

Progress and Refinement of Laboratory Biosafety Management in Taiwan

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Abstract

In early 2020, following the outbreak of COVID-19 in Wuhan, China, Taiwan Centers for Disease Control (Taiwan CDC) responded to the epidemic by establishing the Central Epidemic Command Center (CECC) for COVID-19 to initiate interdepartmental preparations and continue to build up epidemic prevention capacity. In terms of laboratory biosafety management, five major strategies had been implemented to ensure biosafety in laboratories engaged in novel coronavirus (SARS-CoV-2) related testing and research units, including "developing biosafety guidelines," "requiring institutional self-audit," "implementing external government inspection," "implementing pathogen transfer control" and "using information system management". Despite the accident of COVID-19 infection in a high-containment laboratory at the end of 2021, the CECC immediately activated the response mechanism, investigated the accident, and required the institution in question to complete the decontamination, correction and recovery plan. This showed that Taiwan has the ability to handle and respond quickly to major biosafety hazards. The cause of the accident was that the laboratory personnel did not follow the standard operating procedures related to personal protection equipment and laboratory operations, the laboratory supervisor had a misunderstanding of biosafety management, and the biosafety committee did not implement internal auditing and effective supervision. For this reason, Taiwan CDC had

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accelerated the implementation of a biosafety officer supervision system and the introduction of a biorisk management system in high-containment laboratories to improve the biosafety management level of laboratories in Taiwan.

Keywords: laboratory biosafety, high-containment laboratory, laboratory-acquired infections, biosafety officer, biorisk management system