

IE 482 EARTHQUAKE PROJECT-HEALTHCARE

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Effective healthcare management during earthquakes is crucial for minimizing the impact of such disasters on human health. As part of our humanitarian logistics course, we developed a comprehensive plan to optimize healthcare management for both pre-disaster and post-disaster earthquake scenarios.

Pre-Disaster Management

We proposed the idea of building different types of warehouses that serve different purposes. For robustness and security, surgical equipment, which is less sensitive to environmental conditions, would be stored in underground warehouses, shielded from potential structural damages caused by earthquakes and also from the direct sun light. Storing equipment away from direct sunlight not only preserves its nutritional value and quality by preventing oxidation but also helps mitigate the detrimental effects of exposure to harmful environmental conditions such as humidity. Conversely, items with short shelf lives requiring cold storage—such as vaccines, blood, medicines, and hygiene kits—would be housed in above-ground facilities. These would be equipped with solar panels to ensure an uninterrupted power supply, particularly vital in the event of disrupted power lines. Also, there will be generators for each warehouse, considering the possibility of power outages after the disaster. Additionally, barcode tracking will be used to enable remote stock control and ensure reliable distribution of medical supplies and to avoid shortage. Information such as production date, expiration date, recipient and delivery location of each product can be accessed with this barcode. To further enhance operational responsiveness during crises, small crisis management desks will be established within each warehouse. Staffed by authorized personnel, these desks will coordinate the swift transportation of supplies to affected areas and manage incoming resources from outside the region.

Post-Disaster Management

There are 3 types of health centers planned to be established after the disaster: tent, prefabricated, mobile vehicles (trucks whose trailers have been converted into health cabins). Each health center type will feature designated triage areas to categorize patients based on the urgency of their medical needs into red, yellow, and green zones, enhancing the efficiency and effectiveness of medical interventions. In addition, two additional areas will be created for priority earthquake victims (pregnant women, elderly, newborns, disabled people) and animals injured in the earthquake. To facilitate the rapid transport of critically injured individuals, health centers will be strategically located near areas suitable for helicopter landings. Additionally, mobile pharmacies will operate to ensure continuous access to medications for individuals with chronic conditions, using the patients' TR ID numbers for secure transactions. These pharmacies will also distribute hygiene kits and are planned to make regular visits to surrounding districts and villages. For public hygiene, mobile showers and toilets will be positioned separately for men and women. Essential supplies, such as medicines, will be delivered from centralized warehouses either by drones or with military assistance to ensure timely and secure distribution. The use of barcode

systems, as previously mentioned, will be integral in tracking these deliveries to maintain the reliability and integrity of the supply chain, thereby bolstering the overall effectiveness of post-disaster healthcare management.