

# COVID-19 and Policy Responses: Prospects and Challenges for Government Innovations



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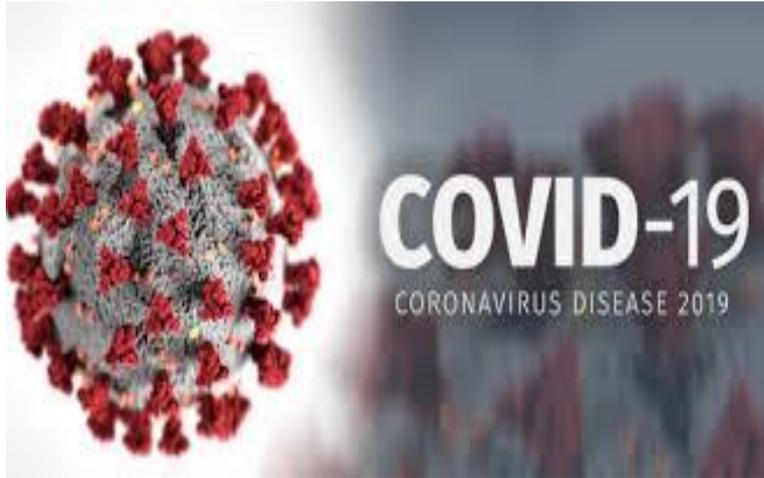
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# All Governments are being Tested Simultaneously....

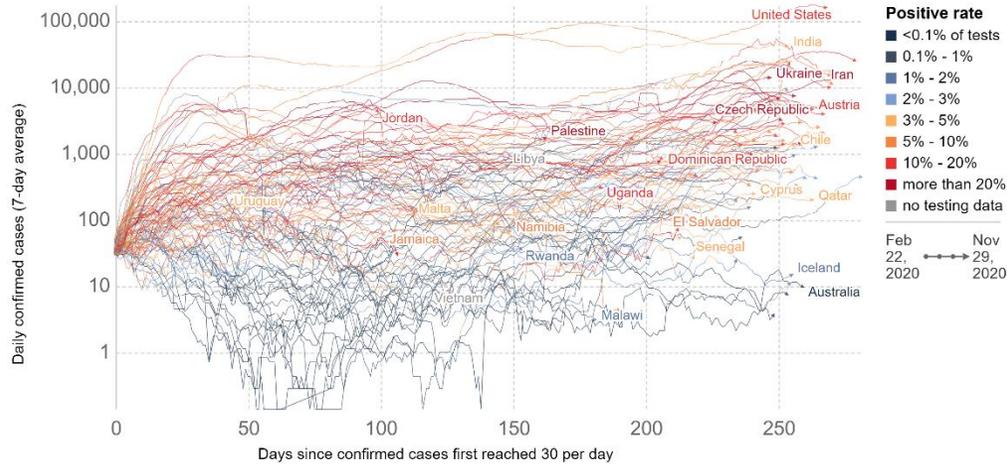
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# Figures Daily Updated!!!

## Daily new confirmed cases of COVID-19

The line is blue when the rate of positive tests in a country is low – this means a country performs many tests relative to the size of the outbreak. Red indicates a high positive rate of tests. This suggests that the true number of infections may be far higher than the number of confirmed cases.

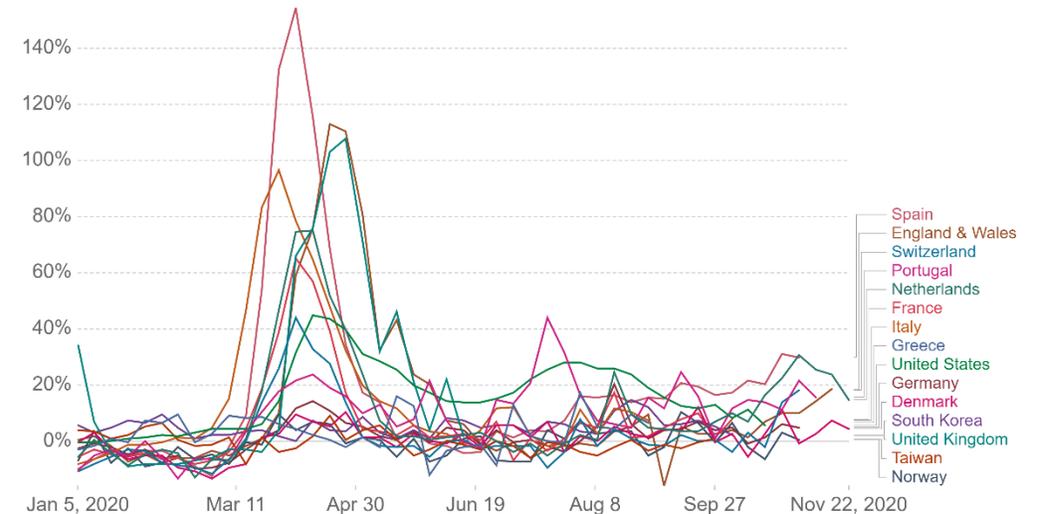


Source: Johns Hopkins University CSSE COVID-19 Data – Last updated 30 November, 06:01 (London time), Official data collated by Our World in Data  
 Note: Only countries for which testing data is available are included. Details about this data can be found at [OurWorldInData.org/coronavirus-testing](https://OurWorldInData.org/coronavirus-testing).  
 OurWorldInData.org/coronavirus • CC BY



## Excess mortality during COVID-19: Deaths from all causes compared to previous years, all ages

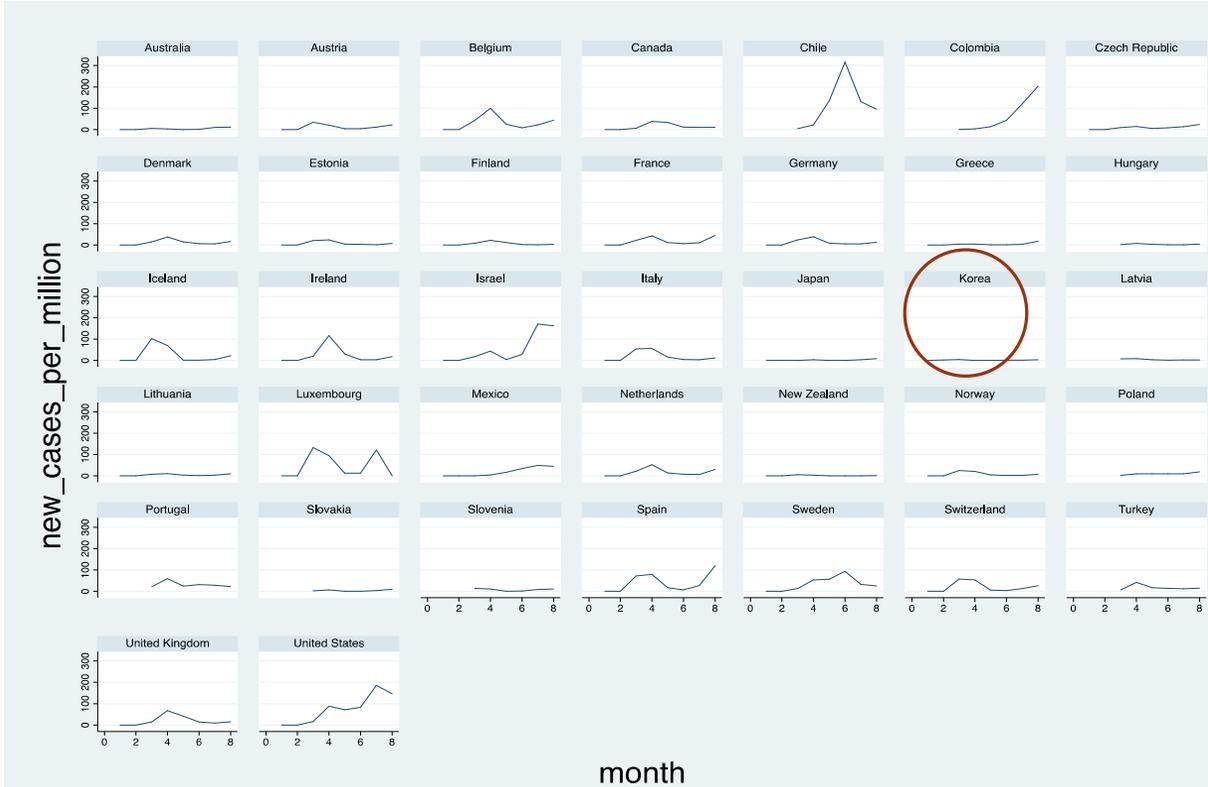
Shown is how the number of weekly deaths in 2020 differs as a percentage from the average number of deaths in the same week over the previous five years (2015–2019). This metric is called the P-score. We do not show data from the most recent weeks because it is incomplete due to delays in death reporting.



