

Research in Brief



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Securing the Three Pillars of Health Care Resources in Response to Covid-19

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Introduction

Korea is in the midst of its fourth wave of covid-19, facing its worst surge infections since the pandemic erupted in December 2019. A variety of public health policy actions can be implemented in response to the covid-19 virus and other infectious diseases, among which are medical interventions like vaccination and treatment and non-medical policy measures such as travel restrictions and social distancing.¹⁾

[Figure 1] Main public health policy responses to epidemics, including covid-19 pandemic



Source: OECD. (2020). Beyond Containment: Health systems responses to COVID-19 in the OECD.

1) OECD. (2020). Beyond Containment: Health systems responses to COVID-19 in the OECD.

Amid the covid-19 epidemic, it has become more challenging than ever for the health care system to meet its primary goal of protecting people’s health. The OECD has emphasized the importance of maintaining strong public health programs and optimized allocation of health care resources in such a time as now when demand for care is surging rapidly. More specifically, the OECD recommends to mobilize “staff to diagnose and treat patients”; boost “supplies of required equipment to diagnose people and provide them with acute treatment when needed”; and optimize “space to isolate and treat patients.”

Korea has implemented flexible social distancing measures in keeping with the fluctuations of covid-19 case count. Also, medical staff, health care supplies and hospital beds have been managed at the policy level, keeping the health care system at the ready to respond to potential surges in infection. This study takes a look at the past one and half years of effort the government has exerted to mobilize health care staff, supplies and beds in the face of the covid-19 pandemic, and discusses what remains to be done.



Staff mobilization

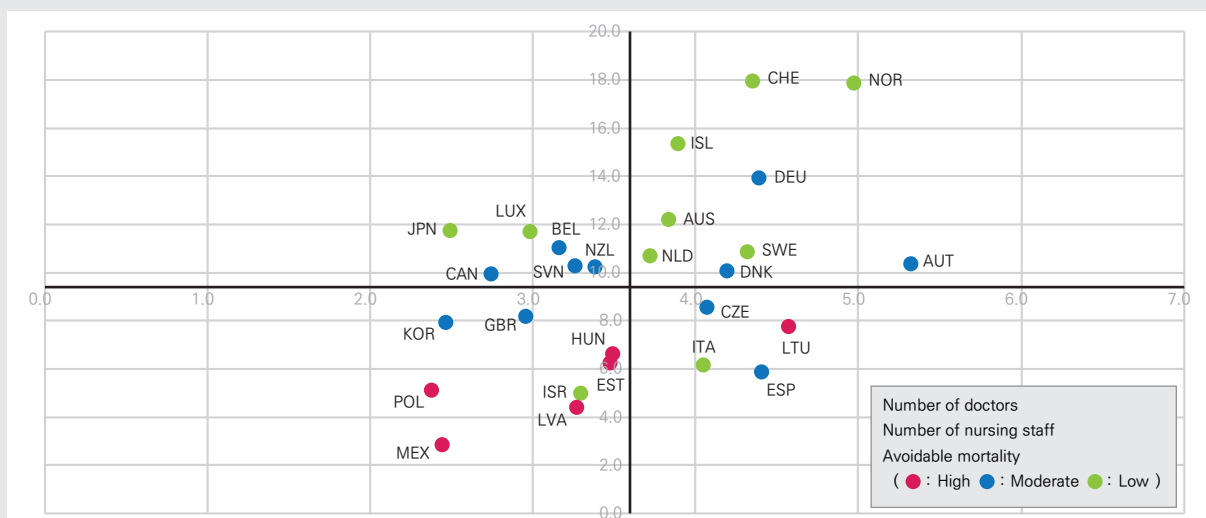
The aim of staff mobilization is to engage inactive health professionals in countering covid-19, thereby protecting the health of existing health care providers and helping them continue with their role in providing care.²⁾

