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Public Health Crisis in South Korea: Policy Failure or Social Distrust?



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2017-2-7 Public Health Crisis in South Korea: Policy Failure or Social Distrust?

[Case study]

Dohyeong Kim (University of Texas at Dallas)

Introduction

There is a growing threat from emerging infectious diseases in South Korea, such as the recent outbreak of Middle East Respiratory Syndrome coronavirus (MERS-Cov or MERS) in 2015 which infected a total of 186 people and killed 36. Nevertheless, there has been little discussion on the fundamental questions as to what underlies public health crises and what needs to be restructured and reconsidered for more rapid and effective responses to future pandemics in Korea. This case study provides a comprehensive review of all the relevant documents on the recent outbreaks of infectious diseases in South Korea such as SARS (Severe Acute Respiratory Syndrome) in 2003, H1N1 (also called swine flu) in 2009, and MERS in 2015, specifically highlighting three concerns raised during and after the crisis: government system failure, poor communication and social distrust.

Preventing outbreaks of emerging and unprecedented infectious diseases is difficult and becoming even more complicated considering the increase in the number of international travelers. However, keeping an outbreak under good control is possible depending on how effectively the responsible agency

of the government responds to the initial incidents and communicates and collaborates with all stakeholders and the general public. South Korea's lessons from major outbreaks since 2000 have sparked debate on the following questions: What made the outbreak an embarrassing and conspicuous sign of incapability to control disease? Did the policymakers who were in charge make informed and timely decisions and react ideally to all outstanding problems? If not, was it due to policy failure, poor communication, social distrust, or a combination of all three? This case document overviews the background data and information on the recent outbreaks of infectious diseases in South Korea and then discusses various issues and concerns involved in these incidents.

Background

SARS in 2003

Severe Acute Respiratory Syndrome (SARS) is a viral respiratory infectious disease that was a serious global health concern throughout Asia in 2003. Since the first case of SARS was found in the Guangdong province of China, the disease spread rapidly to individuals in 37 countries around the world (Smith, 2006). During the pandemic period, China had 5,328 cases and Hong Kong had 1,755 cases, and their fatalities were 6.6% and 17% respectively (World Health Organization, 2009). Moreover, in Singapore and the Philippines, SARS fatality was as high as 14% (World Health Organization, 2009). In contrast to other Asian countries, South Korea had only three infected persons and no deaths, mainly because sufficient time and information were given to prepare an effective quarantine system that prevented the spread of the outbreak within the country (Gal & Jun, 2015). The Korean government's reaction to SARS was evaluated as a successful response by the World Health

Organization.

In response to the SARS outbreak, a national surveillance system in South Korea was launched on March 16, 2003. The system reported the clinical, laboratory, and radiologic features of 3 probable cases of SARS diagnosed between April 22 and May 12, 2003. The first case was a 41-year-old man who was diagnosed as a probable case of SARS because he had fever, cough, travel history to China, and radiologic finding of pneumonic infiltration. The second was an 81-year-old American who came from the Philippines and was going to America via South Korea. He also had fever, cough, and radiologic finding of pneumonic infiltration. The third was a 28-year-old man who reported fever, cough, travel history to Taiwan, and pneumonic infiltration on chest X-ray. Their symptoms improved in 5~7 days after symptomatic treatment and the antibody test was negative in all patients (Lim et al., 2004).

The Korean government's responses against SARS during the outbreak were focused mostly on: (1) recognizing all the cases from other countries and the World Health Organization (WHO) recommendations, (2) issuing the national warning on March 16, 2003, (3) monitoring all the people (about 890,775) who came from SARS epidemic countries, and (4) conducting follow-up monitoring on them 5~10 days after immigration. Moreover, the government tracked down 226,774 people who had fever or any respiratory symptoms. Among them, three probable cases and 17 suspect cases were revealed and further investigated. However, no secondary infection or domestic occurrence was reported in South Korea (Lim et al., 2004).

H1N1 in 2009

In late March of 2009, an outbreak of influenza was detected in Mexico, which was eventually identified as H1N1 influenza A. In June 2009, the World Health Organization (WHO) raised its pandemic alert to the highest level and more than 214 countries reported confirmed cases of pandemic H1N1 influenza (World Health Organization, 2009). When the infection by H1N1 was associated with pneumonia, admission to an intensive care unit was necessary in 36.1% of all individuals and 10.4% required mechanical ventilation. Despite the administration of antiviral and antibacterial agents, the mortality rate of H1N1-associated pneumonia was 7.2% (Choi et al., 2011).

In South Korea, the first case of H1N1 infection was found on May 2, 2009. Between May and August in 2009, about 750,000 cases of H1N1 were confirmed by laboratory tests. Influenza activity peaked in November 2009 but declined rapidly to below baseline levels in February 2010. According to the official report on the 2009 pandemic H1N1 in South Korea, 252 deaths were associated with the disease and its case-fatality rate was reported as 0.03% (Kim, 2016).

Following the WHO recommendations, the Korean government developed a plan for pandemic influenza preparedness and response in 2006. The Team of Training for Public Health Crisis was initially set up as one part of the Division of Epidemic Intelligence Service within the Korean Center for Disease Control and Prevention (KCDC). The main responsibility of the team was to prepare for a tabletop exercise for pandemic influenza in South Korea to simulate the casualties using a mathematical model, for the purpose of identifying the required medical resources (Chu, Lee, Choi, Youn, & Lee, 2011). In 2007, the team was separated from the division and became an independent division of KCDC. The division was requested to enhance the country's preparedness to secure medical resources, to provide manuals,

and to train public health personnel in case of an emerging infectious disease causing public health crises. The division played a significant role in handling the H1N1 outbreak in 2009 and revised the pandemic influenza preparedness and response plan based on the experience. The revised version of the plan contains sections on international cooperation and newly adapted environments in South Korea (Lee, Oh, Park, Chu, & Son, 2013). Specifically, the government released a travel warning against visiting Mexico City and three other Mexican states, improved the level of quarantine and safety checks on travelers arriving from the United States and Mexico, and increased the scrutiny of inspection standards for imported pork from these countries. An emergency quarantine system in border areas was also in place, with a simple test of people with flu symptom at airports and ports (China, 2009; Suh et al., 2013).

