



A Hidden Key to COVID-19 Management in Korea: Public Health Doctors

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Public health doctors of Korea contributed significantly to massive coronavirus disease 2019 (COVID-19) testing. They were immediately dispatched to epicenters of the COVID-19 pandemic, and have run tests at screening centers, airport quarantines and hospitals. However, their expertise from in-field experience has been often neglected. It is time to reorganize public health doctor system to better prepare for future epidemics. Transforming and strengthening their roles as public health experts through systematic training is crucial.

Key words: Public health, COVID-19, Health policy, Korea

In response to the coronavirus disease 2019 (COVID-19) outbreak, Korea showed diagnostic capacity at scale. By massively testing and triaging people in the Daegu-Gyeongbuk area where the outbreak was centered [1], Korea was able to successfully implement containment efforts. By March 11, 2020, around 230 000 people had been tested—almost triple the amount of those tested in Italy, and 20 times the amount tested in the United States [2]. Many factors enabled massive testing, including the rapid approval and availability of diagnostic kits, but without the doctors who actually performed nasal and oral swabs, this would not have been possible. However, this leads to an important question: how was Korea able to recruit enough doctors in such a short time?

There is a hidden key: a specific group of doctors known as public health doctors (PHDs). PHDs are a Korea-specific group

of young (20s-30s) male doctors who work in medically underserved areas, including rural public health centers, airport quarantines, and correctional facilities, for 3 years as a substitute for their mandatory military service. There are around 2000 PHDs across the nation. Approximately 20% of them become PHDs straight out of residency, and 20% do so after their intern year, while approximately 60% of them have just finished medical school. This specific group of doctors was also at the front-line of the 2003 severe acute respiratory syndrome, 2009 H1N1 influenza, and 2015 Middle East respiratory syndrome outbreaks. In late February 2020, when the Korean city of Daegu was hit by a super-spreading event, around 200 PHDs were dispatched immediately to Daegu within a 1-week period to join in efforts to test for the virus and to prevent a widespread COVID-19 outbreak. Although other doctors and nurses volunteered, PHDs comprised the main group of doctors who enabled the high diagnostic rate in Korea; more specifically, PHDs visited members of the Shincheonji religious group [1] at home, and performed inspections at COVID-19 screening centers and hospitals as they triaged potential COVID-19 cases. The relationship between the number of PHDs dispatched to Daegu and the number of tests done supports this idea (Figure 1).

Furthermore, around 30 PHDs were appointed to work as

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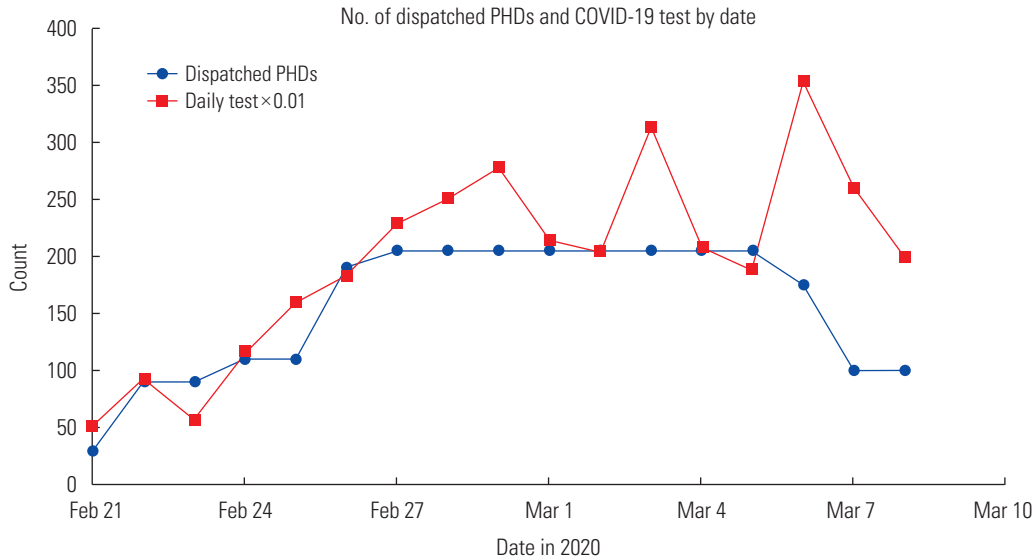


Figure 1. The number of public health doctors (PHDs) dispatched to the Daegu-Gyeongbuk area and the number of daily tests performed for coronavirus disease 2019 (COVID-19).

field epidemiologists, and some as airport quarantine officers. Many of the PHDs who were not dispatched to Daegu continued to work at their local COVID-19 screening centers, which required them to work extra hours since screening centers operate until late at night, and some of them are even open 24 hours a day. Starting on March 9, 2020, 750 newly-called PHDs have also been placed in “living care centers,” where COVID-19 patients with mild symptoms are admitted, and have been taking care of patients and transporting them to higher-level hospitals if their symptoms worsen.

