

Investigation And Response to A Nosocomial COVID-19 Outbreak, Northern Region, Taiwan, February 2020

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Abstract

Nosocomial transmission has been recognized as an important amplifier in epidemic of coronavirus disease-2019 (COVID-19). Infection of healthcare workers (HCWs) and patients will further overwhelm the healthcare system. On February 27, 2020, a patient at a tertiary hospital without foreign travel history was diagnosed as COVID-19 infection 12 days after admission. The Taiwan Centers for Disease Control, local health bureau and the hospital immediately conducted epidemiological investigation, contact tracing, and control measures in collaboration. From the close contacts of the index case, four COVID-19 cases were identified on February 28, of whom three were nurses working in the same ward as the index case (the index ward). Since more than one COVID-19 confirmed case was detected in the same unit, multiple transmission modes and infection chains were possible. Following the guidance of "Recommendations on contingency operations for hospitals in response to COVID-19 cases identified in inpatients", we stepwise expanded the management and COVID-19 screening of person at-risk, closure of ward, environmental cleaning and disinfection, and enhanced symptoms surveillance of the hospital. By the end of monitoring period on March 27, we identified 153 HCWs and 303 non-HCWs as contacts. Among the 456 contacts, 409 were tested for COVID-19 and 8 were positive.

The infection source of index case was unknown, and the epidemiological and environmental investigations indicated that both droplet and fomite transmissions were involved in the nosocomial infection.

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Through prompt investigation and stepwise intervention, including strict infection control, thorough contact tracing and symptoms monitoring during mandatory 14-day quarantine for the contacts, as well as rapid COVID-19 testing for person at-risk and symptomatic contacts, we successfully blocked the infection chain and preventing from further spread in the hospital or to the community.

Now the global COVID-19 epidemic is still developing, this document provides our implemented experience as a reference for hospitals and health authorities encounter the similar outbreak in the future.

Keywords: SARS-CoV-2, COVID-19, nosocomial infection, infection control