MERS in 2015

The first case of MERS was reported in Saudi Arabia in 2012. Until May 2013, MERS had frequently been referred to as a SARS-like virus, but it is distinct from SARS or the common-cold coronavirus. Despite the 2014 outbreak in Saudi Arabia, only sporadic travel-associated importations occurred in countries outside the Middle East before the 2015 pandemic outbreak. Most global health experts gauged that MERS was a low risk for causing an epidemic and considered it unlikely to propagate enough to cause a massive outbreak (Suh et al., 2013).

However, a massive outbreak occurred in South Korea from May to July 2015, with the second greatest number of cases in the world after Saudi Arabia. In May 2015, a 68-year-old Korean man who returned from travel in the Middle East was diagnosed with MERS nine days after he initially sought

medical attention. In contrast to the initial hope and underestimated risk by the government, it was expanded to a large-scale outbreak which ended up infecting a total of 186 people and killing 36 (case fatality rate 19%). Out of the confirmed cases, 111 were male and 75 were female, and most of them were in their 50s and 60s. 15.1% of the confirmed cases were first-generation cases infected by the index case, 67.2% were second generation cases, and 17.2% were third generation cases (Lim, 2015). 44% of the confirmed cases were admitted or treated in the same hospital with a confirmed case, 38% were family members, health care aides, or visitors, and 17% were medical staff (Ki, 2015). The government officially declared the end of the outbreak on December 23, 2015 (Kim et al., 2016), about six months after its onset. The outbreak had a severe negative impact on South Korea's economy, particularly due to over 100,000 cancelled foreigner visits and decreased exports. During the outbreak, many schools and businesses were temporarily shut down and almost all planned events and activities were cancelled.

After announcing the end of MERS, the government started to take follow-up measures and make plans not only for preparedness for infectious diseases but also for victims of MERS. For example, the government made a plan to increase the number of experts in the KCDC, to enhance quarantine and surveillance in airports (Kim et al., 2016) and to compensate medical institutions that suffered damages from the MERS outbreak in the amount of about 100 billion won (USD 84 million) (Lee, 2015). Moreover, as one of the plans for economic restoration, the government gave foreign travelers automatic MERS insurance plans that covered five million Korean won (USD 4,530) in healthcare compensation for foreign visitors if they were diagnosed with MERS within 20 days of entry and 100 million Korean won (USD 90,660) for any death from MERS (Lee, 2015).

Three Critical Issues

A review of background on three major outbreaks of infectious diseases in South Korea reveals several critical issues which could be debated further to understand fundamental problems underlying the public health crises, specifically government system failure, poor communication and social distrust. Most of the literature, including the media reports and journal articles, reported those three issues as keys to explain various social phenomena observed during the outbreaks in South Korea. Despite considerable efforts at prevention by the Korean government such as setting new regulations, raising budgets and restructuring organizations, a substantial level of concern still exists among Koreans in terms of governmental and social preparedness for upcoming public health crises. An in-depth discussion and debate on these issues would help obtain a clear and broad picture of the problems and provide a valuable contribution to public health policy in South Korea. Each of the issues is discussed below based on the available literature, focusing on the recent MERS outbreak for which relatively more information has been reported.

Governmental System Failure

The Korean government's response to the SARS outbreak in 2003 was evaluated positively as proactive preparedness since the national emergency alert system was strictly enforced in accordance with the manual. Since the emergency alert system against SARS was issued on March 16, 2003, all travelers who entered South Korea through airports or ports were quarantined until the alert system ended on July 7. The Korean government assigned 70 soldiers

from the Korean Army Medical Corp to the quarantine system and allocated an additional 10 heat monitoring sensors at airports to check all travelers. In addition, 242 local health centers took charge of tracking about 230,000 people who were travelling to and from the SARS-endemic countries. During the alert period, a total of about 620,000 people were quarantined, and around 2,200 people were isolated because they had contacted with SARS patients. Approximately 3,300 consultation calls were made through the emergency number 133. For all these proactive preparedness activities, the Korean government spent KRW 6.6 billion, valued as much as USD 5.51 million (People's Daily Online, 2003). As a result, only three SARS cases were finally confirmed in South Korea. The WHO complimented these efforts as the best proactive response and prevention against SARS (Ji, 2015).

In contrast to SARS, the Korean government's disease response system functioned in response to MERS relatively poorly due to the failure to prepare and use an adequate manual for MERS, which turned out to have different transmission patterns than SARS. As aforementioned, the first MERS case was imported to South Korea by a person who returned from a business trip to the Middle East area. When he had the symptoms of cough and fever, he visited a small clinic in his hometown of Asan, south of Seoul. He was initially diagnosed with simple flu or pneumonia in the clinic, but his case was finally confirmed as MERS nine days after he visited the hospital. An international Chinese newspaper, Xinhuanet, argued that the initial response to MERS in South Korea was to be blamed by citing the comment of a Korean infectious disease specialist at the Korea Medical Institute that "the biggest reason for MERS is that the patient zero was diagnosed too belatedly" (Yoo, 2015). One reason for their belated response was pointed out to be the absence of a manual guiding health professionals on how to handle a case of unprecedented infectious diseases such as MERS (Kim, 2015). If the doctor in the small clinic in Asan had had

prior knowledge of MERS or had been able to refer to a relevant manual, the patient zero would have been immediately transferred to a larger hospital which is more experienced and capable of treating such patients. Another criticism was the lack of knowledge of the different transmission patterns between SARS and MERS because the responsive actions based on the manual prepared for SARS were not as effective or made the situation even worse. In fact, most specialists in the public health field argued that the government should be aware of recent pandemics in other countries and have a plan for preparedness and response against all outstanding diseases (Dennis et al., 2001; Osterholm, 2005; World Health Organization, 2009). Interestingly, one news article revealed that the Korean government had an internal report which highlighted the possibility of the disease in the country in 2012 but failed to prepare and provide an adequate manual to health facilities (Hong, 2015).