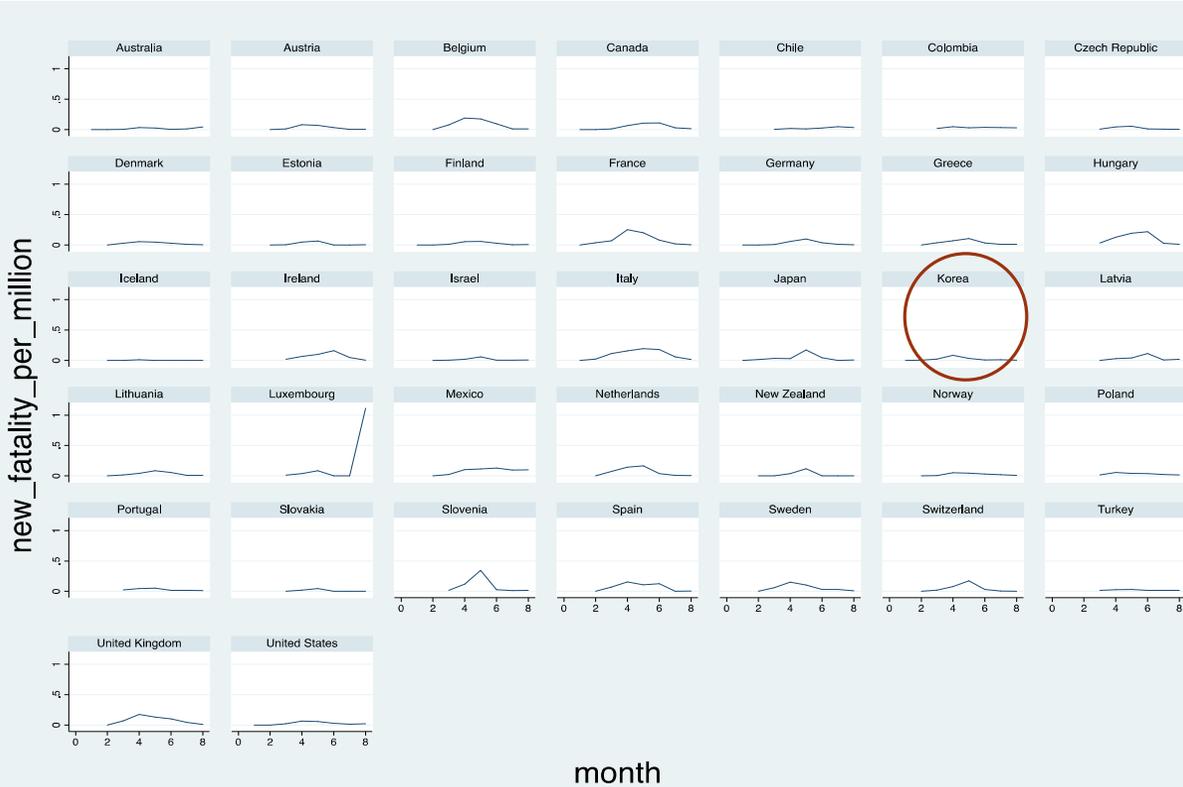
Source: Human Mortality Database (2020), UK Office for National Statistics (2020)  
 OurWorldInData.org/coronavirus • CC BY  
 Note: Dates refer to the last day in each reporting week for most but not all countries. More details can be found in the Sources tab.



# How Do Countries Do in Mitigating COVID-19?



Graphs by location



Graphs by location

# Citizens and Government are at Crossroads

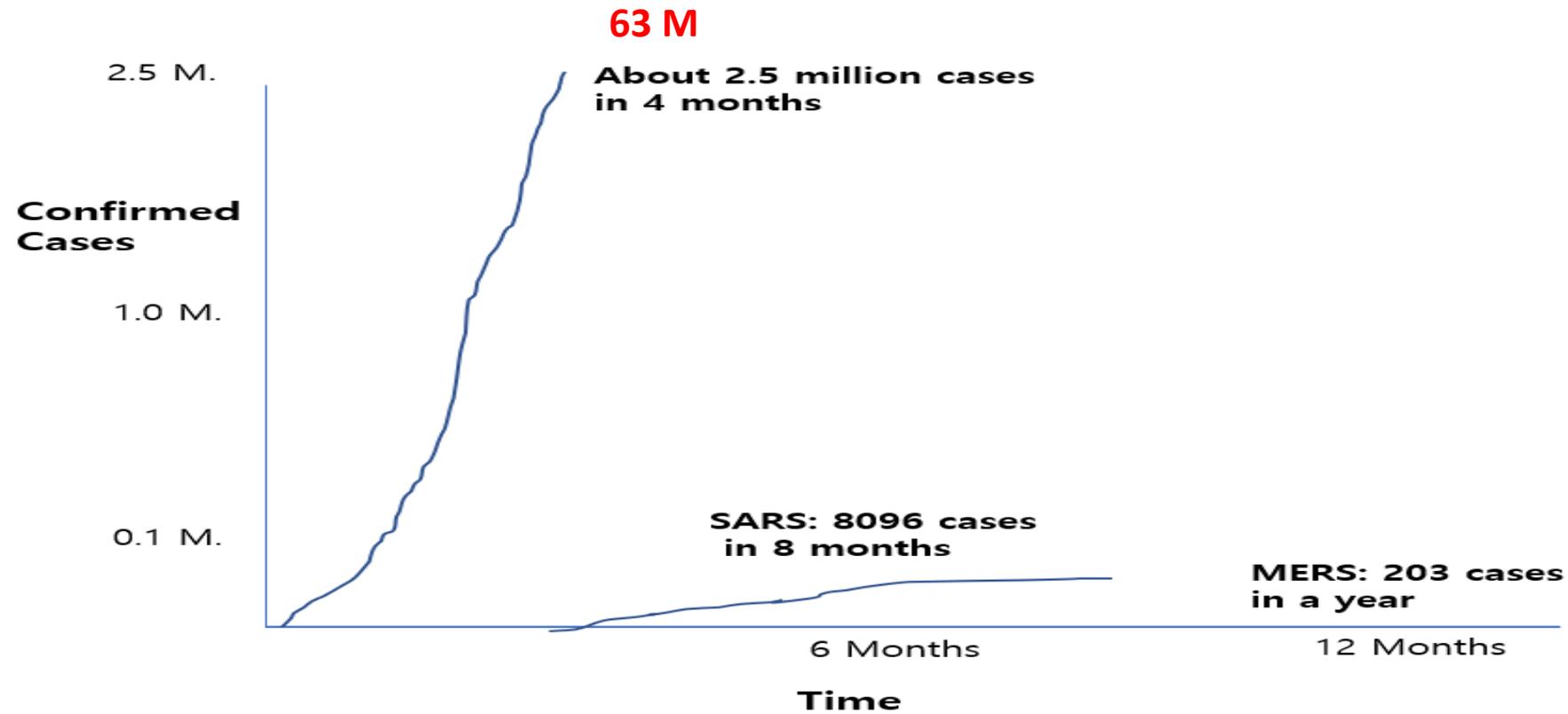
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- More and More SERVICES
- Better and Better SERVICES
- Faster and Faster SERVICES
- More Transparent and Accountable GOVERNMENT
- But ...Less and Less TAX...

