

عنوان مقاله:

?The Spatial Allocation of Hospitals With Negative Pressure Isolation Rooms in Korea : Are We Prepared for New Outbreaks

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خلاصه مقاله:

Background Allocation of adequate healthcare facilities is one of the most important factors that public health policy-makers consider when preparing for infectious disease outbreaks. Negative pressure isolation rooms (NPIRs) are one of the critical resources for control of infectious respiratory diseases, such as the novel coronavirus disease 2019 (COVID-19) outbreak. However, there is insufficient attention to efficient allocation of NPIR-equipped hospitals. Methods We aim to explore any insufficiency and spatial disparity of NPIRs in South Korea in response to infectious disease outbreaks based on a simple analytic approach. We examined the history of installing NPIRs in South Korea between the severe acute respiratory syndrome (SARS) outbreak in 2003 and the Middle East respiratory syndrome coronavirus (MERS-Cov) in 2015 to evaluate the allocation process and spatial distribution of NPIRs across the country. Then, for two types of infectious diseases (a highly contagious disease like COVID-19 vs. a hospital-based transmission like MERS-Cov), we estimated the level of disparity between NPIR capacity and demand at the sub-regional level in South Korea by applying the two-step floating catchment area (2SFCA) method. Results Geospatial information system (GIS) mapping reveals a substantial shortage and misallocation of NPIRs, indicating that the Korean government should consider a simple but evidence-based spatial method to identify the areas that need NPIRs most and allocate funds wisely. The 2SFCA method suggests that, despite the recent addition of NPIRs across the country, there should still be more NPIRs regardless of the spread pattern of the disease. It also illustrates high levels of regional disparity in allocation of those facilities in preparation for an infectious disease, due to the lack of evidence-based approach. Conclusion These findings highlight the importance of evidence-based decision-making processes in allocating public health facilities, as misallocation of facilities could impede the responsiveness of the public health system during an epidemic. This study provides some evidence to be used to allocate the resources for NPIRs, the urgency of which is heightened in the face of rapidly evolving threats from the novel COVID-19 outbreak.

کلمات کلیدی:

Infectious Disease Outbreak, Health Facility Allocation, Geographic Information System, Evidence-Based Health Policy, South Korea

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