

were assigned to one of two groups. Each group included one Indonesian doctor who was a PhD candidate, while the remaining students were achieving a Masters in nursing. The official language used during the exercise was English. This study reports on the experience and evaluation of the students. **Results:** More than 90% of the students answered that this exercise was very instructive and interesting. They rated the simulation exercise very favorably and believed that the knowledge gained through the exercise would be beneficial in the near future.

**Conclusions:** This kind of practical education is valuable in disaster medicine and disaster nursing training for graduate students in Japan.

**Keywords:** education; graduate student; international disaster relief; Japan; training

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### (M10) Institutional Self-Response to a Disaster Drill: A Descriptive Study

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**Introduction:** Predisaster Drill Activities (PDAs) may act as predictors of preparedness, but have been studied inadequately. To address this gap, a descriptive study of PDAs was conducted at two large hospitals.

**Methods:** A longitudinal study was conducted at two large academic hospitals (A: a tertiary care university hospital, and B: an urban, municipal, Level-1 Trauma Center) in Brooklyn, New York. Both were equipped with disaster plans. Over a period of five weeks preceding a full-scale drill of a simulated pandemic influenza outbreak, eight sequential public health alerts were issued. Hospital responses to pre-identified components were recorded: (1) training; (2) equipment; (3) communications; (4) incident command centers; (5) supplies; (6) staffing; (7) infection control measures; and (8) miscellaneous. A descriptive statistical analysis was performed.

**Results:** The overall response rate to all the alerts for Hospital A was 67%, while that for Hospital B was 40% ( $p < 0.009$ ). The median delay in responding to alerts for Hospital A was six days (range = 0–19 days), and B was seven days (range = 0–21 days). Training was the most frequently cited component ( $n = 20$ ), however the median delays (days) were two (range = 0–13), and nine (range = 4–21) for hospitals A and B, respectively. Responses to communications, supplies and incident command center components were delayed or inadequate. Some additional unexpected responses such as supplemental meetings ( $n = 4$ ) and additional infection control measures ( $n = 3$ ) were elicited at both hospitals.

**Conclusions:** There were disparate responses to identical triggers at similar sites. Pre-disaster Drill Activities may

help identify emergency response preparedness gaps and augment available resources for optimal utilization.

**Keywords:** alert; disaster; drill; pre-disaster; preparedness

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### (M11) Managing a Simulated Disaster using Radio Frequency Identification Technology versus the Use of SMART Cards

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**Introduction:** Disaster management systems constantly are challenged to improve situational awareness during mass-casualty incidents. In this study, a system that utilizes commercially available, low-cost components, including Radio Frequency Identification (RFID) and mobile telephone technology was evaluated.

**Methods:** The feasibility and direct benefits of the system were evaluated in two separate simulated mass-casualty incidents; one in Finland involving a passenger ship accident resulting in multiple drowning/hypothermia patients, and an airplane crash scenario at Arlanda airport in Sweden. Both simulations involved multiple authorities and functioned as a test setting for comparing the situational awareness of disaster management using the RFID-based system. In this system, triage was performed using a mobile telephone, and information was sent automatically to the command center and hospital. The traditional method of using SMART cards also was used. The development of situational awareness could be measured directly by comparing the availability of up-to date information at different points in the care chain using both systems.

**Results:** The RFID system proved to be easy to use and the situational awareness of the disaster management improved significantly. Information about the number and status of the casualties was available at the coordinating units >60 minutes earlier than with the traditional method.

**Conclusions:** The proposed system was easy to use, quick, stable, and proved to work seamlessly even in harsh field conditions. It surpassed the traditional systems in all respects. It also dramatically improved the general view of mass-casualty incidents and enhanced medical emergency readiness in a multi-organizational medical setting.

**Keywords:** disaster management; mass-casualty incident; mobile technology; Radio Frequency Identification; simulation; situational awareness; triage

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