## Hospital Emergency Medical Incident Command in Taiwan

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Taiwan experiences frequent potentially catastrophic events, such as typhoons and earthquakes, but the general emergency response system is not well-established. Except for ordinary fire disaster equipment, the healthcare law and hospital accreditation provide for hospitals to develop other emergency medical incident plans. Every hospital has developed a disaster plan, such as a mass-gathering response plan; however, detailed disaster plans are needed to respond to different types of events. The overall hospital emergency medical incident response system still must establish more standardized plans.

This study collected and analyzed the disaster plans and command systems of medical facilities at different levels in Taiwan. The results indicate that most hospitals have established an emergency command system and designated staff responsibilities, but structures varied between individual hospitals.

The Department of Health and the National Health Research Institutes (NHRI) in Taiwan intends to merge and construct the Taiwan Hospital Emergency Medical Incident Command System (T-HEICS), based on structures of the Hospital Emergency Incident Command System (HEICS) developed in the United States. A national standardized hospital emergency command system also is needed. It will allow hospitals on each level to develop guidelines and enable hospitals to collaborate during the different phases of a disaster.

Keywords: hospital emergency incident command system (HEICS); National Health Research Institutes (NHRI); preparedness; response; Taiwan; Taiwan Hospital Emergency Medical Incident Command System (T-HEICS)
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## Lessons Learned from Disaster Research: The Medical Evaluation of the Disaster in Volendam, The Netherlands

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**Introduction**: Following the Volendam café fire on New Year's Day 2001, a multidisciplinary evaluation of medical care, The Medical Evaluation of the Disaster in Volendam (MERV), was performed. The framework of this project and the methodological problems and lessons learned are described.
**Methods**: After the Volendam café fire, three hospitals expressed their interest in investigating different medical aspects of the event. These aspects were combined and reordered into one study protocol with a modular design. The modules included: (1) the medical care provision at the site of the incident, in the emergency departments, and in the intensive care units; (2) the efficacy of the secondary interhospital transports of patients; and (3) the question of whether optimal medical care was provided. The Ministry of Health funded the study, and a scientific, steering group prepared and guided the project. A research team was formed, and a final protocol was written. All data necessary to answer the questions were combined, and separate case report forms (CRFs) were developed for each step in the medical chain. The research team visited the hospitals and ambulance services that were involved. Additional information was obtained by interviews with key personnel. A database was developed, and data were entered twice and compared for accuracy. Data processing followed several steps. The large amount of data made it necessary to reorganize the data into categories. A distinction was made between a cross-sectional site analysis and a longitudinal patient analysis. The data were presented in a uniform and consistent style, using similar cut-off points.
**Results**: More than 1,200 items about each patient and more than 200,000 items in total were collected. The modular approach made it possible to obtain a complete overview of medical care given to the victims. However, several questions could not be answered because of missing data. Also, it became clear that the predefined questions often were too open-ended and not easy to answer. The questions that could be answered, relevant findings, and recommendations for future events were published in a report, which was presented to the Government. It took 29 months between the event and the publication of the report in June 2003.
**Conclusions**: Evaluation of medical treatment is a complex endeavor. The evaluation of the Volendam fire event has demonstrated that a project approach is effective, but also includes weak elements. The formulation of clear objectives further helps to limit and structure data collection and analysis.

Keywords: café; database; evaluation; fire; hospital; Medical Evaluation of the Disaster in Volendam (MERV); The Netherlands; Volendam
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## Road Safety Is Everybody's Business

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**Introduction**: Transportation safety is a serious concern all over the world, irrespective of a country's economic status, but the intensity of the problems is higher in developing countries than in the developed countries. A large number of people are injured, disabled, or killed each year due to road, rail, and air crashes. Crashes are severely detrimental to the economy of a country. In developing countries, like India, pedestrians, motorcyclists, cyclists, vehicle drivers and passengers, train passengers, ferryboat passengers, and air travel passengers are most vulnerable. In West Bengal, a small state in India, nearly 10 people die daily due to traffic crashes. This is an increasing trend in India, and is creating a need for urgent attention from private-public and individual initiatives.
**Reasons Behind the Problems**: The road infrastructure and condition of roads in India are very poor. Often, the sidewalk is extremely narrow and local vendors occupy some

portions of the sidewalks. Therefore, pedestrians walk on the road instead. Because of the recent growth in the numbers of vehicles, road traffic has increased. The people are less aware of the road safety issues and often violate the Motor Vehicle Act while driving on the road or walking on the sidewalk. The Indian Railway is the second largest railway in the world, and is the highest employment generating industry in the world. Several railway safety measures are violated by the passengers, staff, and others regularly. The level crossings in one area contribute the highest number of railway accidents. In addition, fire safety measures sometimes are ignored. The infrastructure facilities and the repair and maintenance of existing infrastructures are lacking. Air crashes are a serious concern in India and requires urgent attention from the authorities. Capsizing boats are another problem, which must be studied.

