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감염병 대응을 위한 지역사회 공간자원 활용체계 구축방안 : 생활치료센터를 중심으로

Establishment of the System for Using Local Spatial Resources in Response to Infectious Diseases : Focusing on Temporary Medical Facilities

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SUMMARY

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Introduction

COVID-19, which broke out at the end of 2019, was declared as a pandemic, 10 years after the declaration of the swine flu as a pandemic. Since the first confirmed case was reported in Korea in January 2020, about 320,000 confirmed cases have been generated (as of October 2021), and the infection is spreading rapidly and broadly. Experiencing the infectious disease that has deeply penetrated into the local communities, the government has introduced the concept of 'distancing in daily life' as a means of suppressing the disease, together with 'social distancing,' and devoted all its power to the disease prevention by establishing and operating semi- or non-medical facilities, such as 'temporary medical facility' and 'temporary residential facility.'

The temporary medical facility is a novel treatment method that has the functions of medical service and temporary residence, and that is used as a means to block the possibility of community transmission. To establish the temporary medical facilities, the government temporarily converted the existing facilities in the communities, such as the public and private training centers, dormitories and accommodations, into quarantine

facilities. This policy is highly evaluated in terms of the efficient distribution of medical resources.

However, in the frontline for urgently securing the non-medical facilities as the temporary medical facilities, there were many difficulties, including the difficulties in verifying the facility information, securing the sufficient number of quarantine rooms that satisfy the appropriateness criteria, negotiating with the ownership entities of the facilities, and resolving the conflicts with the local residents.

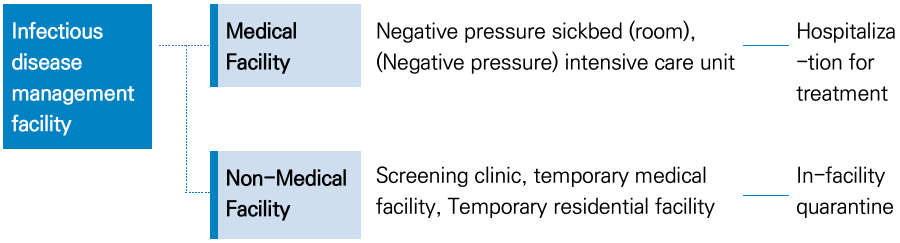
People have experienced through COVID-19 that the damage by an infectious disease is not just limited to the public health and medical sectors but it may spread to the overall society and economy. Therefore, the facilities related to the suppression of the transmission of infectious diseases, including medical institutions, are considered as necessary a social capital in preparation of the uncertain future disasters. Currently, the disease prevention policies of the government, including the temporary medical facilities, are internationally standardized in the name of 'K-disease prevention model.' Therefore, more systematic disease preparedness may be realized by preparing policies and systematic basis as well as promotion plans for utilizing the temporary medical facilities.

The present article proposes a system for utilizing local spatial resources as a method for improving the securing procedures and operational limitations of the temporary medical facilities that have been introduced in response to community transmission of the infectious disease. Based on the proposed system, this article also suggests the preparation of preliminary investigation and management plans and the provision of operational procedures in pursuit of effective response to new infectious diseases that have the characteristics of community infection and transmission.

Analysis of Existing Systems Related to Temporary Medical Facilities and Their Operation Status

According to the current laws and systems, an infectious disease is considered as a social disaster, and subject to the Framework Act on the Management of Disasters and Safety

(hereinafter referred to as 'the Disasters and Safety Act') and the relevant regulations. The law that is mainly related with the response to an infectious disease is the Infectious Disease Control and Prevention Act (hereinafter referred to as 'the Infectious Disease Control Act'). This law stipulates the legal plan related to infectious diseases as well as the response system, including facilities and information management, and operates a separate guideline regarding the outbreak of and response to a specific infectious disease. The legal basis of the temporary medical facilities, newly introduced in the process of responding to COVID-19, is Article 37, Paragraph 1, Subparagraph 2 of the Infectious Disease Control Act. When a number of patients with an infectious disease are generated, the temporary medical facilities may be established and operated by the central government and the municipal governments.



[Figure] Classification of infectious disease control facilities

We analyzed the status and characteristics of the establishment and operation of the temporary medical facilities (55 facilities) in response to COVID-19, and conducted on-site investigation of 3 temporary medical facilities as well as interviews and surveys with the hands-on workers. The derived operational limitations and tasks are described below.

First, the current works related to the temporary medical facilities include the facility securing, establishment and operation steps all together. Different work patterns were found according to the administrative cooperation by the departments of the central government in relation to the infectious disease. Therefore, it is necessary to designate an institution for supervising the works in view of the entire disaster response framework so that the cooperation and support system may function smoothly.

Second, securing temporary medical facilities in advance is necessary, but consultative procedures and means should be prepared. In particular, the roles should be divided in consideration of the non-uniform distribution of the resources among different regions

(between Greater Seoul Area and non-Greater Seoul Areas and between urban areas and rural areas) and owners (state, municipal governments and civilians).

Third, the facilities that can be appropriately converted into temporary medical facilities may need to be prioritized, focusing on the structural conditions of the facilities. In terms of 'quarantine,' which is the most important function of the temporary medical facilities, the total quantity, location and conversion easiness of the resources that satisfy the facility criteria should be investigated and managed in advance for saving the temporary medical facilities in the utilization system.