Doctors and nurses are essential for any health care system to work properly. Thus, having enough workforce in place is a way of building up the capacity of the health care system to respond effectively to an unforeseen infection crisis like the covid-19 epidemic. According to OECD statistics, countries with a high number of deaths that could have been avoided through preventive actions and timely health care interventions mostly had a low number of doctors and nurses per population, whereas, as the green dots in Figure 2 suggest, countries with a low avoidable mortality rate had a high number of health care professionals. France, a country with a relatively low number of health professionals per thousand population at 3.2, has instituted “sanitary reserve” program, whereby a reserve workforce of doctors, nurses, non-medical hospital workers, psychologists, and professionals from local health care institutions has been mobilized to work at the frontline response to the covid-19 epidemic. The UK has called on its retired doctors and nurses to come back to duty.³⁾

2) Ibid.

3) Ibid.

[Figure 2] Number of doctors and nurses and avoidable mortality in OECD countries



Source: OECD Health Statistics 2021. <https://stats.oecd.org/Index.aspx?ThemeTreeId=9>

Korea is an example where local authorities, as well as the national government, have recruited inactive or retired doctors, nurses, nursing assistants, and clinical pathologists in their response to the covid-19 epidemic. When the country was in the grip of its first wave of covid-19 infections, the government deployed additional health care professionals to areas severely affected, including Taegu. In February 2020, guidelines were drawn up to provide compensation—work compensation, overtime pay, special hazard allowance, and education allowance—for health care professionals working on the frontline response to covid-19. As of July 2021, there were a total of 2,173 medical workers (doctors and nurses) detached to assist in testing and treatment of covid-19 at medical institutions, residential treatment centers, temporary testing stations and vaccination centers across the country. Meanwhile, local governments too, on their own, have recruited additional health care professionals to serve at their temporary testing stations and vaccination centers.

The Korean government has kept on mobilizing health care professionals to deploy short-term at medical institutions having difficulty recruiting additional health care professionals on their own. However, as recent surges in covid-19 cases have brought about a great deal of additional workload for health care professionals, the issue of unequal treatment, in pay and workload, has been persistently raised especially with regard to nurses, which led to the government’s decision to offer a daily allowance of KRW50,000 for nurses assigned to covid-19 intensive care units.

Concerns have arisen also when it was found that many of the medical professionals who had been sent out to assist in the response to covid-19 remained employed by their assigned medical institutions longer than was planned, leaving other medical institutions in need of workforce support under-supported. Furthermore, such additional health care professionals have been shared out inequitably, with top four medical institutions taking 55.9 percent of them.

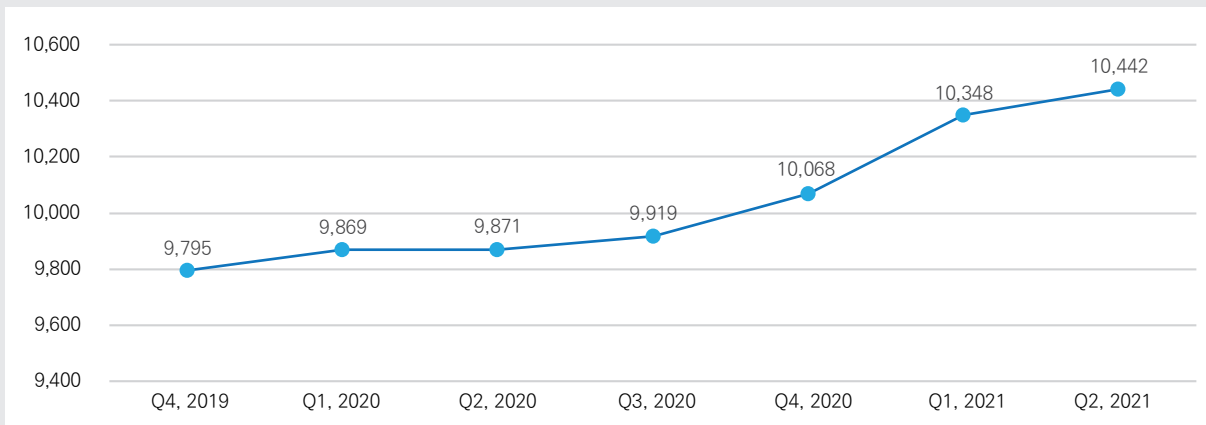


Equipment provision

The OECD underscored how important it is in times of the covid-19 epidemic to retain an expanded reserve of personal protective equipment—such as masks, face shields and hand sanitizers—and medical ventilators and also to closely monitor the availability of essential medicines.