**Conclusion:** There is a need for the development of a comprehensive action plan to combat the road, rail, and air crashes. People worldwide must take this problem seriously and take appropriate action.

| Year | Number of registered vehicles | Road crashes | Persons killed | Persons injured |
|---|---|---|---|---|
| 1970 | 1,401 | 114.1 | 14.5 | 70.1 |
| 1975 | 2,472 | 116.8 | 16.9 | 77.0 |
| 1980 | 4,521 | 153.2 | 24.6 | 109.1 |
| 1985 | 9,170 | 207.0 | 39.2 | 163.4 |
| 1990 | 19,152 | 282.6 | 54.1 | 244.1 |
| 1995 | 30,287 | 348.9 | 70.6 | 323.2 |
| 2000 | 48,857 | 391.4 | 78.9 | 399.3 |
| 2001 | 54,991 | 394.8 | 80.0 | 382.7 |

**Table 1**—Road traffic crashes in India (in thousands; This does not include data from Bihar and 14 districts of UP, due to unavailability; Source: Road Safety Cell, Ministry of Road Transport and Highways; This is the registered figure, but a large number of crashes are not included because both the deaths and the accidents were not registered with the Police Authority; Road infrastructure currently is developing very rapidly in India. Several Highways are being developed, and a large number of new cars and other vehicle populations are coming into the market, which increases the road accident vulnerability; Train accidents, boats capsizing, and air crashes are not included.)

**Keywords:** accidents; air; evaluation; India; road; safety; traffic; trains; vehicles
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## Getting Beyond the Physician-Centered Response to Biological Warfare and Infectious Disease: Physicians Are Not the Only "First Responders"

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The majority of systems, training, and preparedness for biowarfare and epidemic in the United States today are focused on the idea that the physician will not only be the principal, but the first and almost sole responder, to any major medical crisis. This is simply not the case. Based on past experience (ranging from various outbreaks of emerging disease to anthrax), it was found that medical professionals, non-medical professionals, and volunteers provided a far greater proportion of response than physicians. Indeed, once past the earliest stage of detection and diagnosis, the role of the physician as "first responder" is reduced significantly. Consider the classic example of smallpox. After the first diagnosis, the entire medical system will shift drastically so that response is no longer dependent on the physician as a primary medical advisor. Instead, the focus will shift towards population treatment with physicians acting as managers and troubleshooters, no longer first responders or diagnosticians.

Health care has evolved and developed over thousands of years to create an aura around the concept of "physician centrism," in which doctors are considered the key arbiter of life and death and provider of medical aid. In today's world of complex disasters, physician-centered response to medical events is no longer practical, possible, or even desirable. Also, the technological advancement of hospitals and hospital-trained physicians make it less likely that all physicians will be ready and adaptable to provide treatment in an uncontrolled and basic disaster environment.

As a whole, modern societies have an increased understanding of medicine and access to medical references. Also, the advent and wide availability of medical technologies, such as automated external defibrillators (AEDs) and blood pressure cuffs to monitor glucose levels have increased the population's capacity to care for and monitor themselves. But more importantly, modern healthcare systems have diversified to where medical service is provided by a variety of professionals other than physicians.

This presentation will address some of these issues and present a different approach to preparedness, namely one that relies more heavily on the diverse array of assets expected to be available rather than focusing preparedness on the very skilled, but low availability, asset of the physician.

**Keywords:** disaster; emergency; first responder; hospital; physician; professional; society; technology
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## Survey of the Medical Needs and Living Conditions in the 2003 Iran Earthquake

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**Objectives:** To identify serious cases and to determine the sanitation conditions following the earthquake in Bam, Iran from the acute to the sub-acute phase.

**Methods:** The Japan Disaster Relief (JDR) medical team surveyed 15 refugee households (75 persons total). The medical team asked questions regarding the health, water, and sanitation conditions.

**Results:** The main problems were respiratory disease (6 cases) and trauma (4 cases), but not serious injuries. There was one case of psychological stress. Public health conditions were fairly well maintained, with bottled water avail-