More and More Problems  
More and More Complex  
More and More Complicated  
More and More Uncertain

# COVID-19? Over 63 Million Confirmed Cases and 1.3 Million Deaths

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# Different Responses by Countries

	Korea	Japan	USA	Italy
<b>Approach</b>	Agile Responses Proactive Adaptive Learnings	Passive and Self-restraint (Soft) Politized	Passive and Reactive Politized	Passive Reactive and Active
<b>Policy Tools:</b>	3 T Transparency and Flexible Tools	NPIs Passive Testing	Passive Testing and Partial Lockdowns Variations	School closing Workplace closing Restriction gatherings Internal movement control International travel control
<b>Public Trust</b>	High	Medium	Medium/Low	Medium
<b>Government Roles</b>	High	From Low to Medium	From Low to Medium	From Low to High
<b>Democracy / Mitigation</b>	Democracy = Mitigation	Democracy > Mitigation	Democracy > Mitigation	Democracy >< Mitigation
<b>NPIs and Citizen Participation</b>	High	High	Low	Medium

# COVID-19 and Korea...

## How South Korea Successfully Managed Coronavirus

The country has blended technology and testing like no other

SHARE TEXT

387 RESPONSES

By [Timothy W. Martin](#) and [Dasl Yoon](#)  
Sept. 25, 2020 10:32 am ET

SEOUL—South Korea appears to have cracked the code for managing the coronavirus. Its solution is straightforward, flexible and relatively easy to replicate.

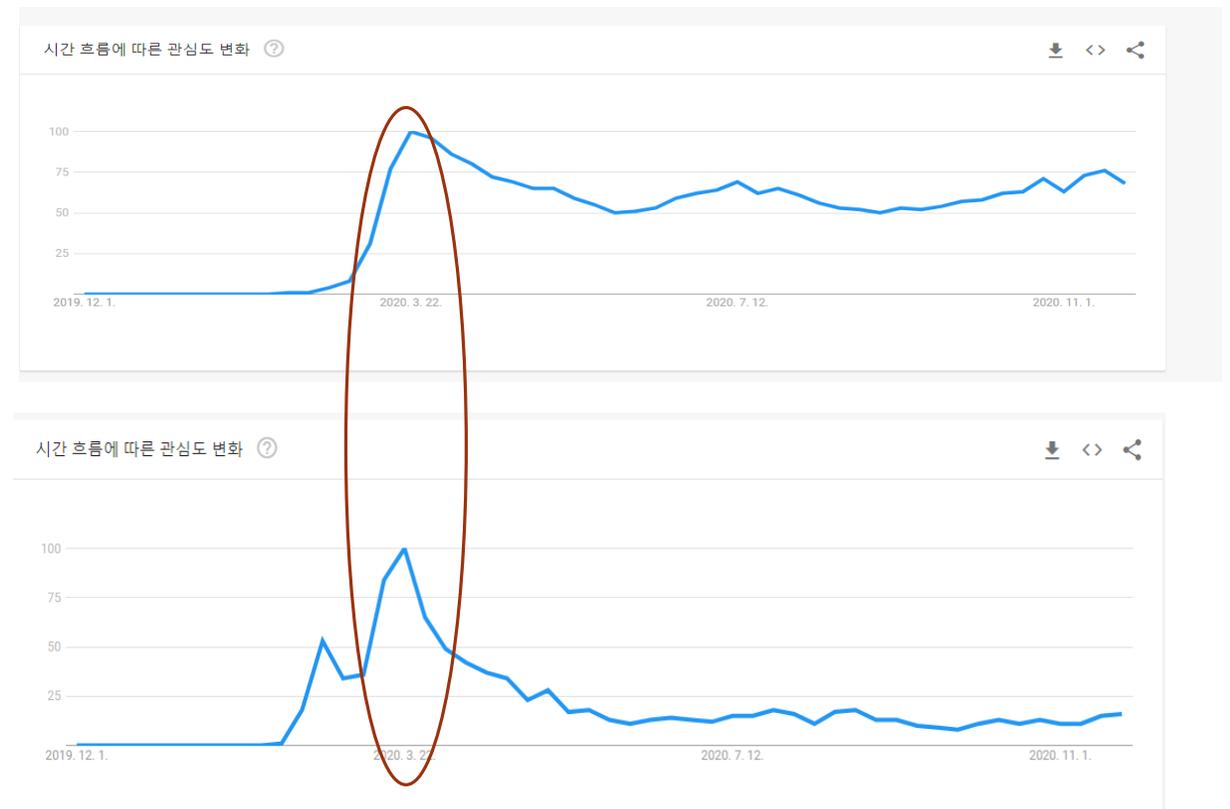
The country has averaged about 77 new daily cases since early April and recently suppressed [a spike in infections](#). Adjusting for population, that would be the equivalent of about 480 cases a day in the U.S., where new daily cases have averaged about 38,000 over the same period. Total deaths in the U.S. due to Covid-19 [just surpassed 200,000](#).

South Korea [halted virus transmission](#) better than any other wealthy country during the pandemic's early months. It was about twice as effective as the U.S. and U.K. at preventing infected individuals from spreading the disease to others, according to a recent report from a United Nations-affiliated research network. South Korea's economy is expected to decline

Covid-19

Covid-19  
Korea

### Google Trend: COVID-19 and Korea



# The Answer is in Controlling “R”

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$$R = P * C * D$$

P is possibility at the individual level: wearing masks, personal sanitization

C is contacts and contact at the social level: social distancing

D is duration at the policy and governance level: testing, tracing, treatment....

A close-up photograph of a person's hands being washed in a white sink. The faucet is on the left, and water is running. The person's hands are covered in white soap suds. The background is a plain white wall. The image is slightly blurred, focusing on the hands and the water.

## Critical Factors:

- Learning from MERS
- Agility, Adaptability, Ability (3A)
- Testing, Tracing, Treatment (3T)
- Transparency, Technology, Trust (3T)
- Governance and Participation

# Works on COVID-19

Public Adm Rev. 2020 May 20 : 10.1111/puar.13214.  
doi: [10.1111/puar.13214](https://doi.org/10.1111/puar.13214) [Epub ahead of print]

PMCID: PMC7267241  
PMID: [32836434](https://pubmed.ncbi.nlm.nih.gov/32836434/)

## Fighting COVID-19 with Agility, Transparency, and Participation: Wicked Policy Problems and New Governance Challenges

M. Jae Moon<sup>ORCID</sup> 1 \*

► Author information ► Article notes ► Copyright and License information [Disclaimer](#)

### Abstract

Go to:

*Governments are being put to the test as they struggle with the fast and wide spread of COVID-19. This article discusses the compelling challenges posed by the COVID-19 pandemic by examining how this wicked problem has been managed by the South Korean government with agile-adaptive, transparent actions to mitigate the surge of COVID-19. Unlike many Western countries, South Korea has been able to contain the spread of COVID-19 without a harsh forced lockdown of the epicenter of the virus. This essay argues that an agile-adaptive approach, a policy of transparency in communicating risk, and citizens' voluntary cooperation are critical factors. It also suggests that the South Korean government learned costly lessons from the MERS failure of 2015. This essay suggests ways that Western countries can manage future wicked problems such as COVID-19 without paying too much cost and maintaining quality of life in open and free societies.*

We are facing a set of overwhelming policy challenges as we experience the novel coronavirus disease (COVID-19). COVID-19 is considered a compelling global wicked problem that is not easily solvable, primarily because of its high infection rate as well as its global scalability. Many governments are being tested on how they should prepare for, mitigate, and respond to the outbreak. Following the initial outbreak of COVID-19 in Wuhan, China, at the end of 2019, it spread rapidly to South Korea, Iran, Italy, Spain, France, the United Kingdom, Germany, the United States, and Japan. As of April 2020, it was found in almost every country. On March 11, 2020, the World Health Organization announced that COVID-19 was a pandemic as the number of the infected grew exponentially in different parts of the world beyond Asia.

