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Letter to the Editor

Taiwan can help—Community protection net: preventive effects of the Northern Taiwan Centralized Quarantine Center against SARS-CoV-2

The number of global deaths caused by coronavirus disease (COVID-19) is over 2 million, with a fatality rate of 2.218%.¹ In response to the SARS-CoV-2 outbreak, the Taiwanese government has implemented numerous policies, including border control, proactive testing, acquisition of sufficient supplies for COVID-19 prevention, constant provision of pandemic-related information to the public (via the LINE application, Facebook, news media, etc.), and promoting the wearing of face masks, frequent hand washing, and social distancing. The Taiwanese government has also established the Central Epidemic Command Center, which cooperates with central and local government departments to coordinate resources. On January 31, 2020, centralized quarantine centers (CQCs) were established around Taiwan to assist in COVID-19 prevention.^{2,3}

CQCs primarily contain inbound travelers from countries affected by the pandemic. On their arrival in Taiwan, travelers sign a centralized quarantine declaration form at the airport, arrange a private vehicle to commute to a CQC, and are quarantined for a duration of 14 days. CQCs also accommodate those wishing to quarantine after close contact with confirmed cases, those who cannot quarantine at home, and work personnel who need to quarantine. As of January 2021, Taiwan had 35 CQCs with a total of 3765 rooms located in Northern, Central, and Southern Taiwan. CQC task groups consist of security, logistics, and health workers.^{4,5} The concept of prevention using CQC was combined with TCB (traffic control bundling) and the public health three-stage prevention.⁶ In Taiwan, in addition to self-protection measures, there are three additional layers of measures for community protection. The first layer was border control for inbound and outbound travelers, whereas the second layer was implemented for community control; wherein inbound travelers were directly quarantined in the CQC before entering the community. If symptoms appeared while quarantining in the CQC, the individual was evacuated for medical treatment. The third layer was hospital control, wherein measures such as patient diversion, visitor control, and personnel management were implemented.

The CQCs in Northern Taiwan also have established a '3C' care model (careful, concern, and confidence). Wherein people under quarantine at the CQC can stay there at ease (careful), can pass the 2-week quarantine period under the attentive care of medical personnel (concern), and up on receiving a negative SARS-CoV-2 result on day 13 of quarantine, they will be discharged from the CQC the following day assured that they are free of infection (confidence). The CQCs in Taiwan not only provide individuals with a space to be quarantined, but their critical purpose is to ensure that Taiwan's limited acute medical resources are reserved for

confirmed cases. This helps Taiwan successfully achieve the compartmentalization of quarantine and acute medicine. CQCs differ from general quarantine hotels mainly because they have medical personnel on site, and they serve as community pandemic prevention outposts. If quarantined individuals have medical issues, they can receive treatment while under quarantine, which ensures personal health and safety. And the biggest difference between CQC and mobile cabin hospital is that CQC takes care of quarantine persons, while mobile cabin hospital takes care of patients with mildly positive confirmed cases.

Current effectiveness of CQCs in Northern Taiwan

Although SARS-CoV-2 vaccines have been invented, mass vaccination poses numerous, uncertain risks in the community. Therefore, other methods to reduce the spread of SARS-CoV-2 need to be implemented simultaneously. A systematic literature review concluded that quarantine can reduce the number of SARS-CoV-2 cases by 44–96% and the fatality rate can be reduced by 31–76%; therefore, quarantine is a critical and effective method to control SARS-CoV-2.⁷ Taiwan's CQCs have been established for a year, and preliminary data from the 3 CQCs in Northern Taiwan have yielded the following results:

1. CQCs can consolidate the confirmed rate of positive cases and avoid community cluster infection. As of December 26, 2020, Taiwan had 783 confirmed SARS-CoV-2 cases. Among them, 259 were confirmed in CQCs (33.1% of the total). No cluster infections occurred in the CQCs or in the communities.
2. Comprehensive '6T' cross-team professional care was established in the CQCs of northern Taiwan. Team security and Tackle everything, the security groups of CQCs are supported by the Taiwanese police to ensure the security of the CQCs. Tender care: After checking-in, nurses monitor people's health every day through e-caring, wherein via mobile phones, clinically-relevant information is extracted from the patient. Telehealth: As of December 31, 2020, a total of 192 people under quarantine had received telehealth and treatment. Most problems analyzed using telehealth and treatment were related to internal medicine (128 people; 66.7%). Yen et al. calculated that approximately US\$894 are required for each person under quarantine at the CQCs for 14 days.⁵ Transmit medication and Take rest: After doctors perform telehealth and treatment measures, they prescribe medications for the pharmacists to deliver. Every day, nurses call people under quarantine to provide care, and people also use a QR code to complete the Brief Symptom Rating Scale online, as personal emotion management.⁸ For individuals with

a total score exceeding six points, the nurses refer them to a psychotherapist for care or consultation through audio calling.

When faced with a crisis, the government usually has to make the best decision rapidly under time constraints. We strongly believe that emerging communicable diseases will not be limited to COVID-19. We should therefore give importance to planning effective response strategies against future communicable diseases on a global scale. The results of Taiwan's pandemic prevention may indicate that in addition to pandemic prevention policies such as wearing face masks and maintaining social distancing, establishing CQCs may serve as a tight isolation net to stop the spread of contagious viruses in the community.^{9,10}

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