Let’s take a break to stop COVID-19

- Refrain from going outside
- Wear a mask
- Wash your hands
- Keep a distance 2m
### Five levels of social distancing

A revised, five-level social distancing scheme will go into effect from Saturday. The rules have new levels of 1.5 and 2.5.

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
<th>Level 1</th>
<th>Level 1.5</th>
<th>Level 2</th>
<th>Level 2.5</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Sporadic outbreaks</td>
<td>Community transmission begins</td>
<td>Full-blown community transmission begins</td>
<td>Nationwide epidemic begins</td>
<td>Full-blown nationwide epidemic begins</td>
<td></td>
</tr>
<tr>
<td>Outbreak status</td>
<td>• Seven-day average of daily new infections under 100 in the capital area; 30 in South and North Chungcheong, South and North Jeolla and South and North Gyeongsang provinces; 10 in Gangwon and Jeju Island</td>
<td>• Seven-day average of daily new infections under 100 in the capital area; 30 in Chungcheong, Jeolla and Gyeongsang provinces; 10 in Gangwon and Jeju Island</td>
<td>• When any of the following three criteria are met: 1) New infections double in an affected region after one week of Level 1.5 social distancing 2) Level 1.5 infections continue simultaneously in two or more regions 3) Nationwide daily infection cases remain over 200 for a week</td>
<td>• When any of the following two criteria are met: 1) Nationwide seven-day average of new infections stays between 400-500 2) Nationwide infections spike under Level 2 social distancing</td>
<td>• When any of the following two criteria are met: 1) Nationwide seven-day average of new infections between 800-1000 2) Nationwide infections spike under Level 2.5 social distancing</td>
<td></td>
</tr>
<tr>
<td>Core restrictions</td>
<td>• In-person class attendance capped at two-thirds of student body, with adjustments allowed</td>
<td>• In-person class attendance strictly limited to two-thirds of student body</td>
<td>• In-person class attendance capped at one-third of student body, except high schools at two-thirds</td>
<td>• In-person class attendance capped at one-third of student body</td>
<td>• All classes move online</td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>• Gatherings of over 500 people require prior consultations with local authorities. Antivirus measures mandatory throughout event</td>
<td>• Festivals and certain other types of gatherings with over 100 participants banned</td>
<td>• All gatherings of over 100 people banned</td>
<td>• All gatherings of over 50 people banned</td>
<td>• All gatherings of over 10 people banned</td>
<td></td>
</tr>
<tr>
<td>Social gatherings</td>
<td>• Worship services allowed, with every other seat left empty. Meals and nonworship gatherings discouraged</td>
<td>• Regular worship services allowed with indoor occupancy rate under 50 percent. Meals and nonworship gatherings prohibited</td>
<td>• Regular worship services allowed with indoor occupancy rate under 20 percent. No meals or nonworship gatherings</td>
<td>• All religious services move online. A maximum of 20 persons can attend in person for assistance. No meals or nonworship gatherings</td>
<td>• All religious services move online. No meals or nonworship gatherings</td>
<td></td>
</tr>
</tbody>
</table>
Social Distancing in School
QR Code Based Check In to Facilities
Contact-tracing tools in the nine countries and regions

Contact-tracing tools
- Telephone interviews
- Computerised system
- Medical records
- Credit card transactions
- Bluetooth
- Closed-circuit television
- Mobile phone-based global positioning system
- QR codes
- Mobile apps

Country or region
- Germany
- Hong Kong
- Japan
- New Zealand
- Norway
- South Korea
- Spain
- Singapore
- United Kingdom
Sources, Categories, Collection, and Distribution of Data
# Principles for COVID-19 Response

1. **Minimum restrictions and quarantine of high-risk groups**

2. **Public participation based on openness and transparency**

3. **Achieve Universal Health Coverage through the NHI covering all citizens**

4. **Cooperation of central and local governments & all members of society**

5. **Innovative and creative measures utilizing cutting-edge technology**
Principles for COVID-19 Response

1. Minimum restrictions and quarantine of high-risk groups
   - Did not control borders and minimize restrictions on international exchange
   - Quarantined high-risk groups (i.e. 9,000 Shincheonji church members)
   - Other citizens are encouraged to practice social distancing

2. Public participation based on openness and transparency
   - Provide transparent information via briefings held twice a day
   - The public follow personal hygiene guidelines and social distancing

3. Achieve Universal Health Coverage through the NHI covering all citizens
   - Provide equal treatment for Korean and foreign nationals free of charge
Principles for COVID-19 Response