Another pervasive criticism of the government's failure to handle emergency incidents was around the absence of a "control tower" that should play a leading and responsible role during the response period. During the MERS crisis, it was argued that at least two control towers needed to be set up for national disease control, including an executive control tower for executing preventive measures against viral diseases and another for supporting the executive control tower. However, no effective control tower was in place in South Korea during the epidemic, particularly for the first few weeks of the outbreak — the "golden time," or most vital moment for disease control (Chung, 2015; Kim, 2015; McGrath, 2015). Some argued that either the Minister of Health and Welfare or the head of the KCDC should take full responsibility (Seungki, 2015). When a country has a mass outbreak of infectious disease, a high level of confusion and conflict tend to be prevalent in society and even within governments. In this context, the "control tower" could play a critical role in clarifying confusion and coordinating conflict in the process

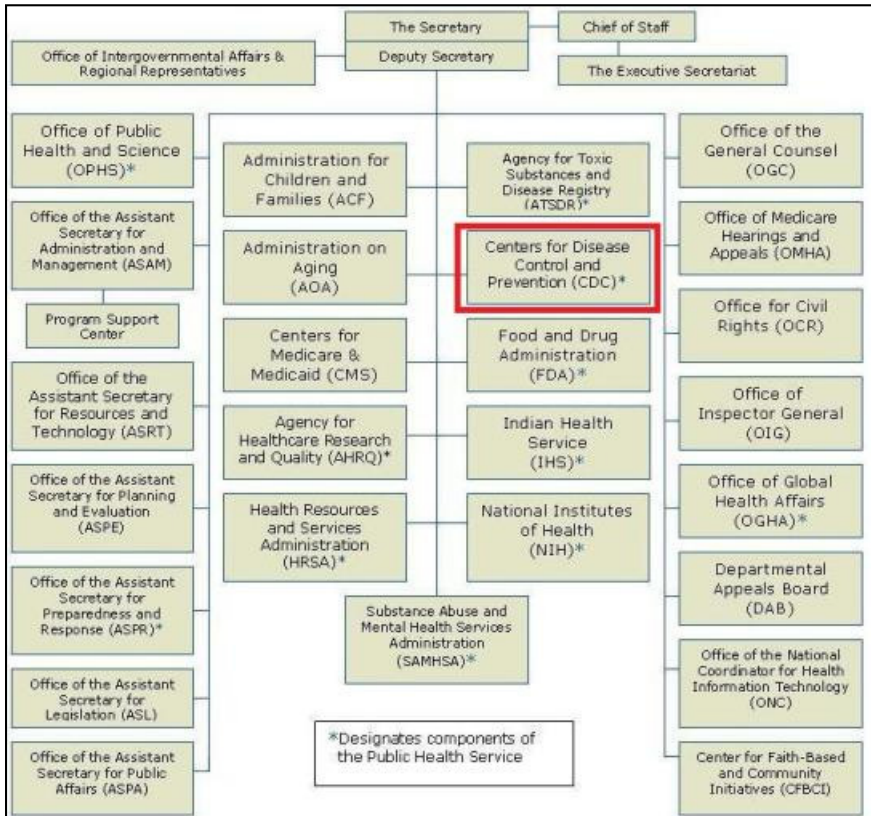
of handling the crisis. Lee (2015) suggested an elastic collaboration system centered by a control tower for the Korean government. In this system, a control tower should keep a balance between rigidity and flexibility and coordinate actors from multiple public and private organizations. During the government intervention period for MERS in South Korea, however, a substantial level of confusion and conflict arose among actors because of the lack of such an elastic collaboration system.

Some argued that inadequate preparation or use of the manuals and the absence of a control tower occurred in the process of reorganizing an administration system. When a new regime begins, the governmental structure is typically reorganized in various degrees. For instance, in the reorganization process of the Lee Myung-bak administration in 2008, about 2,600 disaster management manuals created by the previous presidency (the Roh administration) were removed. In addition, the main responsibility for disaster management was delegated from the Blue House to 2,622 government ministries and agents. The National Security Council in the Blue House had played a role as a control tower before it was abolished in the process of government reorganization in 2008. This administrative reorganization made the government fail to set up an effective control tower which should be in full charge of handling disease outbreaks (McGrath 2015; Yoo, 2015).

The government's system failure was also rooted in its suboptimal organizational structure and capacity, particularly when it hindered a responsible agent from being responsive to an unprecedented disease outbreak. Although the KCDC, the main agency responsible for preventing and controlling infectious disease epidemics in South Korea, was developed by benchmarking the U.S. Centers for Disease Control and Prevention (CDC), it was criticized for its inefficiency and incapability in comparison to CDC, particularly during the MERS crisis such as less flexibility in handling emergent

