

Interventions in a COVID-19 Outbreak in a Regional Hospital During The Early Stage of Level 3 Epidemic Alert, Taoyuan, Taiwan, 2021

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Abstract

Coronavirus disease 2019 (COVID-19) was first reported in China and subsequently caused a global pandemic. Taiwan experienced the first wave of large-scale community transmissions of COVID-19 in mid-May 2021. The Central Epidemic Command Center maintained the zero-COVID strategy and announced the nationwide level 3 epidemic alert for COVID-19 on May 19, 2021. We described the investigation and response to the largest nosocomial COVID-19 outbreak in a regional hospital (Hospital A) in northern Taiwan during the early stage of level 3 alert.

The index case was a nurse without known contact history. Confirmed cases were individuals with PCR-confirmed SARS-CoV-2 infection epidemiologically linked to outbreak cases. The transmission period ranged from 3 days before the onset to the day of isolation. Close contacts were individuals having face-to-face contact with confirmed cases during the transmission period. Persons at risk were individuals who had stayed in the same hospital unit with the confirmed cases for more than 8 hours during the transmission period. All confirmed cases were interviewed to trace contacts and determine the possible route of transmission. All contacts and persons at risk were tested for SARS-CoV-2. Close contacts were quarantined until 14 days after the last contact with confirmed cases. The in- and outpatient services of Hospital A were restricted for outbreak control.

We found 391 healthcare-related and 58 community-related contacts. A total of 9,837 of SARS-CoV-2 tests were performed and 36 confirmed cases involving 4 hospital units were identified, comprising of 3 nurses, 12 caretakers, 15 patients, and 6 family members of patients. Delayed reporting of symptoms and COVID-19 testing of infected healthcare workers hindered early detection of the outbreak. Cross-ward and

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cross-unit interactions between patients and caretakers in the hospital further increased the extent of nosocomial transmission. Visitors who violated the access control of Hospital A increased the possibility of transmission to the community.

This nosocomial COVID-19 outbreak occurred in 4 units of a regional hospital, affecting healthcare workers, patients, and community contacts. Strengthening of symptoms surveillance, periodic testing, segregation and flow control measure of healthcare workers, and access control of visitors facilitate early detection of outbreaks and prevent the nosocomial transmission of COVID-19.

Keywords: COVID-19, healthcare-associated infection, outbreak