

1. Osaka City General Hospital, Osaka, Japan
2. Chibune General Hospital, Osaka, Japan
3. Izumiotsu Municipal Hospital, Izumi, Japan
4. Osaka Medical General Center, Osaka, Japan
5. Osaka Women's and Children's Hospital, Izumi, Japan
6. Rinku General Medical Center, Izumisano, Japan
7. National Disaster Medical Center, Tachikawa, Japan

**Introduction:** Children are a vulnerable population in disasters. However, there were few pediatricians, neonatologists, and obstetricians in the Japan Disaster Medical Assistance Team (DMAT), so disaster medical headquarters had limited knowledge to solve these problems. Pediatric and perinatal disaster liaison coordinators were trained to improve disaster medical management for children and pregnant women since the 2016 Kumamoto earthquake.

**Aim:** To analyze and report the activity of PPDML during these years in Osaka, Japan.

**Methods:** The records of PPDML in major disasters and disaster drills from 2017 to 2018 were reviewed.

**Results:** The DMAT had disaster drills twice a year in Osaka, and PPDML participated in the drill for the first time in July 2017. In the drill, PPDML coordinated the pediatric and perinatal issues with DMAT and Japan Ground Self-Defense Force (JGSDF) in disaster headquarters. In June 2018, 4 months after the drill, PPDML participated for the second time in February 2018 when the North Osaka Earthquake occurred. PPDML coordinated transport of 22 children and babies with congenital heart disease from the damaged National Cerebral and Cardiovascular Center Hospital. The operation was finished within 5 hours after requested transportation.

**Discussion:** To protect children and pregnant women, cooperation between the disaster medical network and the pediatric and perinatal network is absolutely important for any phase in disaster. Because PPDML had attended in disaster drills before, the experience could make PPDML achieve good performance in a real disaster in North Osaka Earthquake. It can be concluded that cooperation between disaster medical network and PPDML is very useful to manage the disaster issues for children and pregnant women, and the most important thing is to cooperate not only in disaster but also in ordinary days.

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### Disaster Preparedness and Management in Pakistan: A Systematic Review

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**Introduction:** Since its inception about 66 years ago, Pakistan has experienced a variety of both natural and man-made disasters like earthquakes in 2005 and 2015 and widespread flooding in 2010. Pakistan has also experienced a range of politically motivated violence, bombings in urban areas, as well as mass shootings. Such events generate a large number of casualties. To minimize the loss of life, well-coordinated prehospital and in-hospital response to disasters is required.

**Aim:** To identify all the existing peer-reviewed medical literature on prehospital and in-hospital disaster preparedness and management in Pakistan.

**Methods:** The search was conducted using PubMed and Hollis plus search engines in accordance with the PRISMA guidelines. The articles selected included articles on both natural and man-made disasters, and their subsequent prehospital and in hospital management. The following search terms and keywords were used while searching PubMed: mass casualty incident preparedness and management Karachi, mass casualty incident preparedness, disaster preparedness Karachi, and disaster management Karachi. To search Hollis plus, we used the terms: mass casualty incident preparedness and management Pakistan, mass casualty incident Pakistan, mass casualty incident preparedness and management Karachi, and disaster preparedness Karachi. We selected only peer-reviewed articles for a literature search and review.

**Results:** The reviewed articles show a lack of data regarding disaster management in Pakistan. Almost all the articles unanimously state the scarcity of planned prehospital and in-hospital management related to both man-made as well as natural disasters. There is a need for planned and coordinated efforts for disaster management in Pakistan.

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### Disaster Preparedness Technician = Striking Cost Savings

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**Introduction:** The workplace holds a rapidly deployable, self-sufficient field hospital including a medicine cache valued at \$80,000. The cache is rotated through the affiliated hospital pharmacy when they have less than 12 months to their expiry. Rotations are done regularly due to the short expiry dates of stock coming from suppliers. A senior pharmacy technician is employed two days per week at a cost of \$13,024.80 per annum to manage this cache.

**Aim:** To demonstrate the associated cost savings of employing a pharmacy technician to manage a medication cache.

**Methods:** Every month, the technician extracts items with less than a year expiry from the stock control system and compares these dates with that of the stock held in the pharmacy. All items with a better expiry date are rotated as long as there is sufficient turnover to ensure use before its expiry. Automatic recording occurs of items rotated, items discarded, and their costs are used as key performance indicators (KPI).