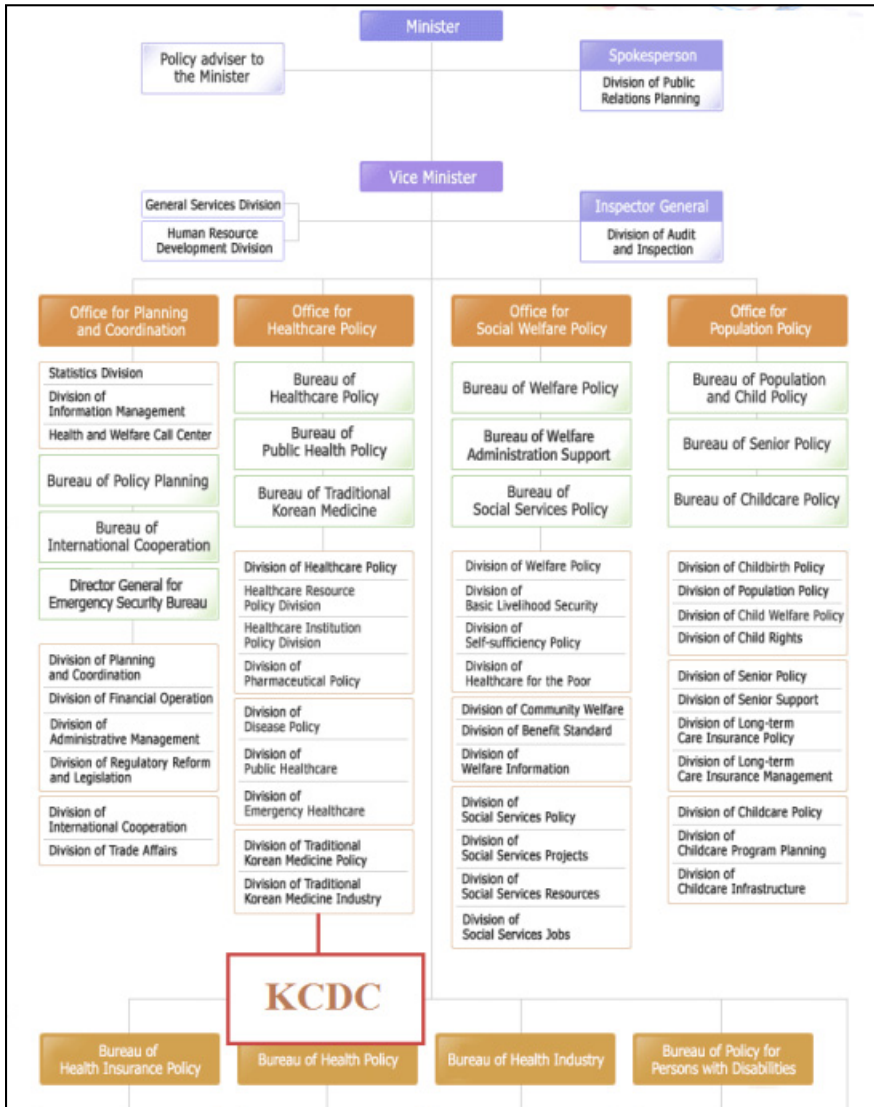
situations and a smaller labor force (Kim et al., 2015). Comparing the two organizational charts of the upper level governmental units including the CDC (Figure 1) and KCDC (Figure 2), it seems evident that the director of the KCDC had less power and authority than the CDC director. The CDC is under the direct supervision of the secretary of the U.S. Department of Health and Human Services, while some institutional hierarchy intervenes between the KCDC and the Minister of Health and Welfare in South Korea. Moreover, the CDC director is directly appointed by the U.S. President, while the KCDC director is appointed by the Minister of Health and Welfare. Such bureaucratic hierarchy could result in an inefficient and untimely response to emergency incidents such as disease outbreak. In the MERS epidemic, for instance, the KCDC director had an excessive burden to report the progress of the outbreak not only to President Park but also to the Minister of Health and Welfare, which could hinder timely and effective decisions for handling the outbreak. A comparison of the organizational structures between KCDC and CDC could help understand the decision-making process during the outbreak between the two countries.

| Figure 1 | Organizational Chart of the U.S. Department of Health and Human Services



Source: <http://www.netage.com/economics/gov/USHHS-chart-top.html>

| Figure 2 | Organizational Chart of the Ministry of Health and Welfare in South Korea



Source: http://www.mohw.go.kr/eng/sg/ssg0103mn.jsp?PAR_MENU_ID=1001&MENU_ID=100103

Moreover, the KCDC director did not have strong administrative authority for personnel and budget, and thus there were legal and practical constraints to hire more experts and workers during the MERS outbreak (Ryu, 2015). There was also a substantial difference in financial support from the government between these countries. While the CDC received USD 1.77 billion for Ebola preparedness and response after the Ebola outbreak in 2015¹⁾, the KCDC was granted only KRW 508 billion (USD 4.6 million) for MERS preparedness and response in 2016²⁾. This comparison implies that the MERS crisis – which resulted in greater damage compared to SARS and H1N1 – stemmed from a governmental public health system failure in South Korea. All these comparisons between the KCDC and CDC are summarized in Table 1.

Table 1 | Comparison between KCDC and CDC

| | KCDC | CDC |
|--|--|--|
| Date of establishment | 2004 | 1946 |
| Upper echelon | Ministry of Health and Welfare | Department of Health and Human Services |
| Director's position and authority | Ministerial appointee (Chief Admin. C1 level) No budgetary & personnel rights ³⁾ | Presidential appointee (Deputy Secretary level) Have budgetary & personnel rights |
| Budget (2014) | USD 510 million | USD 11.3 billion |
| Supplementary budgets after the Infectious Disease | USD 4.6 million | USD 1.77 billion |
| Workforce | 425 | 15,000 |
| International Office | 2 (Geneva, Manila) | Around 50 countries |

1) <http://www.cdc.gov/budget/ebola/index.html>

2) http://www.mers.go.kr/mers/html/jsp/Menu_1/mers03_12_04.jsp

In response to the expert advice on this concern pertaining to KCDC's limited resources, after the declaration of the end of MERS, the Korean government set aside a budget of KRW 78.6 billion (USD 70 million) for additional facilities for epidemic diseases such as negative pressure isolation rooms and quarantine facilities (Chung, 2015). However, the KCDC needs to be further expanded to include more experts and specialists who can serve as an advisory group on infectious disease and preventive medicine and a standing committee to assist policymakers at the control tower in making timely and appropriate decisions. In addition, the quality of regular staff and advisory personnel in the KCDC should be well maintained by strengthening their job security and offering consistent training opportunities. If discretionary authority is given to well-trained epidemiological experts, the response to an emergency incident is expected to be faster (Yoo, 2015).