For the government, PHDs are an always-available medical resource that can be sent anywhere instantly. It is clear that thanks to PHDs, the Korean government is able to deploy massive testing on an ongoing basis, including for individuals who are asymptomatic. For example, 20 extra PHDs were immediately assigned to test all passengers arriving from Europe, with just 12 hours of advance notice.

Even though the contributions made by PHDs during the COVID-19 outbreak are undeniably significant, the role of PHDs is often not fully recognized. Early in this outbreak, PHDs familiar with the specific needs of their own areas of service led local quarantine efforts, set up screening centers, and even suggested drive-through testing before it became the national standard. These experiences also enabled them to cope with the circumstances of the places they were dispatched to in a high-quality and timely manner. However, their opinions regarding issues such as the efficient placement of PHDs and

the prioritization of testing for symptomatic people were often ignored by administrative authorities. This ineffective usage of the PHD system and PHDs’ expertise may slow down quarantine efforts. A similar scenario occurred during the H1N1 influenza outbreak in 2009, when PHDs were sent to fight against the outbreak but were largely treated as a subsidiary to the government, and the PHD system remained the same afterwards.

It is time to challenge the status quo and to discuss how best to utilize this valuable human resource to mitigate public health problems and to prepare better for future epidemics. PHDs have remarkable potential, both individually and systematically.

First, the role of PHDs should be transformed. Instead of filling empty spots at rural and local public health centers, PHDs should meet real medical needs after a meticulous assessment of those needs. They should be given assignments in areas that suffer from a chronic shortage of doctors, such as in correctional facilities or as field epidemiologists. It is also time for PHDs to work not only as clinicians, but also as public health experts who can design and lead healthcare plans in their areas, as exemplified by a project in Pyeonchang [3]. PHDs have 4 years to 6 years of medical school training, and they go through 3 years of mandatory field experience as PHDs; furthermore, some of them even earn a master’s of public health degree. This is a group of doctors who can be trained to take a leadership role in the creation of public health policies and projects

during their service.

Second, more systematic education and training should be given to PHDs. COVID-19 has shown discrepancies among PHDs in their preparation and expertise, as their education and training have been based on personal pursuits without systematic support. Field epidemiologists furnish an excellent example of this issue, as few PHDs are trained for the position, resulting in a lack of in-depth epidemiological investigations. However, just as soldiers always train and prepare themselves even when there is no war, PHDs need to be always prepared to act both as primary physicians for underserved people and as public health experts. Moreover, this mandatory 3-year period of service can serve as an entrance to a public health career, especially if individuals have a positive and fulfilling experience during this time. If they are properly trained during their period of service, they will be able to become more competent future field epidemiologists, correctional physicians, and officers of the Korea Centers for Disease Control and Prevention. Continually passing down the know-how and expertise of trained PHDs will help prepare Korea for public health crises.

The introduction of PHDs in 1979 has been successful as a way to provide care in medically underserved areas; however, the recent increase in the accessibility of healthcare, even in rural areas, and epidemiological crises such as COVID-19 suggest the need to utilize PHDs in other ways. Now is the time to reorganize the PHD system in Korea, thereby making this crisis an opportunity to maximize the advantages of having doctors solely dedicated to public health.

The PHDs of Korea will continue to be on call for COVID-19, future epidemics, and other public health issues, but demand to pursue these goals in a better way as properly trained public health experts and leaders.

Ethics Statement

This paper is a perspective so it did not need ethical consideration.

CONFLICT OF INTEREST

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REFERENCES

1. Korean Society of Infectious Diseases; Korean Society of Pediatric Infectious Diseases; Korean Society of Epidemiology; Korean Society for Antimicrobial Therapy; Korean Society for Healthcare-associated Infection Control and Prevention; Korea Centers for Disease Control and Prevention. Report on the epidemiological features of coronavirus disease 2019 (COVID-19) outbreak in the Republic of Korea from January 19 to March 2, 2020. *J Korean Med Sci* 2020;35(10):e112.
2. Roser M, Ritchie H, Esteban Ortiz-Ospina E, Hasell J. Statistics and research: coronavirus disease (COVID-19); 2020 [cited 2020 Apr 23]. Available from: <https://ourworldindata.org/coronavirus>.
3. Jung HW, Jang IY, Lee YS, Lee CK, Cho EI, Kang WY, et al. Prevalence of frailty and aging-related health conditions in older Koreans in rural communities: a cross-sectional analysis of the aging study of Pyeongchang rural area. *J Korean Med Sci* 2016; 31(3):345-352.