With no drug developed as yet for treatment exclusively of covid-19 cases, health care institutions in Korea have been using mechanical ventilators or extracorporeal membrane oxygenation (ECMO) to provide extra oxygen for covid-19 patients with respiratory failure. There were an estimated 10,442 mechanical ventilators in Korea in the second quarter of 2021, up from fewer than 10,000 before the covid-19 epidemic (see Figure 3). Across the country, there were 383 ECMO units available for use on severe cases of respiratory failure. As of August 2021, 37 of these ECMO machines were in use on covid-19 patients and 58 on non-covid-19 cases, according to monitoring conducted by the Korean Society for Thoracic and Cardiovascular Surgery.

[Figure 3] Number of mechanical ventilators in Korea



Source: Statistics Korea (2021). https://kosis.kr/statHtml/statHtml.do?orgId=354&tblId=DT_HIRA48_1&conn_path=I3

In the early stage of the covid-19 epidemic, Korea struggled, as did most countries in the world, with insufficient testing capacity and a lack of personal protective equipment. Confronted with a huge unmet demand for facial masks that was engendered by the covid-19 epidemic, the government implemented a “public mask provision” program using the system of drug utilization review employed by the Health Insurance Review and Assessment Service. The government brought an end to the public mask provision program on July 7, 2020, as it decided then that the production of facial masks was well on track. Covid-19 testing has been made easier recently with the self-testing kits made available for purchase at local pharmacies and stores. The Ministry of Food and Drug Safety in April 2021 gave a conditional approval

for the sale of antigen-based diagnostic kits that allow people to self-test for covid-19. However, in-person PCR test remains strongly recommended for anyone suspicious of infection or accompanied by an increase in body temperature.

As of August 2021, Korea had some 600 designated testing stations set up at public health centers and hospitals throughout the country. The testing stations are designed to conduct diagnostic screening on potential covid-19 patients in spaces physically separated from the other patients lest the virus spread to other parts of the community. The government provides financial support to hospitals for the cost incurred in running their covid-19 testing stations, including expenses on purchasing or renting negative pressure tents and other equipment.

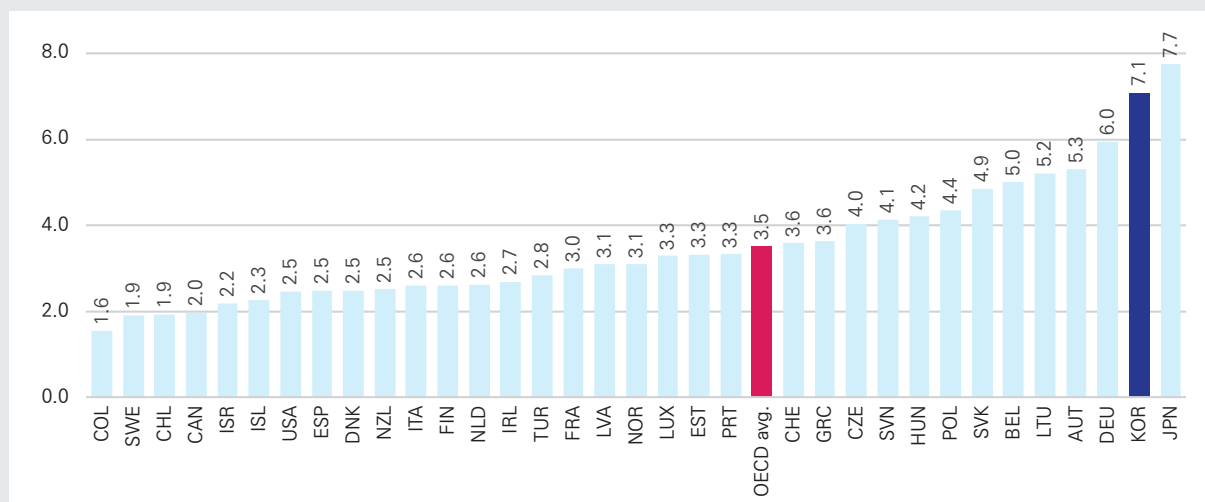
Drive-through covid-19 testing was first used in Korea on February 23, 2020 at Chilgok Kyungpook National University Medical Center. This method allows diagnostic questioning and taking body temperature measurement and collecting specimens, while people stay in their car. Hailed by the OECD as a technological breakthrough, Korea's drive-through testing has since been modeled after by many countries around the world, including Australia, Canada, Belgium, Germany and the US.