As the pandemic stage of COVID-19 continues to develop, we have observed how governments have responded to the threat and dealt with challenging policy issues in different ways. Although many studies have examined crisis management (Comfort 2007; Comfort et al. 2012; Moynihan 2008), COVID-19 appears to present new challenges because of the scale and speed of infections. This study aims to discuss key governance and policy issues that have been revealed in the course of making critical decisions about preparing for, mitigating, and responding to the outbreak. In particular, this essay examines key policy



Article

## Policy learning and crisis policy-making: quadruple-loop learning and COVID-19 responses in South Korea

Sabinne Lee, Changho Hwang & M. Jae Moon

Pages 363-381 | Published online: 28 Jun 2020

Download citation

<https://doi.org/10.1080/14494035.2020.1785195>



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### ABSTRACT

This study aims to analyze how the Korean government has been effective in taming COVID-19 without forced interruptions (i.e. lockdowns) of citizens' daily lives. Extending the theory of organizational learning, we propose the quadruple-loop learning model, through which we examine how a government can find solutions to a wicked policy problem like COVID-19. The quadruple-loop learning model is applied to explain how the Korean government could effectively tame COVID-19 in the initial stage through its agile as well as adaptive approach based on effective interactions of backstage (time, target, and context) and frontstage of policy processes mainly focusing on the initial stage until the highest alert level was announced. Based on the Korean case, this study also examines critical factors to effective learning organizations such as leadership, information and transparency, as well as citizen participation and governance.

KEYWORDS: COVID-19, crisis policy-making, organizational learning, quadruple-loop learning, South Korea

### Related

South Ko  
disease:  
managen  
Pan Suk

Assessin  
Managen  
Min-Hyu

The smar  
COVID-1  
democrat  
Jung Wo  
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Smart Ko  
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2020

COVID-1

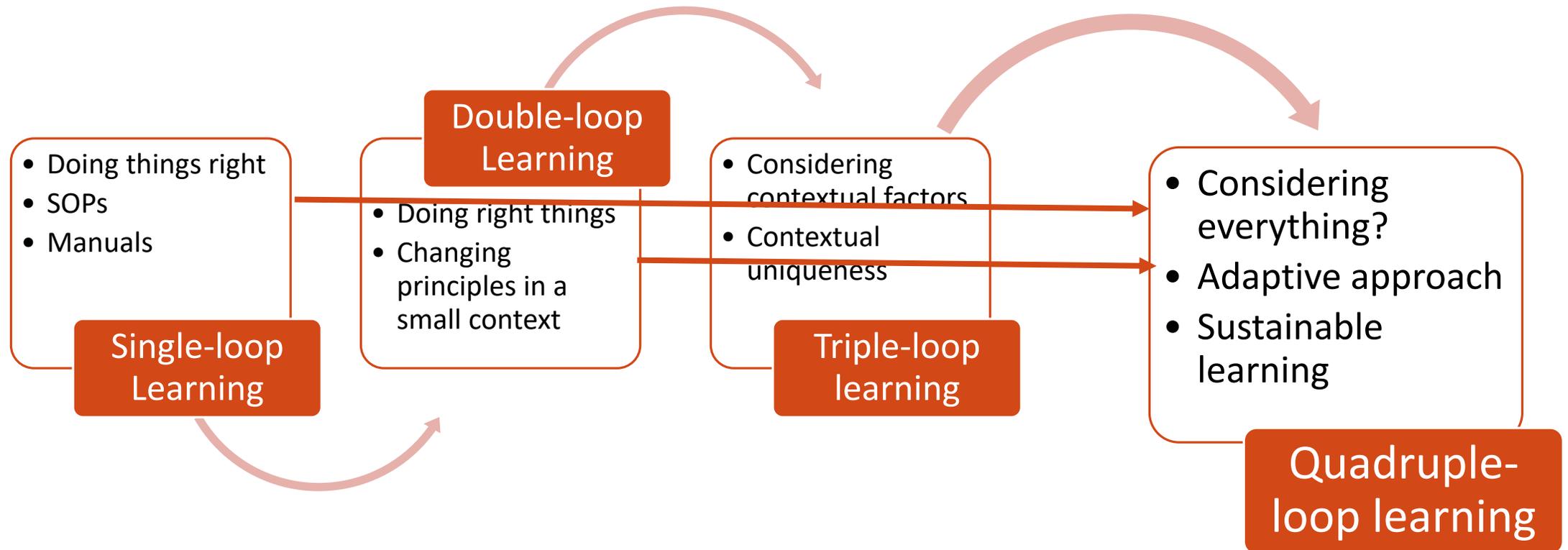
# Learnings from MERS?

## Revisiting the MERS Whitepaper (2016)

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1. Strengthening the capacity of the Korea Centers for Disease Control and Prevention (KCDC)
2. Building the capacity of local governments for infection control and securing organizational capacity
3. Strengthening the capacity of medical institutions for infection control and establishing the government's management system
4. Building infection control networks among central government, local governments, and medical institutions
5. Establishing a monitoring system for infectious diseases and upgrading infection disease information systems
6. Preparing for new infectious diseases and stocking necessary resources with strategic national stockpiles
7. Creating isolated areas for treatment and establishing test and treatment protocols
8. Promoting R&D for new infectious diseases
9. Securing national budget for responding to public health crises
10. Strengthening risk communication capacity in the new infectious diseases era
11. Improving the ethics of infectious diseases and strengthening psychological support for infected patients

# Quadruple-loop Learning (Lee, Hwang, Moon, 2020)



# Quadruple-loop Learning Organizations

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Bundling Traffic Control in Emergency Room

Drive-Through Testing Facilities

Residency Treatment Center for light symptom patients

Public mask distributions

From the Fields

Innovative Practices and Policy Dissemination

Medical Communities, Public Institutions and Government

Local Governments and Central Government



Health officials test patients through a car window at the drive-through site.