**Results:** Over a 12 month period, \$52,803 worth of stock was rotated. On average, 48 lines and 7,619 individual items were rotated monthly with a value of \$4,061.83 (range \$0–\$8,820 per month). During this period, there were 2 months where no rotations occurred due to staff changeover and annual leave. 10 lines of medicines at a value of \$4,041 were discarded over this time period. The two main reasons for discarding were that

the medicine was not a pharmacy item or was not used in a large enough quantity to allow rotation.

**Discussion:** The equivalent of four times the technician's wage was saved over 12 months. This illustrates striking cost savings gained by efficient, timely rotations and the cost benefits of employing a technician.

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### Discovering Best Practice Establishing Evacuation Centers for Vulnerable Populations: Findings from Australia and Japan

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**Introduction:** Potentially vulnerable population groups in disasters include the elderly and frail, people who are isolated, and those with chronic diseases, including mental health conditions or mobility issues. The disasters such as the Queensland flood and Great East Japan Disaster in 2011, affected regions of Australia and Japan. This study is followed by two pilot studies in both countries after the disasters. While both countries have different evacuation center procedures for evacuees, the issues regarding the role and responsibility across governments involving planning, setup, and management of evacuation centers demonstrate similarities and differences.

**Aim:** This paper will report the preliminary findings of a pilot study undertaken with local government officials and humanitarian agencies in Australia and Japan concerning their involvement in planning for, setting up, and managing evacuation centers for vulnerable populations in recent natural disasters. The objective is to illuminate the similarities and differences that officials and agencies faced, and to highlight the resolutions and lessons learned in the preparation of evacuation centers through this event.

**Methods:** This is the final stage of the study. After completing an analysis of both phases, a comparative framework to highlight similarities and differences was developed.

**Results:** Each government's role in relation to the establishment of evacuation centers is legally defined in both countries. However, the degree of involvement and communication with non-governmental organizations from the planning cycle to the recovery cycle demonstrates different expectations across governments.

**Discussion:** While the role of governments is clearly established in both countries based on the legal frameworks, the planning, set-up, and management of evacuation center differs.

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### Does Medical Presence Decrease the Perceived Risk of Substance-Related Harm at Music Festivals?

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**Introduction:** The use of recreational substances is a contributor to the risk of morbidity and mortality at music festivals. One of the aims of onsite medical services is to mitigate substance-related harms. It is known that attendees' perceptions of risk can shape their planned substance use; however, it is unclear how attendees perceive the presence of onsite medical services in evaluating the risk associated with substance use at music festivals.

**Methods:** A questionnaire was administered to a random sample of attendees entering a multi-day electronic dance music festival.

**Results:** There were 630 attendees approached and 587 attendees completed the 19 item questionnaire. Many confirmed their intent to use alcohol (48%, n=280), cannabis (78%, n=453), and recreational substances other than alcohol and cannabis (93%, n=541) while attending the festival. The majority (60%, n=343) stated they would still have attended the event if there were no onsite medical services available. Some attendees agreed that the absence of medical services would have reduced their intended use of alcohol (30%, n=174) and recreational substances other than alcohol and cannabis (46%, n=266).

**Discussion:** In the context of a music festival, plans for recreational substance use appear to be substantially altered by attendees' knowledge about the presence or absence of onsite medical services. This contradicts our initial hypothesis that medical services are independent of planned substance use and serve solely to reduce any associated harms. Additional exploration and characterization of this phenomenon at various events would further clarify the understanding of perceived risks surrounding substance use and the presence of onsite medical services.

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### The Effect of Emergency Department Expansion on Emergency Department Patient Flow

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**Introduction:** Overcrowding in the emergency department (ED) has been a global problem for a long time, but it is still not resolved.

**Aim:** To determine if an ED expansion would be effective in resolving overcrowding.

**Methods:** This was a retrospective study comparing two 10-month periods before (September 2015 to June 2016) and after (September 2017 to June 2018) the ED expansion in an urban tertiary hospital. The existing ED consisted of 45 beds in the adult area and eight beds in the pediatric area. After the construction, the number of beds was not increased, but a fast track