4 Cooperation of central and local governments & all members of society

- Central government: Overall management of the situation and response
- Local governments: Epidemiological investigation, disinfection, and patient treatment
- Medical personnel: Patient treatment and research
- Citizens: Personal prevention measures

5 Efficient and creative measures utilizing cutting-edge technology

- Self-health check mobile App/Self-Quarantine App
- Drive-thru & Walk-Thru screening station
Social distancing campaign

| Case 1   | Self-Quarantine Safety Protection App |
| Case 2   | Self-Health Check App |
| Case 3   | AI Care Call Service  
(for active monitoring) |
| Case 4   | Mask Rationing System and Mask Alert Apps |
| Case 5   | Informing the Public of Confirmed Cases |
| Case 6   | Self-Quarantine |
| Case 7   | Screening Stations  
(Drive-Thru and Walk-Thru) |
| Case 8   | Living Treatment Centers |
| Case 9   | National Safe Hospitals |
| Case 10  | Temporary Quarantine Facility  
(Quarantine facility for short-term foreign inbound travelers) |
Daily new confirmed COVID-19 cases

Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.

Source: European CDC – Situation Update Worldwide – Last updated 8 October, 10:05 (London time), Official data collated by Our World in Data
CC BY
Case fatality rate of the ongoing COVID-19 pandemic

The Case Fatality Rate (CFR) is the ratio between confirmed deaths and confirmed cases. During an outbreak of a pandemic the CFR is a poor measure of the mortality risk of the disease. We explain this in detail at OurWorldInData.org/Coronavirus

Source: European CDC – Situation Update Worldwide – Last updated 8 October, 10:05 (London time)
Factors for earlier success for responding to COVID-19 in Korea

- Test, Trace/Isolate, Treat
- National Health Insurance
- Social Distancing / Mask
- Use of Innovative Solution / ICT
- Timely policy decision and rapid/bold execution
- Experience of 2015 MERS outbreak

- No border closure
- No lock-down
- Open & transparent approach
### Changes after 2015 MERS Outbreak

- **Reorganization of KCDC (now KDCA)**
  - ✓ EOC (Emergency Operation Center)
  - ✓ Health Communication Division

- **Expanding the response capacity**
  - ✓ EIS Officers: 30s -> 120s
  - ✓ City/Province Infectious Disease Support Team

- **Legal and administrative measures in place**
  - ✓ Emergency Use Authorization
  - ✓ Infectious Disease Control and Prevention Act
  - ✓ Personal Information Protection Act (PIPA)
Issue with Data Privacy

- Legal and administrative measure in place – 2015 MERS outbreak
  - Infectious Disease Control and Prevention Act
  - Personal Information Protection Act (PIPA)

- Issue with data
  - Data privacy – A balancing Act?
  - Individual data privacy right <-> Public safety

- Public consensus
  - Supportive – Especially after the 2015 MERS Outbreak Experience
  - Openness and transparency by government – Sharing of too much information?
A Third Wave of Coronavirus Infections in South Korea?
Daily new cases of COVID-19 in South Korea (Mar-Nov 2020)

Source: European CDC via Our World in Data

Pipelines of vaccines & treatments by country
(in units)

- USA: 257
- China: 62
- Canada: 43
- UK: 32
- Korea: 18
- Japan: 16

*12 candidates identified in Korea with 3 in preclinical stage and another 3 under clinical trial or filed for clinical trial, as of May 6. (Source: GlobalData)

Current status of COVID-19 vaccine & treatment development in Korea

<table>
<thead>
<tr>
<th>Company</th>
<th>Phase or status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genexine</td>
<td>Neutralizing antibody identified in primates, phase 1 clinical trial due on early June</td>
</tr>
<tr>
<td>HuVet Bio, Opipharm</td>
<td>Neutralizing antibody identified in animals, to complete preclinical study within this year</td>
</tr>
<tr>
<td>Celltrion</td>
<td>38 neutralizing antibody candidates obtained, preclinical study due in June, clinical trial in July</td>
</tr>
<tr>
<td>GC Pharma</td>
<td>Clinical trial for plasma-derived therapy due in July, launch planned for H2</td>
</tr>
<tr>
<td>SK Bioscience</td>
<td>Vaccine candidate tested in animals, preclinical study is due</td>
</tr>
<tr>
<td>Bukwang Pharm</td>
<td>Phase 2 trial for hepatitis B treatment Leovir approved to test its efficacy as potential COVID-19 cure</td>
</tr>
<tr>
<td>Immunemed</td>
<td>Conditional phase 2 trial for its cure due in Korea in June, phase 1 trial due in Italy in July</td>
</tr>
</tbody>
</table>

Graphics by Minu Kim and Song Ji-yeon
Thank You