On the contrary, despite severe criticism from most Korean media (including social media) during the MERS outbreak, in the press statement of a joint mission conducted by the WHO and the Ministry of Health and Welfare (MHW) in South Korea, the WHO evaluated that the South Korean government's efforts to prevent the spread of MERS, such as containment measures, contact tracing, monitoring, quarantine, and expanding laboratory testing, were relatively well completed (Harris & Clements-Hunt, 2015). The WHO said that the outbreak was not entirely due to by government's carelessness because MERS diagnosis is not easy and is particularly difficult in the early stage of an outbreak when awareness about it is low. WHO additionally argued that it is hard for a government to immediately recognize and suspect the

3) The director of the KCDC is now a presidential appointee position with budget and personnel authority. After the MERS outbreak, the Korean government raised the position to a deputy secretary level. (from http://www.kpanews.co.kr/article/medipharm/show.asp?idx=166277&n_category=C)

first MERS case because early symptoms of MERS look like other influenza illnesses. Moreover, the patient, who later became the first case, did not report his travel history to the Middle East when he first sought treatment (Ahn, 2015).

Poor Communication

The WHO emphasized communication as one of the core capacities for successful implementation of plans that will avoid enormous damages from an outbreak (World Health Organization, 2005a). The five key points for outbreak communication highlighted by the WHO guidelines are: (1) building, maintaining or restoring trust; (2) announcing early; (3) being transparent; (4) understanding the public; and (5) incorporating risk communication into preparedness planning World Health Organization, 2005b). In addition, in the event of an outbreak, the role of risk communicators is to align the public's risk perception with the scientific view. They must have visibility and legitimacy of their messages, understand the political and social environments, and comprehend the specific cultural milieu (Fung, Tse, Chan, & Fu, 2015).

The Korean government was strongly criticized for its poor communication strategy because it did not immediately reveal the list of the hospitals where the confirmed patients of MERS were hospitalized. (Fung et al., 2015; Kim et al., 2016). The issue of revealing the list of hospitals in which the MERS patients were treated provided acute tension between the government and the public. During the couple of weeks while the government was hesitant to release the hospital list, a tremendous amount of wrong and unauthorized information, including a false list, was spread through the internet via social media. In fact, there was a controversy about whether or not the hospital

information should be entirely open to the public. Proponents of releasing the list of hospitals in which patients were treated argued that it would help for people to track patients and result in fewer infections because of the public caution about the infection path. Opponents of releasing the information were concerned about the possibility of negative reputations for the hospital in the list and argued that it would result in a stigma (Fung et al., 2015). Others argued, however, that keeping the public away from the true information could aggravate rumors and fears, particularly if a high level of public distrust against the government's competence and honesty is prevalent. The government was very cautious in revealing the information of hospitals in order to avoid social panic.

Under public pressure, the government changed its policy and eventually publicized the list of hospitals in which MERS patients had been treated when the spread of false rumors about the hospitals was perceived to be out of control (Kim et al., 2016). On June 7, 2015, Deputy Economic Prime Minister and Minister of Strategy and Planning Choi Kyoung-hwan, who was acting as Prime Minister in South Korea, held an emergency press conference to announce the names of hospitals associated with MERS infections. This highlighted the lesson that the government's efforts at effective communication and collaboration would be critical even before the size of the infection becomes large.

The Korean government tried to provide information about MERS right after the confirmation of the first cases through press releases, regular press briefings, a 24-hour communication hotline, and the web portal site "MERS PORTAL" (www.mers.go.kr). However, according to the survey of public awareness about the government's risk communication concerning the MERS outbreak in South Korea, 53.9% of the respondents disagreed 10% strongly disagreed that the government appropriately communicated with the public. The white paper about

MERS published in 2016 suggested several reasons behind the government's failure to communicate with the public (Kim et al., 2016). First of all, there was a shortage of public communication specialists in an emergency situation. For instance, only 5~6 staff members in the KCDC were in full charge of public communication. By comparison, the CDC has a special department and 500 communication specialists solely dedicated to communication in its Office of the Associate Director for Communication.

Another concern of poor communication in South Korea was related to the lack of accuracy and congruency among the information released by multiple governmental agencies. For example, the city government of Seoul criticized the MHW for not sharing information about the confirmed patients on June 4, 2014. The next day, MHW publicized that they would not release the information due to the confidentiality concern (Hu, 2015). Such tension and miscommunication between the central and local governments made people more confused and less trusting of public information and announcements from governmental sources. In addition, many criticisms were placed on insufficient communication and collaboration between public health facilities and private clinics/hospitals in response to the epidemic. It is argued that, during the MERS crisis, the level of public-private partnership along with effective communication was way below what was required by the official disaster management manuals (Kim, 2015). In the emergency situation, the collaborative optimal operation of all available health facilities, both public and private, under one command is critical in order to minimize the impact of the epidemic.

The H1N1 outbreak in 2009 had also revealed some problems of communication among the central and local governments, medical sectors, and the general public. During the outbreak, significant confusion and miscommunication occurred among medical staffs in the

government-designated hospitals where the infected patients were treated regarding distribution of treatments and personal protection kits, availability of isolation rooms and guidelines for prescribing antiviral agents. The government's unprofessional way of communicating the core information with medical specialists and the public elevated the level of public distrust, which extended to even more serious communication issues, such as spreading unnecessary fear and anxiety among the general public. Excessive competition among the news media worsened the phenomenon. Since most people obtained information about H1N1 through media reports, over-reporting of the outcome and situation increased public anxiety and distrust toward the government (Kim, 2010).

