

The Operational and Functional Components of Hospital Buildings — The Experience in the Taiwan Ji-Ji Earthquake

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Background: This study evaluated the non-structural elements of the medical capacity available following the Ji-Ji earthquake. This catastrophic earthquakes registering 7.3 on the Richter scale, struck mid-Taiwan on 21 September 1999, and took a death toll of 2,403, and injured 10,002 persons.

Methods: Four affected hospitals participated in the study. Affected hospitals were defined as those with at least 200 beds that were within the epicenter area. The damaged, non-structural elements of these evacuated hospitals were examined and scored.

Results: These hospitals suffered from only minor structural damage, but sustained extensive non-structural damage and were forced to evacuate patients from their buildings. Several major operational and functional components (OFC) that were critical to their operations were damaged: falling objects, flooding, loss of electricity, and damaged medical equipment.

Conclusion: A well-designed, disaster medical care system should include seismic considerations of these hospitals, especially those key non-structural elements evaluated. In the 1999 Taiwan Ji-Ji quake, these affected hospitals lost most of their medical capacity at a period when patients desperately needed medical attention. It is important to re-establish the advanced design code for the repaired hospitals, providing OFC seismic protection to reduce mortality in next rural temblor.

Keywords: catastrophic earthquake; functional components; non-structural elements; operational components

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A Template for Urban Management of Biological Exposures and Casualties

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A coordinated response in a multi-jurisdictional environment is required to protect Canadians from accidental or terrorist-initiated exposure to biological agents. A template for a flexible and rapid response with multiple entry points for potential casualties of an unknown nature will be presented, and its development process described. The template acknowledges that the event initially may not be recognized and identifies key signs, symptoms, and laboratory features that suggest exposure to a biological agent. It outlines the reporting and communications fan-out, and describes the lines of operational authority when multi-agency response and cooperation is required. The template details rapid response strategies for First Response agencies as well as measures to contain an exposure as quickly as possible. It provides lists of provincial, national, and international experts, equipment, antidotes/vaccines, and relevant literature. Resource requirements for handling exposures and casualties are identified, and a guide for a coordinated public health response including surveillance and contact tracing, is provided. It is hoped that this template will provide the stimulus and background to enable other agencies to establish their own local response force.

Keywords: biological hazards; bioterrorism; coordination; health response; preparedness; template

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