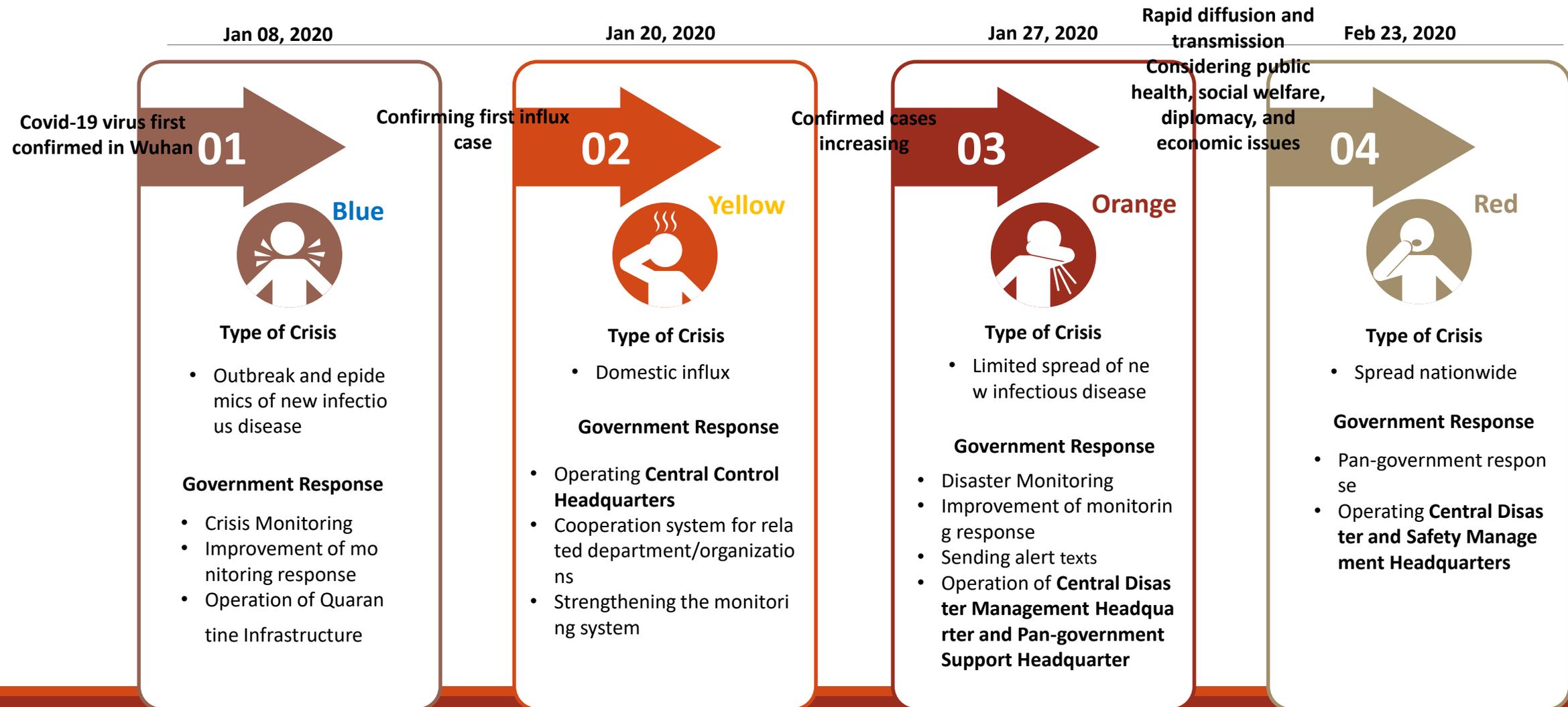
# Agility: Why Should We Care for Agility?

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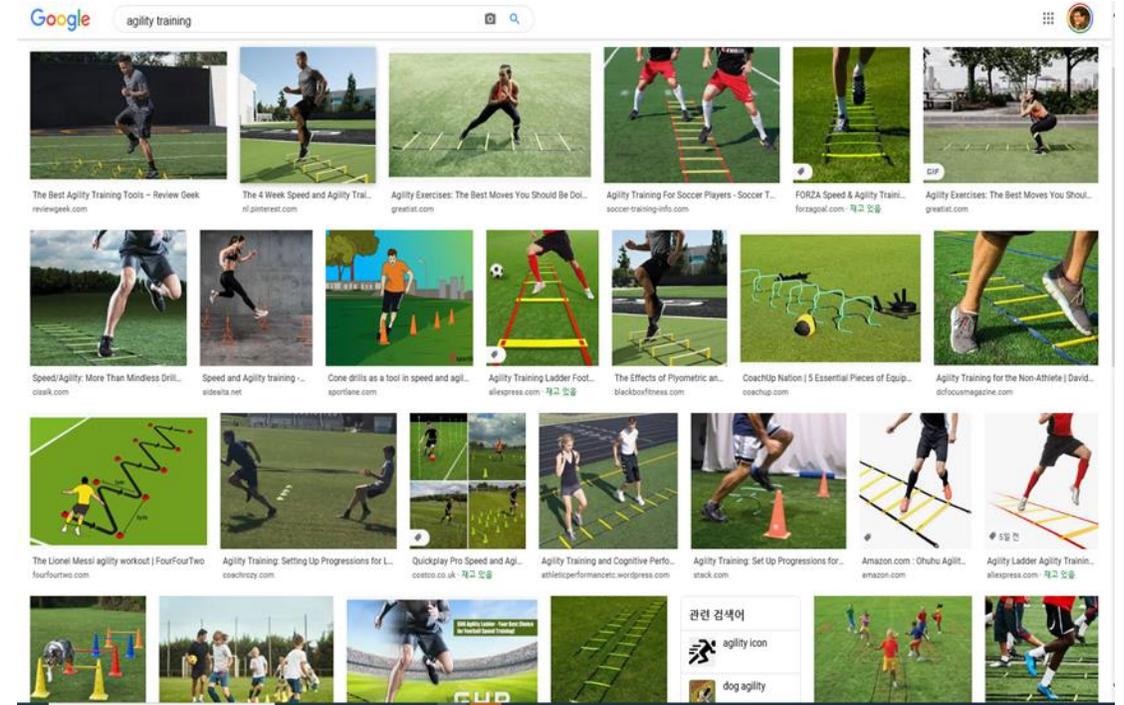
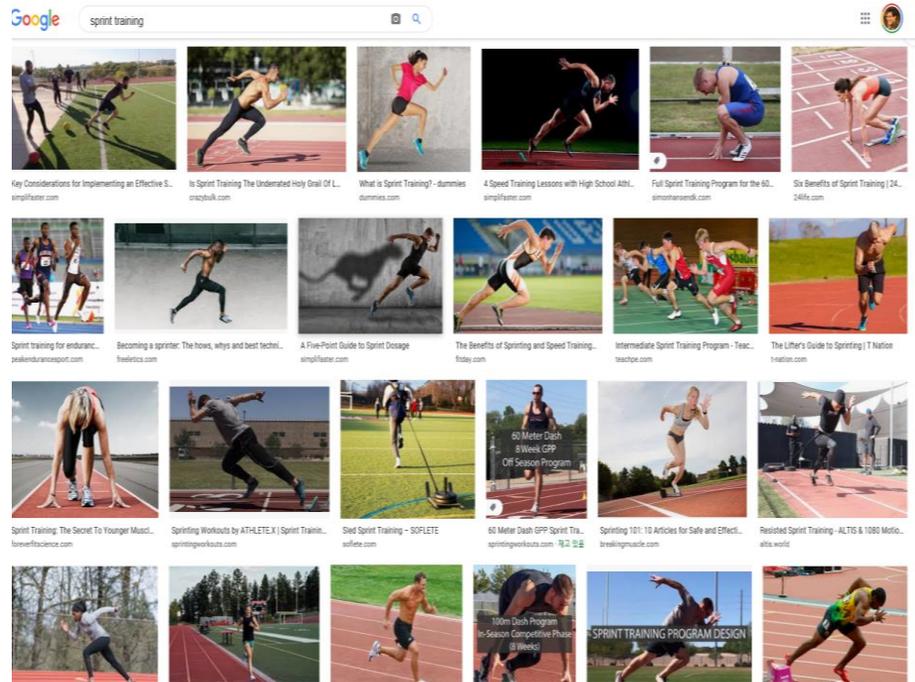