Having care beds at the ready for covid-19 patients

It is important to secure enough space to diagnose suspected cases of covid-19 infection safely and efficiently and to treat covid-19 patients in isolation. Acute care beds are the most representative of such spatial resources. Korea's number of acute care beds per population is the second highest in all OECD countries, next only to Japan's. However, most of the acute care beds available, as they include not only ICU beds but also care beds that are used in routine treatment in surgery units, OBGYN care, and psychiatric wards, are not meant to be used for covid-19 treatment. If the limited capacity of hospitals around the world is anything to go by, there are bottlenecks taking place in the provision of intensive care beds.

[Figure 4] Acute care beds in OECD countries



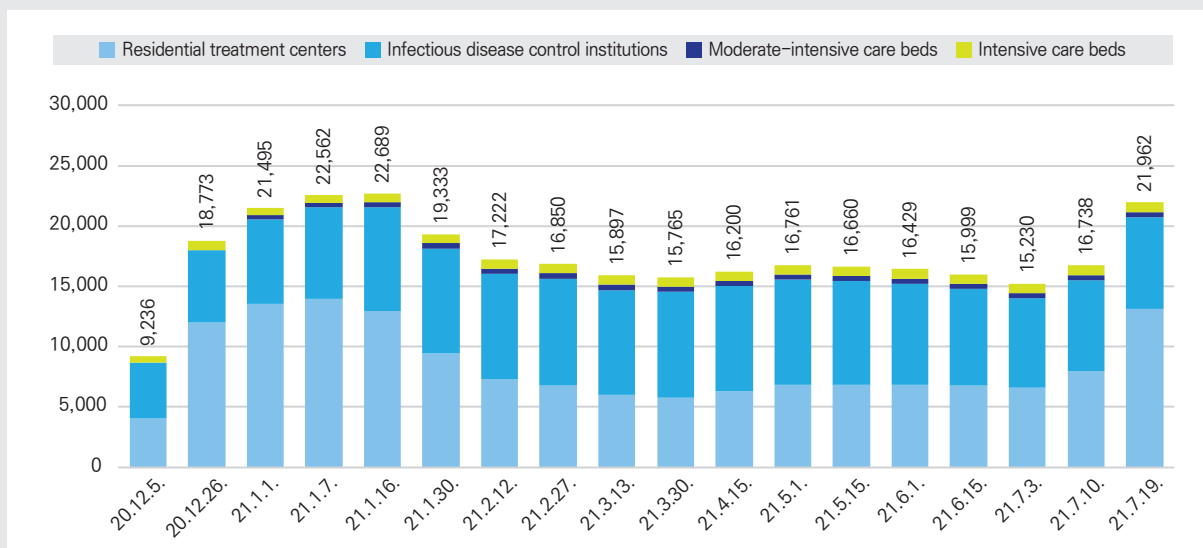
Note: The US's figure is as of 2018; the OECD average is as of 2019, the latest year for which the data was available for a total of OECD 34 countries

Source: OECD Health Statistics 2021 (<https://stats.oecd.org/Index.aspx?ThemeTreeId=9>)

In a bid to avoid such bottlenecks, the Korean government has seen to it that medical institutions across the country convert some of their non-acute care beds into intensive care beds for covid-19 treatment. Pursuant to the Infectious Disease Control and Prevention Act, hospitals that are designated by the Korean government as “infectious disease control institutions” should put in place negative pressure rooms and isolation rooms for the treatment of acute covid-19 cases. “Infectious disease control institutions” are required to convert all or part of the beds they have into “intensive care beds”, “moderate-intensive care beds” or “medium care beds.” The government also has allocated some of state-designated “inpatient treatment beds” and “acute treatment beds” to covid-19 treatment.

