

IVCi, IVC-CI, and group N were not statistically significant ($P>0.05$). Area under curve (AUC) of IVC-CI to assess volume responsiveness in geriatric hip fracture patients was 0.80 ± 0.08 (0.65–0.95, $P=0.001$), with a 20.69% cut off value, 77.78% sensitivity, and 76.19% specificity. Through the Pearson correlation analysis, IVC-CI and ΔSV were positively correlated with the coefficient $r=0.367$ ($P<0.05$).

Discussion: As a rapid and noninvasive monitoring method, ultrasonic measurement of the respiratory variability of inferior vena cava in assessing the volume responsiveness of geriatric hip fracture patients can provide guidance for perioperative fluid management.

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Disaster and Mass Casualty Incident Responses by Doctor Car

Dr. Masamune Kuno¹, Kensuke Suzuki², Dr. Kyoko Unemoto¹, Dr. Takashi Tagami¹, Dr. Fumihiko Nakayama¹, Dr. Junya Kaneko¹, Dr. Ken Saito¹, Dr. Shin Sato¹, Dr. Chie Tanaka¹, Dr. Reo Fukuda¹, Dr. Saori Kudo¹, Dr. Akiko Kitabashi¹

1. Nippon Medical School Tama-nagayama Hospital, Tama, Japan
2. Nippon Sport Science University, Japan

Introduction: Ambulances with physicians, known as Doctor Car, and Tokyo DMAT are the two prehospital care systems responsible for medical team dispatch in the Tokyo area. While there are 25 designated hospitals for DMAT, Doctor Car is only available at four hospitals. Our hospital incorporates both systems. While the prehospital care system must be utilized at the time of disaster, Doctor Car was dispatched 418 times in 2017, and the use of DMAT is less than ten times per year.

Aim: To review the past disaster responses of our hospital.

Methods: The study reviews three cases where our hospital responded to mass casualty incidents and disasters with either Doctor Car or DMAT. The first case was the treatment of crush syndrome caused by a collapsed parking slope. It took more than 24 hours for the rescue, in which the team treated patients during transport and at the hospital. The second case was our response to a mass stabbing incident committed at a facility for the disabled. In collaboration with the onsite rescue team, we conducted triage, hemostasis, transfusion, etc. The third case was caused by a fire in a building under construction. We provided treatments like triage and tracheal intubation on the spot.

Results: Because paramedics are allowed to conduct only a limited amount of treatments, dispatch of the medical team to the site is effective.

Discussion: For a medical team to be effective at the dispatched site, the team must be accustomed not only to the specific need of medical care during disasters but also prehospital medical care, which may include the abilities to ensure safety during transport and on-site and adapt to the prehospital environment. Doctor Car is a useful way to realize such abilities.

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Disaster Education and Drills in Turkey: Do We Prepare Ourselves for Unexpected Disasters?

Mr. Volkan Ülker^{1,2}, Ass. Prof. Dr. Özcan Erdoğan¹

1. Bezmilâem Foundation University, İstanbul, Turkey
2. Sakarya University Research and Education Hospital, Sakarya, Turkey

Introduction: Turkey is vulnerable to many natural hazards, including earthquakes, landslides, floods, and terrorist attacks. The 7.1 magnitude Marmara Earthquake in 1999 resulted in over 18,000 deaths and estimated losses of over \$28 billion. The country's largest city, İstanbul, is located on the North Anatolian Fault and thus highly prone to earthquakes. It is estimated more than half of the population in the country are potentially seismically vulnerable. This vulnerability makes us ready for disasters. Turkey has advanced disaster risk management through initiating reforms to better manage and reduce disaster risk and strengthening institutions.

Aim: To overcome institutional fragmentation, the government established the Disaster and Emergency Management Presidency (AFAD) in 2009.

Methods: Assess the 2015 government adopted Turkey National Disaster Response Plan to guide all disaster and emergency response.

Results: In the last six years, Turkey has become one of the world's largest refugee-hosting countries. As of 2018, approximately 3.5 million Syrians under temporary protection have largely been integrated into cities, towns, and villages that stressing the infrastructure and increasing potential risk exposure. This situation makes us recognize disaster protection preparedness. We have many public and civil institutions to prepare society for unexpected situations. The main institution is the Disaster and Emergency Management Presidency. AFAD has many projects for youth, school children and all age groups of society. The second organization is the Red Crescent organization of Turkey. The other organizations are mainly National Medical Rescue Teams (UMKE), some university disaster clubs, and civil institutions like Beşir NGOs.

Discussion: These institutions give main disaster confidence education, main CBRN education, main fire-fighting education, camping life educations, orienteering, mobile oven, and kitchen facilities and drills. We have to raise awareness of the community about preparedness to disasters. We have to share lessons with the whole population for reducing social and economic loss.

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Disaster Medical Management of Pediatric and Perinatal Disaster Medical Liaison (PPDML) for Children and Pregnant Women in Osaka, Japan

Mr. Hideki Arimoto¹, Mr. Shinsuke Furuya¹, Ms. Kimiko Yamashita², Mr. Kazuharu Tanaka³, Ms. Tomoko Maruyama⁴, Ms. Muneyuki Takeuchi⁵, Ms. Kazuko Wada⁵, Mr. Kazubide Ogita⁶, Ms. Miho Misaki⁷, Mr. Akibiro Fuke¹, Mr. Hiroshi Rinaka¹

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

Dr. Sana Shabbaz

Queen Hospital, Nottingham, United Kingdom

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

*Ms. Jasmine Dexter^{1,2}, Ms. Melanie Morrow^{1,2},
Ms. Kelly Fogarty^{1,2}, Ms. Abigail Trewin²*

1. National Critical Care and Trauma Response Centre, Woolner, Australia
2. Royal Darwin Hospital Pharmacy Department, Tiwi, Australia

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