Social Distrust

Both governmental system failure and poor communication have a negative impact on the level of social trust. Considering that one of the core missions of the government is to protect its people from enemies (Kettl, 2000) including not only physical entities but also invisible viruses, the government should take aggressive actions to fight against them. However, the mission cannot be completed without building a good level of social trust between the government and the general public (Tambo, Oljira, Oluwasogo, Khater, & Xiao-Nong, 2015). As discussed above, the Korean government did not seem to perform well in this context, including a belated disclosure of critical information and miscommunication among government organizations. For example, President Park Geun-hye was briefed on the incidence of MERS 6 days after the confirmation of the first case, and some senior officials and politicians were found to have been away from their offices or unaware of MERS for a while. Because of these inappropriate behaviors of senior

public officials, the government was criticized by the public (Choe, 2015b). During this period, the public actually experienced social panic because the process of designating the hospitals was riddled with confusion and suspected falsehoods (Choi, 2015). In many respects, the government's decision to reveal information about the hospitals was forced by public opinion. This undetermined leadership raised social confusion and anxiety, which added to the already high level of social distrust.

Several impacts of social distrust occurred among Koreans while MERS was ongoing. It stimulated many internet users to create unconfirmed sources of information about MERS, mainly on social media such as Facebook, Twitter, and Kakaotalk, where people easily communicate and share information. In the situation that the government did not reveal the list of hospitals, people were afraid of infection, so they were more likely to rely on unauthorized and unidentified information sources and to spread such information to others (Hong & Jin, 2015). The entire society could then plunge into confusion, which caused political conflicts as well (Kim et al., 2016). Such political and administrative conflicts, such as inconsistent information between the central and local government, increased the level of social distrust and eventually evolved into social and political panic.

Social distrust within the society may cause "doctor shopping," which was also pointed out as the major source of the Korean version of the MERS outbreak. The WHO argued that the common practice of going from hospital to hospital seeking care helped spread MERS in South Korea. According to the joint advisory team of the WHO and MHW, the accessibility and affordability of health care in South Korea encouraged "doctor shopping," which reflects a social culture in which patients frequently consult specialists in several facilities before deciding on a first-choice facility (Ahn, 2015).

The level of social distrust toward the Korean government was directly

measured by a telephone survey conducted in June 2015 during the MERS outbreak (Kim et al., 2016). The survey-based study found that while the level of risk-related perception of MERS was relatively low, the level of distrust toward the government was pretty high. This study insists that this high level of distrust brought about the low levels of compliance with a voluntary quarantine (Kim et al., 2016). Moreover, the people in South Korea believed that self-quarantine or voluntary quarantine program was ineffective to control the disease. Even worse, there was a public perception that any government-directed program increased the risk of MERS (Kim, 2015). A solid level of public trust toward the government during an emergency situation such as unexpected disease outbreak should increase the level of public compliance, and thus the government's programs for the purpose of preventing the spread of disease tend to achieve successful outcomes as intended (Wallerstein, 2006). As (Kim et al., 2015) argued, if there had been strong social trust in South Korea, the Korean people would have been less afraid of MERS and would have more actively followed the government's policy directions for controlling the disease.

Social distrust can be caused not only by the government but also by the media. Some argued that the media can manufacture threats to the public health and the threats can evolve to historical and cultural myths of fear among people within a society. In this framework, the media may contribute to unwarranted public fear, intolerance, and distrust (Muzzatti, 2005). In the reality of MERS, after the official confirmation of the first patient, most of the news media used sensational headlines about MERS that exaggerated how dangerous and contagious it was. It seems evident that, although there is an opinion that South Korea did a great job during the spread of MERS (Butler, 2015), such irresponsible and uncontrolled messages from the media contributed to public fears of infection and as a result aggravated social distrust in Korean

society that then resulted in social overreactions to the disease such as temporary shut-down of kindergartens and elementary schools in spite of minimal risk of community infection. A medical expert said that closing schools was medically wrong because most MERS patients were infected in health clinics (Choe, 2015a). It is known that social trust is one of important factors that could reduce the number of infected patients and prevent the severe spread of a disease (Rosenbrock, 1987). However, enhancing social trust takes a long time and needs society-wide collaborative efforts including the government, the media and the public.

Summary

In this case study document, we reviewed three major infectious diseases outbreaks in South Korea since 2000 (SARS, H1N1 and MERS) and discussed how the country addressed each of the epidemics, focusing on three sources of the public health crises: governmental system failure, poor communication and social distrust. The discussion on these issues provided by this document, along with relevant materials, facilitates a constructive debate which can provide a valuable contribution to the design of informed public health policy in South Korea.

Table 2 shows a summary of the comparisons among the three outbreaks discussed so far. Although a direct comparison among them is limited considering their intrinsic distinctions such as pathologic and epidemiologic characteristics, a comparative review of these experiences would facilitate a constructive discussion among policymakers, stakeholders and the public to improve the government's disease control and prevention system, facilitate an open and unbiased communication process and decrease the level of

social distrust in South Korea. This case study can provide guidance for debates among policymakers, stakeholders, scholars and students pertaining to the issues, which can then generate wisdom for the Korean government and society on how to avoid repeating the same mistakes and challenges from the past epidemics when the next public health crisis comes.

| Table 2 | Comparison of Three Infectious Disease Outbreaks in South Korea

| | SARS | H1N1 | MERS |
|---|-------------------------------------|---|---|
| Time of the first case | September 2003 | May 2009 | May 2015 |
| Cases | 3 | 750,000 | 186 |
| Death | 0 | 252 | 36 |
| Mortality | 0% | 0.03% | 19.35% |
| Policy / System changes | KCDC founded | None | KCDC expanded and promoted |
| Communication process | Good | Poor between government and local hospitals | Poor between government & public; between central and local governments |
| Control tower | Prime Minister | Prime Minister | None |
| President's approval rating after the epidemic ^{c4)} | 29% | 27% | 33% |
| Isolated people | 2,200 | N/A (distributing antiviral agents) | 1,364 |
| Time quarantine started | Before the first case was confirmed | Before the first case was confirmed | 2 weeks after the first case was confirmed |