In December 2020, when the country, hit hard by a third wave of covid-19 infections, faced a shortage of acute care beds, the government issued an executive ordinance mandating that upper-level general hospitals and national university medical centers free up at least 1 percent of their care beds to accommodate severe covid-19 cases. In addition, the government designated residential care centers, with medical professionals assigned, to treat mild covid-19 cases. As of July 19, 2021, the number of care beds available for use for covid-19 patients was 21,962, of which 13,102 were those available for use to mild covid-19 cases at residential treatment centers (see Figure 5).

[Figure 5] Number of acute beds for the treatment of covid-19 cases in Korea (after the 3rd-wave covid-19 infections, December 5, 2020 ~ July 19, 2021).

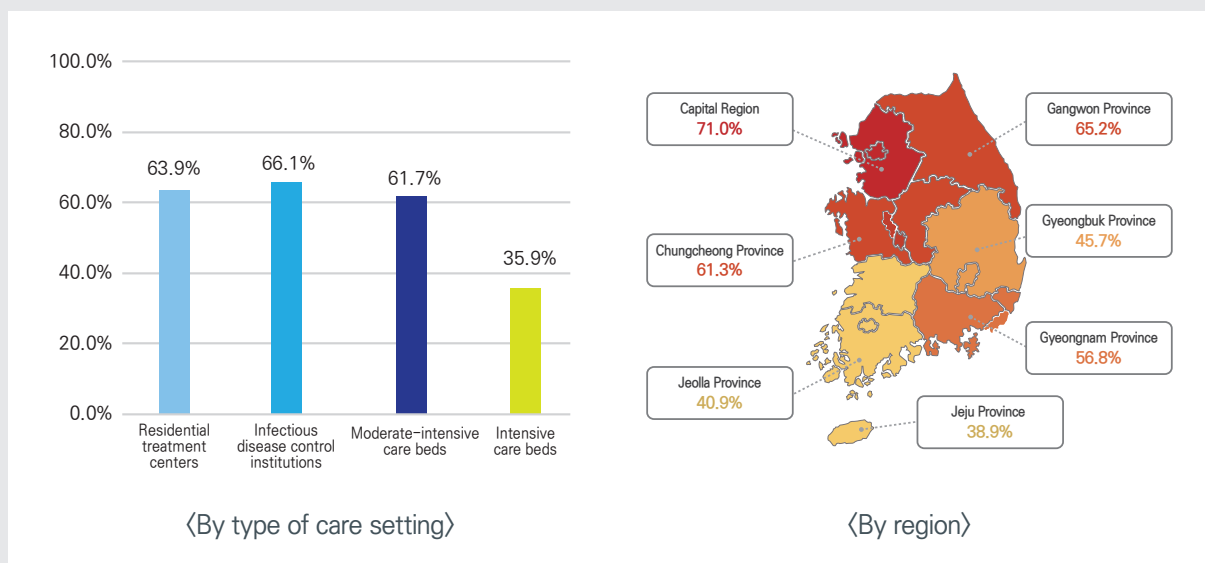


Note: Data for residential treatment centers are as of July 20, 2021; data for infectious disease control institutions, moderate-intensive care units, and intensive care units are as of July 19, 2021; the figures above the bars are the total of number of covid-19 treatment beds at residential treatment centers, infectious disease control hospitals, moderate-intensive care units and intensive care units.