# Quadruple Organizational Learning: Frontstage

COVID-19

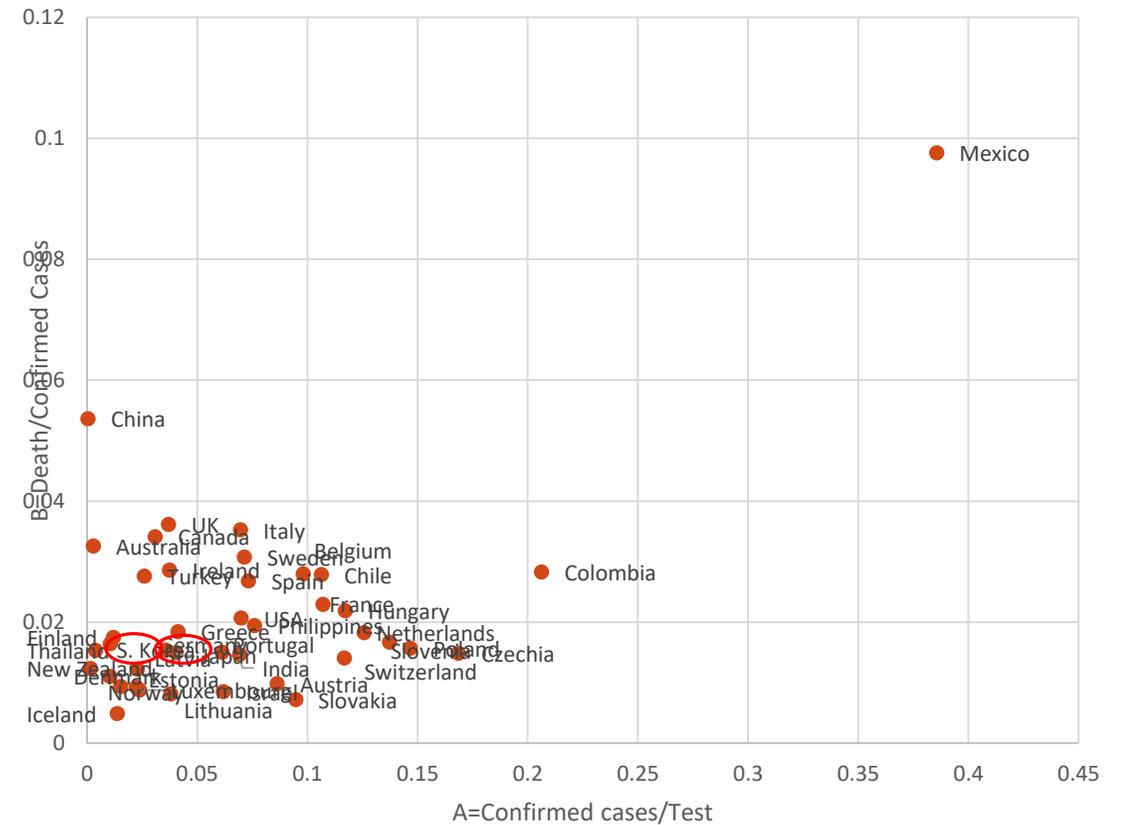
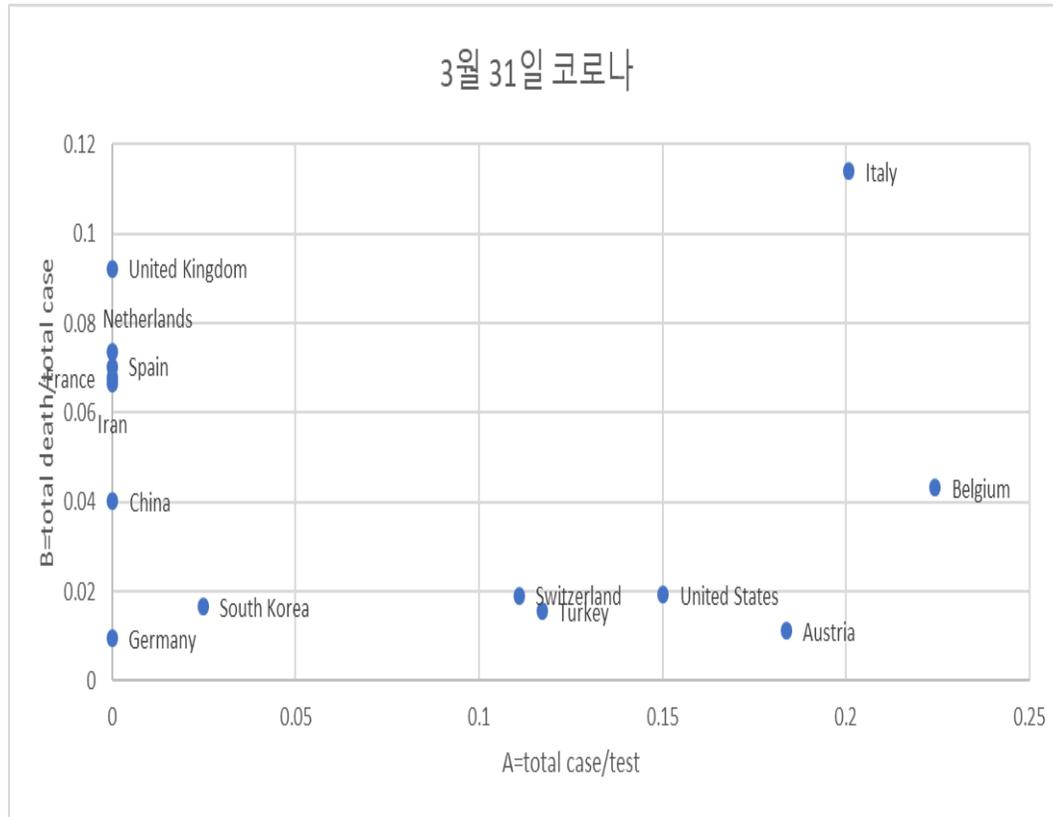


# Is Agility Training Different from Sprint Training?

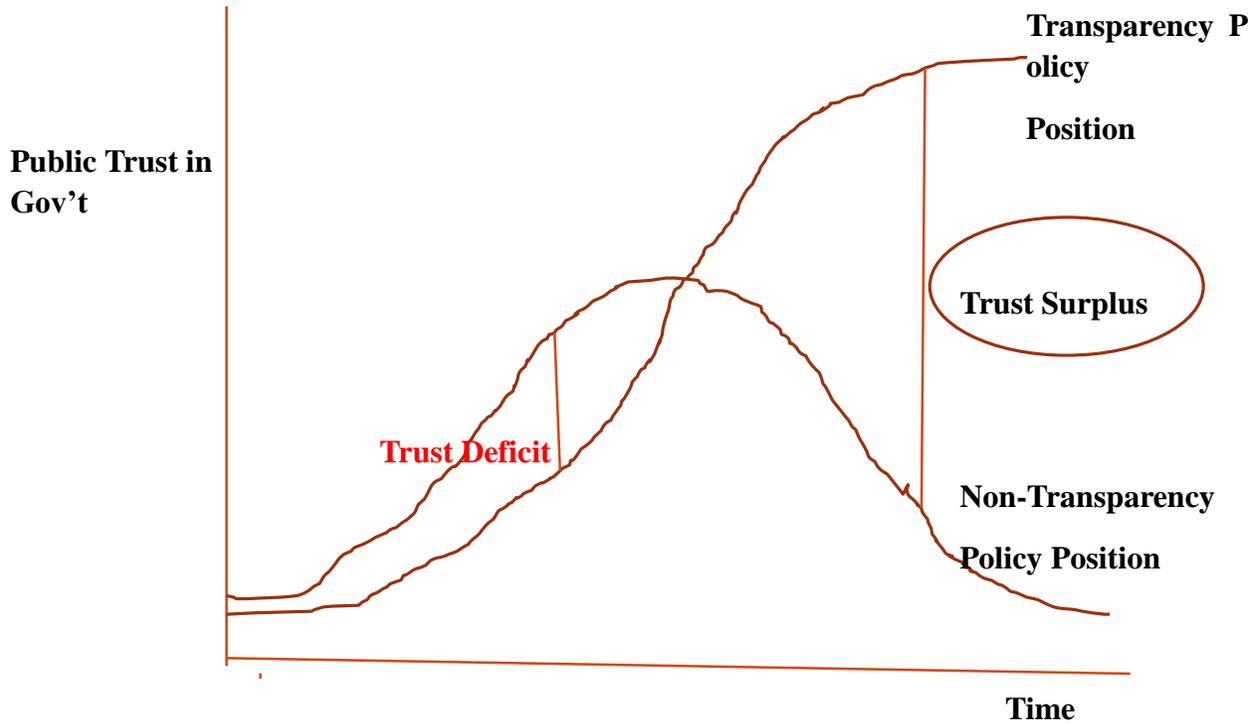


# Mitigating COVID-19?

November 24



# Transparency and Trust



Moon (2020)

Trust in Gov't Info on COVID-19



Not Trust

Trust

# HOW TO MITIGATE COVID-19?

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## COVID-19 Response with ICT

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### Testing

- Test kit development
- AI-Assisted Diagnosis

### Tracing

- Self-quarantine Safety App
- Epidemiological Investigation Support System

### Social Distancing

- Remote learning/working/religious services
- Cell Broadcasting Service
- ICT Infrastructure Emergency Response

# Coproduction: Codesign and Codelivery (Moon, 2017)

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**Co-production**

Co-production is an equal relationship between people who use services and the people responsible for services. They work together.