Examination of Local Spatial Resource Utilization Method for Securing Temporary Medical Facilities in Advance

To examine the possibility of securing temporary medical facilities in advance, a pilot survey was performed regarding the spatial resources within the areas of two regional municipal governments, and the methods for converting and utilizing the spatial resources were discussed according to the infectious disease transmission scenario in consideration of their total quantity and priority. The process for converting and utilizing the spatial resources was discussed by considering both the facility characteristics (ownership entity, quarantine size and quarantine type) and the location characteristics of the individual spatial resources (neighboring population and access to temporary medical facilities and medical facilities). In addition, an optimization model was employed as a method for efficiently inputting the administrative expense. The two regional municipal governments subject to the analysis were Incheon Metropolitan City and Chungam Province, the former being in the Grater Seoul Area and an urban area (regional city) and the latter being in the non-Grater Seoul Area and a rural area (regional province), in consideration of the infectious disease transmission characteristics and the spatial resource ownership characteristics. The following implications and tasks were derived from the pilot survey of the spatial resources in the two regions and the examination of the conversion and utilization methods.

First, the issue of responding to the infectious disease was developed in different

patterns, depending on the differences in the spatial resource distribution characteristics between the Grater Seoul Area and the non-Grater Seoul Area and between the urban area and the rural area. While the issues in the Grater Seoul Area are related to the total quantity of the available spatial resources and the securing of privately owned resources, the issues in the non-Greater Seoul Area are related to the securing of the resources for minimizing administrative expense to utilize the sufficient resources.

Second, the advancement of the infectious disease response system may be supported by investigating the status of the spatial resources and examining the conversion and utilization scenario. The examination of the infectious disease scenario allowed for the prediction of the priorities of converting the facilities, according to which the total quantity of the resources in the individual regions may be estimated and the subjects requiring preliminary consultation may be specified in order to provide the administrative response strategy.

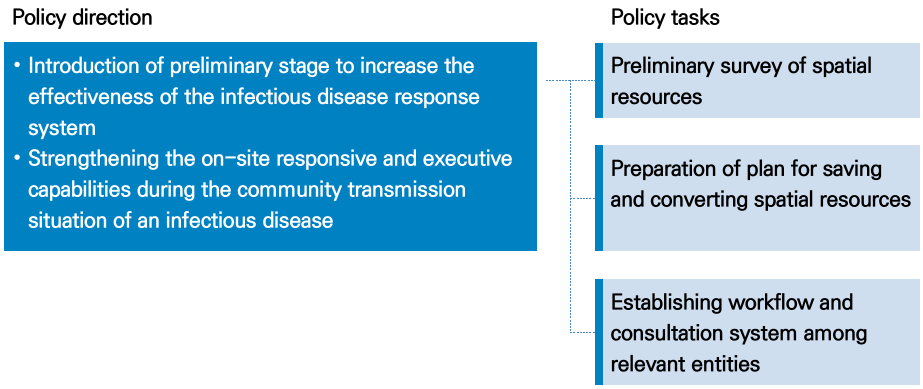
Third, the analysis showed that, nevertheless, many facilities require preliminary actions to utilize the spatial resources according to the plan. Therefore, to rapidly respond to an outbreak of an infectious disease-related disaster by mobilizing the available spatial resources, the government is significantly required to save and manage spatial resources for providing customized support.

Plans for Making Policies to Utilize Local Spatial Resources in Response to Infectious Diseases

As indicated by the survey of the status of the spatial resources and the method for conversion, the basis for deciding what facilities should be converted at which point of the infection transmission stages may be prepared, if a prior plan for securing and managing the spatial resources is prepared and a preliminary utilization agreement is made with the individual ownership entities.

Therefore, the basic direction of the policies, determined in the present study, is to introduce the 'preliminary stage' in order to increase the effectiveness of the infectious disease response system, strengthening the on-site executive and responsive capabilities

during the community transmission situation of an infectious disease. Accordingly, the following 3 policy tasks are suggested.



[Figure] Basic policy direction and policy tasks

First, a survey should be performed about the status of the spatial resources that can be appropriately utilized as temporary medical facilities. The purpose of this survey is to preemptively identify and manage the facilities having the spatial structure and characteristics suitable for the quarantine of infected patients, from among the spatial resources distributed in different areas. Therefore, the survey may be appropriately carried out by the elementary municipal governments.

Second, a plan for saving and converting spatial resources should be prepared. The purpose of this task, which should be performed by the regional municipal governments, is to merge the lists of the spatial resources gathered by the elementary municipal governments to understand the total quantity of the quarantine spaces in the regions and to screen the available spatial resources by examining the scenario in consideration of the attributes and locational conditions of the individual resources.

Third, a workflow and consultation system should be established for the entities that establish and operate the temporary medical facilities by using the spatial resources. Since the conditions that require work connection and cooperation are found in complex and various patterns in relation to the works for securing and operating the current temporary medical facilities, a comprehensive workflow and consultation system needs to be established to incorporate different entities.

The promotion of the proposed policy tasks requires improvement of the system in two

aspects. First, a legal basis should be prepared for the utilization of the spatial resources. Second, a legal basis should also be prepared for the work of establishing the plan for saving and converting the spatial resources. In this article, we reviewed the resources in the 'facility' sector in the 'Disaster Management Resources' managed according to the Disasters and Safety Act, the legal basis of utilizing the spatial resources. The tasks, such as survey, management and screening, may be performed according to the relevant regulations. The legal basis for the work of establishing the plan for saving and converting the spatial resources may be prepared through the 'Basic (Enforcement) Plan for Prevention and Control of Infectious Diseases' of the central government and the regional municipal governments.

In the current situation where the COVID-19 pandemic continues, the significance of the present study is that the basis for efficient utilization and distribution of medical resources was discussed by reflecting the spatial elements through the access to the spatial policy in response to the infectious disease, and the relevant policies were proposed.

Keywords :

COVID-19, response to infectious disease, spatial resource, allocation of resources, temporary medical facilities