4) <http://weekly.khan.co.kr/khnm.html?mode=view&artid=201407141653231&code=113>

Questions for Discussion

- What were the key factors that caused nationwide social panic during the MERS crisis in South Korea in comparison with the two previous outbreaks of SARS and H1N1?
- Was the Korean government's preparedness and response to SARS, H1N1 and MERS appropriate? Why or why not?
- Did the Korean government system including the main responsible agency (KCDC) have enough capacities and adequate organizational structure to control an unprecedented disease such as SARS or MERS in comparison to the U.S. CDC?
- Was the Korean government's information sharing strategy about diseases and patients suitable during the infectious disease outbreaks?
- What are the roles and responsibilities of the central government and local governments in handling a public health crisis?
- What is the mechanism of trust and distrust formation among the government, news media and people within their complex relationships and interactions?
- How could a high level of social distrust aggravate the public health crisis in a country (e.g., broken communication process, non-compliance with the government's direction, excessive untrustworthy information, etc.)?
- Which would be the most critical barrier to handling a public health crisis in the Korean context: government system failure, poor communication or social distrust? What about in your country or region?

References

- Ahn, Y.-J.(2015). ‘Doctor Shopping’ Helped Spread MERS, World Health Organization Says. NBC NEWS.
- Butler, D.(2015). South Korean MERS Outbreak is Not a Global Threat. Nature. Retrieved from <http://www.nature.com/news/south-korean-mers-outbreak-is-not-a-global-threat-1.17709>. doi, 10.
- China, R.(2009, April 26, 2009). FACTBOX-Asia Moves to Ward Off New Glu Virus, Reuters. Retrieved from <http://www.reuters.com/article/idUST344175>
- Choe, S. H.(2015a, June 1, 2015). Fears of MERS Virus Prompt Broadening of Cautions in South Korea, The New York Times. Retrieved from http://www.nytimes.com/2015/06/04/world/asia/south-korea-mers-cases-lead-schools-to-close.html?_r=2
- _____(2015b, Jne 12, 2015). MERS Tarnishes Korean President’s Image as Leader, The New York Times. Retrieved from http://www.nytimes.com/2015/06/13/world/mers-tarnishes-korean-presidents-image-as-leader.html?_r=0
- Choi, H. J.(2015, June 8, 2015). Government Belatedly Changes Quarantine Policy “Disclose Names of All Hospitals,” The Kyunghyang Shinmum. Retrieved from http://english.khan.co.kr/khan_art_view.html?artid=201506081916067&code=710100
- Choi, W., Yim, J., Park, J., Kim, S., Na, M., Lee, W.,… Kim, W.(2011). Clinical Characteristics and Outcomes of H1N1-Associated Pneumonia Among Adults in South Korea. The International Journal of Tuberculosis and Lung Disease, 15(2): 270-275.

- Chu, C., Lee, J., Choi, D. H., Youn, S. K., & Lee, J. K.(2011). Sensitivity Analysis of the Parameters of Korea's Pandemic Influenza Preparedness Plan. *Osong Public Health and Research Perspectives*, 2(3): 210-215.
- Chung, A. Y.(2015). Korea Yet to Recover from MERS Completely, *The Korea Times*. Retrieved from http://www.koreatimes.co.kr/www/news/nation/2015/12/116_194030.html
- Dennis, D. T., Inglesby, T. V., Henderson, D. A., Bartlett, J. G., Ascher, M. S., Eitzen, E.,...Layton, M.(2001). Tularemia as a Biological Weapon: Medical and Public Health Management. *Jama*, 285(21): 2763-2773.
- Fung, I. C. H., Tse, Z. T. H., Chan, B. S. B., & Fu, K. W. (2015). Middle East Respiratory Syndrome in the Republic of Korea: Transparency and Communication are Key. *Western Pacific Surveillance and Response Journal: WPSAR*, 6(3): 1.
- Gal, A., & Jun, K.(2015). Korea's MERS Outbreak Highlights SARS Lessons, *The Wall Street Journal*.
- Harris, M., & Clements-Hunt, A.(2015). WHO Recommends Continuation of Strong Disease Control Measures to Bring MERS-CoV Outbreak in Republic of Korea to an End [Press release]
- Hong, S.-J., & Jin, M.-J.(2015). MERS and Social Media Intersect, *Korea JoongAng Daily*. Retrieved from <http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=3005702>
- Hong, Y.(2015, June 17, 2016). Useless MERS's Guildlines *NEWSTAPA*. Retrieved from <http://newstapa.org/26394>
- Hu, E.(2015). South Korea's MERS Crisis Exposes Public Distrust Of Leaders, *NPR*. Retrieved from <http://www.npr.org/sections/goatsandsoda/2015/06/05/412118009/so>

uth-koreas-mers-crisis-exposes-public-distrust-of-leaders

Ji, Y.(2015). Diffent Responses between President Rho and Park, Ohmynews.
Retrieved from

http://www.ohmynews.com/NWS_Web/View/at_pg.aspx?CNTN_CD=A0002116048

Kettl, D. F.(2000). The Transformation of Governance: Globalization, Devolution, and the Role of Government. *Public Administration Review*, 60(6): 488-497.

Ki, M.(2015). 2015 MERS Outbreak in Korea: Hospital-to-Hospital Transmission. *Epidemiology and Health*, 37.

Kim, D.-H.(2015). Structural Factors of the Middle East Respiratory Syndrome Coronavirus Outbreak as a Public Health Crisis in Korea and Future Response Strategies. *Journal of Preventive Medicine and Public Health*, 48(6): 265-270.