# Coproduction: Mask Apps & Emergency Disaster Assistance

총 2,704건

내가 등록한 게시글만 보기  OFF [원문시여 등록하기](#)

<p><b>약국찾기</b> 전국 약국 정보</p> <p>도전도료 <a href="#">웹사이트</a></p> <p>약국찾기 -전국 약국 정보 전국 약국 전화번호 주소 지도 영업시간 유품일 당번약국 정보</p> <p>2020-05-14</p>	<p><b>재난안전정보 제공 솔루션 구축</b></p> <p>재난안전 <a href="#">웹사이트</a></p> <p>재난안전정보 제공 솔루션 구축 기상예보, 기상특보, 대기정보 등의 날씨 정보를 가공하여 공공기관에서 주민</p> <p>2020-05-04</p>	<p><b>코로나19 관련 면역력 강화 농산...</b></p> <p>농축수산 <a href="#">기타</a></p> <p>코로나19 관련 면역력 강화 농산... 코로나19 관련 면역력 강화 농산물 공유</p> <p>2020-04-25</p>	<p><b>코로나19 관련 면역력 강화 농산...</b></p> <p>농축수산 <a href="#">기타</a></p> <p>코로나19 관련 면역력 강화 농산... 코로나19 관련 면역력 강화 해 주는 농산물 공유합니다.</p> <p>2020-04-25</p>
<p><b>THEVC</b></p> <p>채팅금융 <a href="#">웹사이트</a></p> <p>더브이씨 (The VC) 스타트업과 투자기관의 정보를 검색하는 서비스입니다.</p> <p>2020-04-24</p>	<p><b>IPO Note</b> IPO노트: 공모주노트</p> <p>채팅금융 <a href="#">웹사이트</a></p> <p>IPO Note 'IPO Note'는 기업 정보를 기반으로 투자와 관련된 정보를 제공하는 웹 사이트</p> <p>2020-04-17</p>	<p><b>smallticket</b></p> <p>채팅금융 <a href="#">웹사이트</a></p> <p>스몰티켓 '스몰티켓'은 반려동물 정보를 기반으로 반려동물의 보험료 계산 및 보험 가입</p> <p>2020-04-16</p>	<p><b>Prompie</b></p> <p>교육 <a href="#">웹사이트</a></p> <p>프롬피 아카데미 '프롬피 아카데미'는 자격증 정보를 기반으로 보다 빠른 국가기술자격증 취득</p> <p>2020-04-14</p>

행정안전부 장내외 우리국민, 장내외 우리경제  
**긴급재난지원금**

**신용·체크카드 이렇게 신청하세요**

신청 기간 : 2020.5.11.(월) 07:00~

- 세대주께서 본인 명의의 신용·체크카드로 신청이 가능합니다.
- 혼잡을 피하기 위해 출생년도 '요일제' 방식을 적용합니다. (온라인은 5.16.부터 '요일제' 제외)

**월 1,6 화 2,7 수 3,8 목 4,9 금 5,0 토요일 모두**

**온라인 신청**

사용 카드사 접속 (세대주) → 신청서 입력 → 긴급재난지원금 충전

**방문 신청** ※방문신청은 2020.5.18.(월) 09시 부터 가능합니다. (주말은 방문신청 불가)

카드 연계 은행 방문(세대주) → 신청서 작성 → 긴급재난지원금 충전

\* 2020.8.31.까지 사용이 가능하고 사용지역, 업종, 온라인 사용에 제한이 있습니다. 잔액은 환급되지 않습니다.

Starting in May  
6/9: 99%

- Paying the assistance to 22 million households
- 3,419 local government offices
- 8 card companies
- 9,048 bank branches



## Governance for Information Collection

- Building healthy governance accelerates systematic information collection
- Information are generated in various parts of the organization
- Well-designed network and collaborative governance would be the key element

## Citizen Participation and Public Trust-Coproduction

- Under democracy: public support is the main key that determines whether learning process is adopted or not
- Nonprofits, social services organizations, medical institutions
- Government Capacity, Social Capacity, Medical Capacity

# Balancing Anticipation and Resilience...

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		Amount of knowledge about what to do	
		Small	High
Predictability of change	High	<b>More resilience less anticipation</b>	<b>Anticipation</b>
	Low	Resilience	More resilience less anticipation

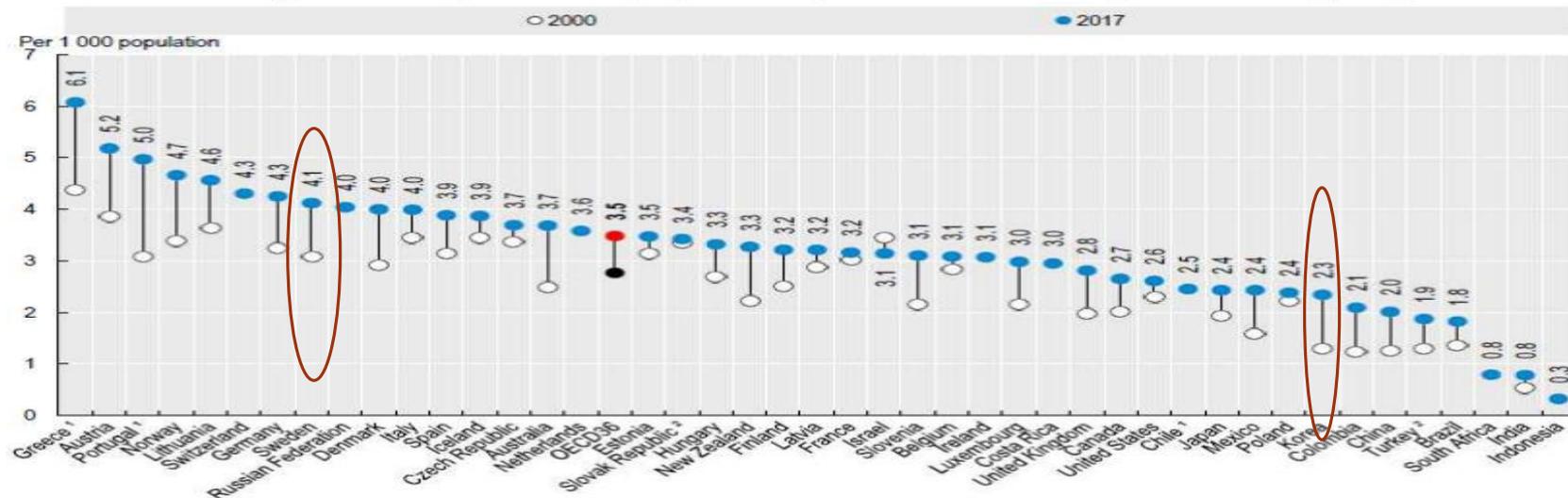
Wildavsky (1988)

# Number of Physicians

COVID-19

**The number of physicians per capita has increased in nearly all OECD countries since 2000**

**Practising doctors per 1 000 population, 2000 and 2017 (or nearest year)**



**Notes:**

1. Data refer to all doctors licensed to practice, resulting in a large over-estimation of the number of practising doctors (e.g. of around 30% in Portugal).
2. Data include not only doctors providing direct care to patients but also those working in the health sector as managers, educators, researchers, etc. (adding another 5-10% of doctors).