Source: Ministry of Health and Welfare (2020–2021). Regular briefing on covid-19

The government and local authorities have been working together, operating “bed allocation teams”, for adequate distribution of care beds. Also, efforts have been ongoing to monitor bed occupancy rates, with a view to leaving as many beds as possible for covid-19 patients. As of July 19, 2021, occupancy rates varied considerably across different care settings, including residential treatment centers (63.9 percent), infectious disease control hospitals (66.1 percent), moderate-intensive care units (61.7 percent), and intensive care units (35.9 percent). By region, care bed occupancy rates were especially high in the Capital Region (71.0 percent), Gangwon Province (65.2 percent), and Chungcheong Province (61.3 percent).

[Figure 6] Care bed occupancy rates for Korea, by care setting and by region



Note: Bed occupancy rate = (number of beds occupied/total beds available) x 100; bed occupancy rates by region do not factor in beds at "common-use residential treatment centers that are managed by Central Disaster Management Headquarters; data for residential treatment centers are as of July 20, 2021; data for infectious disease control institutions, moderate-intensive care units, and intensive care units are as of July 19, 2021

Source: Ministry of Health and Welfare (July 20, 2021). "Improving level-4 social distancing rules at religious facilities in the Capital Region" (press release).



Concluding remarks

The covid-19 epidemic has revealed the importance of having in place a resilient health care system of sufficient human resources, equipment and space in response to a massive surge of patients. Having enough health care resources in place is key to keeping the health care system up and running. However, not every country can have a sufficient health care resources in reserve at all times. Nor is it proper to put all health care resources exclusively in the hands of the public sector. This is why it is important that the government have the ability to swiftly mobilize resources and engage private-sector partners as needs arise. In health care crisis situations like the covid-19 epidemic, it may be worthwhile considering expanding the roles of health care professionals like nurses and pharmacists so that they can undertake some of the tasks traditionally reserved for doctors. That way, the OECD observed, doctors would be able to commit themselves more effectively to "complex cases." It is important to plan ahead for securing such high-priced medical resources as ECMO machines, as they can be hard to come by when needed. There is a need for a system to monitor real time bed occupancy rates that ever vary depending on the varying number of severe cases, so as to be able to respond apace to any need for inpatient treatment arising from covid-19 infections.

By the OECD standards, the number of health professionals (doctors and nurses) per population has remains low in Korea. In these circumstances, the government has worked keenly to mobilize health care professionals to support work at understaffed medical institutions in the throes of the covid-19 epidemic. Korea's covid-19 testing system, reinforced by drive-through testing, has been safe and effective all along. Plans have been implemented to use private-sector hospital beds to isolate and treat covid-19 patients. A governance system has been established that enables authorities to allocate health care resources, including beds, to where they are needed. Compensation programs have been implemented, so that no losses are left uncompensated for health care institutions participating in the national response to covid-19. Regulatory reforms have laid a legal basis for residential treatment centers to operate, thus bringing asymptomatic and mild symptomatic patients into the national health care system. Along this process human resources support for frontline health care providers has at times been looked upon by some as inequitable and a few cases of insufficient compensation have been pointed at. However, the crisis we find ourselves in is one which no one had experienced or prepared for. The issues that have arisen along the way will be worked out down the road with experience and through agreement and cooperation. However, there are urgent matters to address. Regulations and guidelines should be overhauled so that medical institutions are equitably supported with additional medical workforce and so as to ensure fair treatment, in workload and compensation, for health care professionals dispatched to local medical institutions. Also, "infection control allowance," which has been paid on a time-limited basis to those taking part in the response to the covid-19 epidemic, should, given the health risk to which those health care professionals are exposed, be implemented on a continued basis.

The government is responsible for providing financial support for direct and opportunity costs incurred by medical institutions in their provision of care services for covid-19 patients, as per Disease Control and Prevention Act. However, there is a need to look into whether there are expenses on items—for example, consumables purchased in the process of delivering services to covid-19 patients—that are left unreimbursed by the National Health Insurance. Also, a standardized electronic health record system will be needed to ensure that disease data is collected in a timely fashion and surveillance conducted on a continued basis on covid-19 situations to prevent and contain the virus.