Kim, E., Liao, Q., Yu, E., Kim, J., Yoon, S., Lam, W., & Fielding, R.(2016). Middle East Respiratory Syndrome in South Korea during 2015: Risk-Related Perceptions and Quarantine Attitudes. *American Journal of Infection Control*.

Kim, J. Y.(2016). The 2009 H1N1 Pandemic Influenza in Korea. *Tuberculosis and Respiratory Diseases*, 79(2): 70-73.

Kim, N., Kim, T., Park, E., Song, E., Jun, J., Choi, S.,... Kim, T.(2016). The 2015 MERS Outbreak in the Republic of Korea: Learning from MERS (White Paper).

Kim, N., Park, E., Jun, J., KIM, D., Jung, J., Kim, J.,... Kim, D.(2015). A Study on Infectious Disease Prevention and Control Systems of Korea: Focused on the Middle East Respiratory Syndrome Coronavirus: Korea Insitute for Health and Social Affairs.

Kim, W.(2010). *Pandemic Influenza(H1N1 2009): Experience and Lessons*.

- Infect Chemother, 42(2): 61-63.
- Kim, Y. W., Yoon, S. J., & Oh, I. H.(2013). The Economic Burden of the 2009 Pandemic H1N1 Influenza in Korea. *Scandinavian Journal of Infectious Diseases*, 45(5): 390-396.
- Lee, B.(2015). Foreign Travellers to Get Automatic MERS Insurance from S. Korea Government. the Hankyoreh. Retrieved from http://english.hani.co.kr/arti/english_edition/e_international/697124.html
- Lee, D.(2015). Government Administrative Control Tower in Crisis Management System: Definition, Issues, and Policy Implications. *Korean Journal of Policy Studies*, 30(3): 125-145.
- Lee, E.(2015, Sept 25, 2015). Unclear Standards for Compensation, *Korea Joongang Daily*. Retrieved from <http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=3009647>
- Lee, H. Y., Oh, M. N., Park, Y. S., Chu, C., & Son, T. J.(2013). Public Health Crisis Preparedness and Response in Korea. *Osong Public Health and Research Perspectives*, 4(5): 278-284.
- Lim, P. L.(2015). Middle East Respiratory Syndrome (MERS) in Asia: Lessons Gleaned from the South Korean Outbreak. *Transactions of The Royal Society of Tropical Medicine and Hygiene*, 109(9): 541-542.
- Lim, S., Choi, H. S., Shin, H., Ahn, J. H., Baik, J. J., Choi, Y. H., & Lee, J. K.(2004). Three cases of severe acute respiratory syndrome imported into South Korea. *Korean Journal of Medicine*, 67(6): 655-661.
- McGrath, B.(2015, 23 June). MERS Outbreak Exposes South Korean Government's Lack of Preparation, *World Socialist Web Site*. Retrieved from <https://www.wsws.org/en/articles/2015/06/23/mers-j23.html>
- Muzzatti, S. L.(2005). Bits of Falling Sky and Global Pandemics: Moral Panic

- and Severe Acute Respiratory Syndrome (SARS). *Illness, Crisis, & Loss*, 13(2): 117-128.
- Osterholm, M. T.(2005). Preparing for the Next Pandemic. *New England Journal of Medicine*, 352(18): 1839-1842.
- People's Daily Online.(2003, May 7, 2003). S. Korea to Spend U.S. \$5.5 million on Preventing SARS Spread, People's Daily Online. Retrieved from http://en.people.cn/200305/07/eng20030507_116360.shtml
- Rosenbrock, R.(1987). Some Social and Health Policy Requirements for the Prevention of AIDS. *Health Promotion International*, 2(2): 161-168.
- Ryu, K.-H.(2015, June 20, 2015). The Korea Centers for Disease Control and Prevention DongA. Retrieved from http://news.donga.com/List/Series_70030000000712/3/70030000000712/20150620/71971437/1
- Seungki, Y.(2015, 20 August). News Analysis: What lessons S. Korea learn from MERS outbreak, Asia & Pacific Edition. Retrieved from http://news.xinhuanet.com/english/2015-08/20/c_134537135.htm
- Shankar, S.(2015). MERS Outbreak Hits Puth Korea Economy, GDP Growth at 6-Year Low, *International Business Times*. Retrieved from <http://www.ibtimes.com/mers-outbreak-hits-south-korea-economy-gdp-growth-6-year-low-2021093>
- Smith, R. D.(2006). Responding to Global Infectious Disease Outbreaks: Lessons from SARS on the Role of Risk Perception, Communication and Management. *Social Science & Medicine*, 63(12): 3113-3123. doi: 10.1016/j.socscimed.2006.08.004
- Suh, M., Kang, D. R., Lee, D. H., Choi, Y. J., Tchoe, B., Nam, C. M.,... Youm, Y.(2013). Socioeconomic Burden of Influenza in the Republic of Korea, 2007~2010. *PloS one*, 8(12), e84121.
- Tambo, E., Oljira, T., Oluwasogo, O. A., Khater, E. I., & Xiao-Nong, Z.(2015). Averting MERS-Cov Emerging Threat and Epidemics: the Importance of

Community Alertness and Preparedness Policies and Programs. Prevention and Infection Control.

Wallerstein, N.(2006). What is the Evidence on Effectiveness of Empowerment to Improve Health?

World Health Organization.(2005a). Risk Communication and the International Health Regulation. World Health Organization.

_____(2005b). WHO outbreak communication guidelines. Author.

World Health Organization. (2009). Pandemic H1N1 2009.

Yoo, S.(2015, 20 August). News Analysis: What Lessons S. Korea Learn from MERS Outbreak, Asia & Pacific Edition. Retrieved from http://news.xinhuanet.com/english/2015-08/20/c_134537135.html