

Opinion

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Healthcare-associated Infection Control on the Edge of a 'Carrot-and- Stick' and a 'Crime-and-Punishment' Frame

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Nowadays in Korea, legal problems with healthcare-associated infection (HAI) are prosecuted under criminal law. And the doctors and nurses who are tied to this problem are summoned by the police as suspects. Their homes are subjected to domiciliary search and their possessions are confiscated. Moreover, even a bill is under way to forcibly close a hospital if a patient dies by carelessness of medical staff.

Is this true? Yes, it is real.¹

Today, concern about HAI is not only limited to infection control specialists, but extends to all medical personnel, government agencies, and even the public.² In addition, the responsibility and role of medical institutions for infectious disease management are greatly emphasized. In order to establish a system to prevent medical related infections, the Medical Law has been revised, and the proportion of infection control in the quality assessment and patient safety items of medical institutions is increasing. In addition to that, it reached the scope of investigation by the police.

Until the 21st century, about two-thirds of HAIs were recognized as not preventable,³ but now the concept has changed so that most hospital infections can be prevented. This frame-shift also affected the designation of professional workers engaged in HAI and changed the term from infection control practitioners to infection preventionists. This change in name suggests that infectious disease management is not only a practice but also a pressure that HAI must be prevented. The problem comes from this philosophy: 'Most healthcare-associated infections are preventable.'

The majority of infectious diseases have contagious properties, which makes it possible to go beyond the disease problem of one individual to a group occurrence, i.e., an outbreak. This condition is mainly met where a large number of people are gathered in a specific space, and the representative place is a medical institution.

A medical institution is essentially a place for medical treatment. When a medical practice is performed, it is inevitable that contact with a patient's body will occur. This is not just skin contact, but invasive procedures often need to be done. This process breaks down the most basic defense barriers of each individual patient and the patient is vulnerable to infectious complications. All the above-mentioned factors work together to cause HAI. However, the

process of generating these HAIs is difficult for the public to understand easily, and the public cannot tolerate HAI.

The fundamental reason for HAI is in the medical infrastructure. This means that each hospital has its own limitations, and the government should intervene.

The ideal government intervention in the context of HAI is not a regulation but a carrot and stick policy. In fact, the easiest option for the government is to put medical staff in a crime and punishment frame. However, although this may be effective immediately, there are more losses in the long run.

In the United States, Medicare no longer pays reimbursements for 14 common healthcare-acquired infections and patient safety incidents, such as pressure ulcers or nosocomial pneumonia, since 2012, based on the US Federal Deficit Reduction Act of 2005.⁴ To be honest, this is not based on the philosophy that 'Most HAIs are preventable' but because of their budget cuts. Looking back on what happened with HAI in Korea so far, I think this US case might be possible someday in Korea.

Again, are most HAIs really preventable? Is it possible to eradicate all the potential HAIs to zero?

The core of HAI control is to prevent the replication and propagation of resistant organisms.

Transmission blocking is divided into two major directions, one to prevent vertical transmission and the other to prevent horizontal propagation. Vertical transmission is the genetic inheritance of resistance from generation to generation, and proper control of antibiotics is essential to prevent this, that is to say, antibiotic stewardship.

Horizontal propagation is that resistant bacteria copy their resistance to others of the same generation. It is mostly mediated by a mobile gene such as a plasmid or transposon. A typical example is the carbapenemase-producing *Enterobacteriaceae* (CPE) which is a hot issue lately. Owing to mobile means to propagate resistance, it is too fast to block. Therefore, preventing horizontal propagation is the essence of infection control of resistant bacteria. For this purpose, contact precautions including hand hygiene should be thoroughly performed. However, doing this thoroughly will not necessarily make the infection rate zero, because the mechanism by which HAI occurs is very diverse and complicated more than we know. Most of the HAI should be preventable, but there are also unavoidable HAIs. If this is unacceptable and zero tolerance is forced, healthcare providers will continue to be locked in a criminal law frame like this incident, coupled with HAI. The public may be excited about punishing doctors and nurses, but the damage will eventually come back to everyone.

Korea is among the Organisation for Economic Co-operation and Development (OECD) countries with the lowest medical expenditure budget and the number of public hospitals is the lowest. As the health insurance system continues to be based on low medical fees, hospitals are in a hurry to make profits rather than build basic infrastructures for patient safety. In the end, the lack of interest of the health authorities and the paucity of the philosophy of safe hospitals have caused the death of several newborn babies. Even if the hospitals have good will to do their best for the patient's health and safety, it is necessary to improve and establish the infrastructure, and especially to secure sufficient medical

staff. After learning lessons from this incident, it is necessary to improve the system and to complement the budget so that the appropriate level of manpower can work.

The best reward for health care experts is to let them do what they want to do. Therefore, infection control doctors and nurses should be provided with the appropriate environment to run infection control strategies and programs. To do this, the government must pay for the hospital and the hospital administrator should provide full support.

The key is the attitude of the government. The government is still less interested and has little understanding of the impact that infection management has on the entire healthcare system and the benefits (including cost-effectiveness) that can be gained through active infection control. As long as the government has the leadership of our healthcare system, the government should actively promote government-led investment and policy drive on infrastructure.

The 'gray rhino'⁵ would come suddenly not because the signal is weak but because we deliberately ignore the danger signal.

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