**Source: Health at a Glance 2019.**

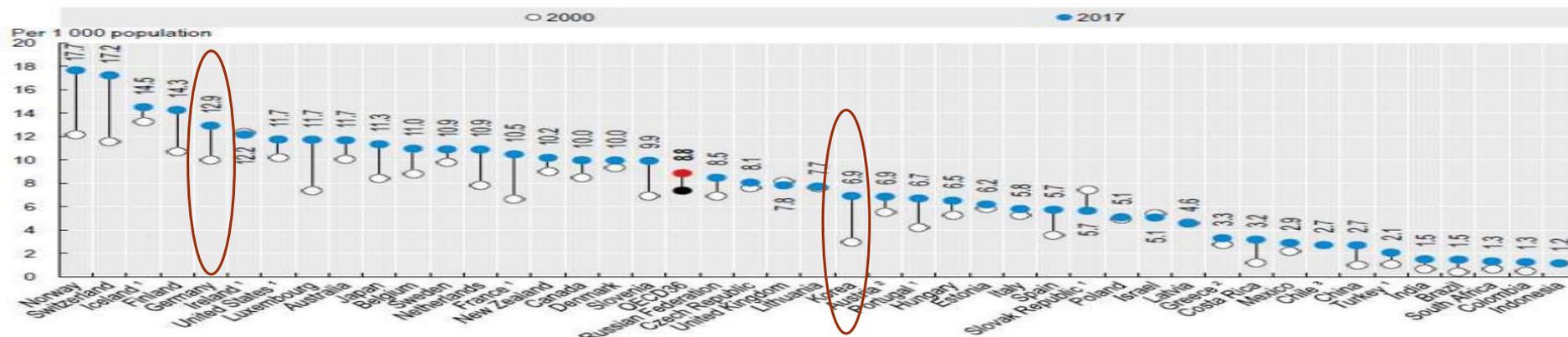
<https://www.oecd.org/health/health-systems/Health-at-a-Glance-2019-Chartset.pdf>

# Number of Nurses

COVID-19

**Between 2000 and 2017 the number of nurses per capita grew in almost all OECD countries, and the average rose from 7.4 per 1 000 population in 2000 to 8.8 per 1 000 population in 2017**

**Practising nurses per 1 000 population, 2000 and 2017 (or nearest year)**



**Notes:**

1. Data include not only nurses providing direct care to patients, but also those working in the health sector as managers, educators, researchers, etc. 2. Austria and Greece report only nurses employed in hospital. 3. Data in Chile refer to all nurses who are licensed to practice.

**Source: Health at a Glance 2019.**

<https://www.oecd.org/health/health-systems/Health-at-a-Glance-2019-Chartset.pdf>

# Hospital Beds

COVID-19

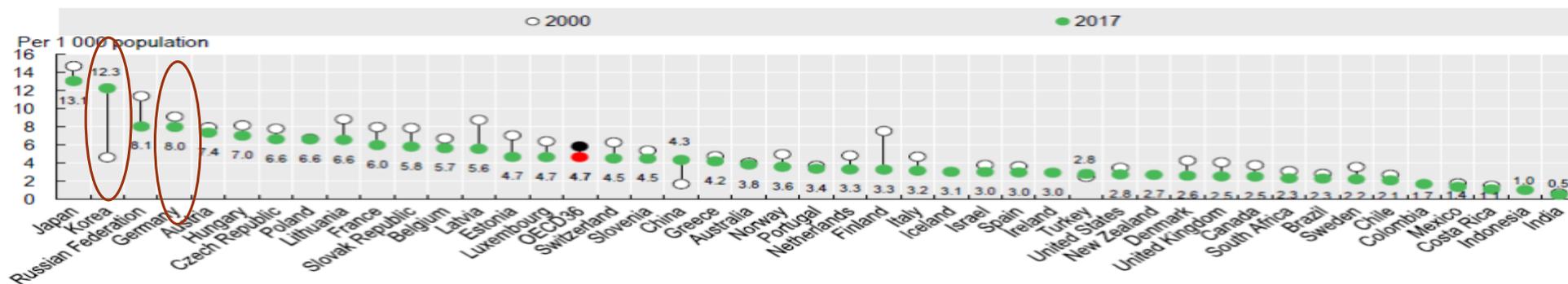
**Across OECD countries, there were on average 4.7 hospital beds per 1 000 people in 2017. Since 2000, the number of beds per capita has decreased in nearly all OECD countries.**

Acute Hospital Beds in 2017

Germany 6.0

Korea 7.1

Hospital beds, 2000 and 2017 (or nearest year)



Source: Health at a Glance 2019.

<https://www.oecd.org/health/health-systems/Health-at-a-Glance-2019-Chartset.pdf>

# Wicked Problems and Solutions?



# Government Innovations for Future Government

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**A**nticipatory Government

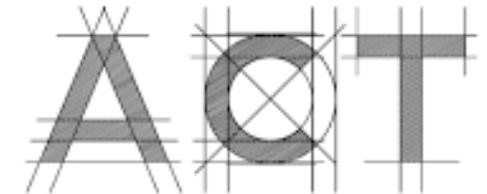
**R**esilient Government

**T**ransparent and Open Government

**A**gile Government

**C**oproduction Government/Citizen-centric Government

**T**echnology-enabled Government



# Solving Wicked Problems like COVID-19 with Government and Citizens/ Society Together...

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The Answer is in “R” → P.C.D → Governance Matters!



“Life is like riding a  
bicycle. **To keep  
your balance you  
must keep moving.**”

*Albert Einstein*

# More Empirical Works Needed...

	코로나19 관련 불안감 (5: 매우 증폭)	Model 1
정부의 정보제공	정보 신뢰성	-0.149***
	정보의 신속성	-0.090
	정보의 정확성	-0.221***
정부신뢰	정부신뢰	0.111
정부민첩성	정부의 민첩성	0.247***
	정부신뢰*민첩성	-0.426***
인구통계 변수	남성(더미)	-0.060**
	연령	0.010
	최종학력	-0.003
	소득수준	-0.013
	이념성향	-0.032
	기혼(더미)	0.004
지역더미	수도권(더미)	0.027
	대구.경북(더미)	0.070***
	_cons	
	Obs.	1,000
	R-squared	0.314
	Adj R-squared	0.305
	F	32.32

(Kim, Yu, and Moon, 2020)

logcase	Pooled			
	Coef.	Std. Err.	Coef.	Std. Err.
Workplace_closing	0.071***	0.020		
Close_publictransport	-0.024	0.024		
International_travel_controls	-0.038***	0.014		
L1. Workplace_closing			0.066***	0.020
L1. Close_publictransport			-0.028	0.024
L1. International_travel_controls			-0.036***	0.014
logpop	-0.008	0.012	-0.007	0.012
logdensity	0.050***	0.017	0.051***	0.017
loggdp	0.109***	0.054	0.114***	0.054
median_age	-0.002	0.007	-0.002	0.007
hosp_patients_per_million	0.001***	0.000	0.001***	0.000
L1.logcase	0.749***	0.013	0.749***	0.013
_cons	-1.406	1.047	-1.463	1.407
Time dummy	yes		yes	
Continent dummy	yes		yes	
N of obs	2690		2692	
Overall R_squared	0.7946		0.7943	

(Lee and Moon, 2020)

# Agility and Trust on Citizens' Fear on COVID-19

