

Objective: The disaster medical responses to three earthquakes were assessed using the Utstein Template. The three earthquakes that had almost the same level of energy were: (1) The Great Hanshin (Kobe) Earthquake in 1995; (2) the West Tottori Earthquake in 2000 in Japan; and (3) the Chi-Chi Earthquake in 1999 in Taiwan.

Methods: The Gothenburg version of the Utstein Template was applied to the three earthquakes, especially focusing on the initial medical responses during the first days after the quakes.

Results: The scores for medical indicators, public health indicators, impact on the health care system, preparedness, and deficiency in response capacity are as follows

Site	Medical Indicators Score	Public Health Indicators Score	Impact on Healthcare System Score
Kobe	75	34	17
Tottori	6	2	8
Chi-Chi	48	17	6

Site	Preparedness Score	Response Capacity Deficiency Score
Kobe	48	41
Tottori	57	4
Chi-Chi	12	9

The overall average scores were 43.0 in Kobe, 15.4 in Tottori and 18.4 in Chi-Chi.

Conclusions: The immediate medical response to the disaster was the poorest in the Great Hanshin Earthquake in Kobe. Disaster preparedness was poorer in Japan than in Taiwan, with no obvious progress made in disaster preparedness in Japan since the Great Hanshin Quake. The Utstein Template is one of the best tools to be used as a "common language" for comparison of medical responses during disasters. Precise data collection, however, requires much time and effort, and bias by its analyst cannot be avoided. More concrete criteria for each indicator could increase the reliability of this scoring system and help more researchers use this Template.

Keywords: comparison; Chi-Chi; Kobe; earthquakes; severity scores; Utstein Template; Tottori

Prehosp Disast Med 2002;17(s2):s2-3.

Chemical-Biological-Radiological-Nuclear (CBRN) Analytical Framework Based upon the "Guidelines for Emergency Response in the Utstein Style," Developed by the World Association of Disaster and Emergency Medicine

Lt. Colonel D.D. Schnelle,¹ Lt. Colonel Lynn Difato,² Lt. Commander Richard Guzman,³ Brian E. Jones,⁴ Michael Gately,⁴ Craig Cullen,⁵ Heidi E. Brown,⁶ Lara Feldhausen⁷

1. United States Army, Office of The Surgeon General
2. United States Air Force, Surgeon General's Office
3. United States Navy, Office of The Chief of Naval Operations
4. ScenPro
5. Veridian
6. Institute for Defense Analyses
7. Battelle Memorial Institute

There is increased national concern regarding the potential use of weapons of mass destruction (WMD) or terrorist attacks using chemical, biological, radiological and nuclear (CBRN) hazards. Such "human-caused" events present a special challenge in disaster management in their unpredictability and potential for large-scale damage.

This paper proposes a conceptual framework that allows a rigorous approach to medical preparedness and response to CBRN events. The CBRN analytical framework, derived by applying CBRN analytical tools to the WADEM "Utstein Template and Guidelines (Health Disaster Management: Guidelines for Evaluation and Research in the Utstein Style: Executive Summary)", Task Force on Quality Control of Disaster Management), establishes an analytical relationship between a stated CBRN threat and the range of potential impacts posed by this threat. It addresses the importance of using a formal method with standardized terminology in order to "attenuate or eliminate the damage from a disaster."

An effective medical response will mitigate the damage (loss of life) from a disaster; the challenge for the emergency planner is to know – ahead of time – which type of medical response will be required by the actual event. The CBRN analytical framework allows one to define the scope of the required medical capabilities that will allow a comprehensive and integrated medical response to a broad range of possible CBRN events.

Further, this shift from a "threat" to a "capability-based" perspective allows the development of medical planning factors that estimate the maximum credible events, the damage from these events, and the requirements for medical treatment of these events. The CBRN analytical framework, its definitions and estimates, may serve as an adequate template for medical CBRN planning and response.

Keywords: chemical biological radiological and nuclear, disaster, Utstein template, weapons of mass destruction

Prehosp Disast Med 2002;17(s2):s3

The Use of Qualitative and Quantitative Methodologies for the Evaluation of Emergency Medicine in Post-conflict Serbia

Brett D. Nelson,¹ Kerry L. Dierberg,¹ Mihajlo Mitrovi, MD,² Milo Vuksanovi, MD,² Ljiljana Mili, MD,² Michael J. VanRooyen, MD, MPH, FACEP¹

1. The Center for International Emergency, Disaster and Refugee Studies, Department of Emergency Medicine; Johns Hopkins University School of Medicine, Department of International Health; Johns Hopkins School of Public Health, Baltimore, Maryland USA
2. Emergency Center of the Clinical Center of Serbia, Belgrade University School of Medicine, Belgrade, Republic of Serbia

Objective: Due to the complexity of health system reform in the post-conflict/post-disaster setting, attempts to restructure health services are fraught with pitfalls that often are unanticipated because of inadequate preliminary assessments. A multi-modal assessment—involving quantitative and qualitative methodologies—may provide a more robust mechanism to identify key programmatic priorities and critical barriers for appropriate and sustainable

health system interventions. The purpose of this study was to describe a multi-modal assessment using emergency medicine in post-conflict Serbia as a model.

Methods: Integrated qualitative and quantitative methodologies—system characterization and observation, focus group discussions, free-response questionnaires, and Q-methodology—were used to identify needs, problems, and potential barriers to emergency medical development in Serbia. Participants included emergency medical providers and administrators from all emergency medical institutions in Belgrade.

Results: Demographic data indicate a loosely ordered network of part-time emergency departments supported by 24-hour pre-hospital services and an academic emergency center. Focus group discussions and free-response questionnaires revealed significant impediments to delivery of care: poor system organization; lack of equipment, supplies, and medications; inadequate training and education; insufficient financial investment; few opportunities for professional development; and lack of incentives for emergency personnel. Q-methodology of provider perceptions and opinions supports these concerns and provides further insights by dividing respondents into distinctive types.

Conclusions: Combining quantitative and qualitative methodologies, this multi-modal study identified the critical needs and barriers to the development of emergency medicine in Serbia. This combined methodology may serve as a model for future health system assessments in the post-conflict, post-disaster, or development setting.

Keywords: assessments; barriers; conflict; emergency personnel; evaluation; funding; health; incentives; methodologies; multi-modal; needs; Q-methodologies; professional development; qualitative; quantitative; Serbia
Prehosp Disast Med 2002;17(s2):s3-4.

“Seven Rights” Evaluation Method of Japan Disaster Medical Team Activity

Hisayoshi Kondo, MD;¹ Norimasa Seo, MD, PhD;² Masahiro Hashizume, MD;³ Yuichi Koido, MD, PhD;¹ Norifumi Ninomiya, MD, PhD;¹ Yasuhiro Yamamoto, MD, PhD¹

1. Department of Emergency and Critical Care Medicine, Nippon Medical School, Japan
2. Department of Anesthesiology and Critical Care Medicine, Jichi Medical School, Japan
3. Department of International Community Health, Graduate School of Medicine, University of Tokyo, Japan

Background: The Japan Disaster Relief Team (JDR) had a 20-year history and had dispatched the medical team more than 30 times. An early dispatch system was established to gather the members within 12 hours of notification. Currently, the main challenge of the JDR is to improve the quality of its activities. To improve the quality, it was important to establish a management cycle of “Plan-Do-See”, with particular emphasis on how to evaluate the quality, “See”. This evaluation method was used to test the activity of the JDR.

Methods: The related papers were summarized, and were discussed with experts.

Results: According to the standard OECD/DAC, Efficiency, Effectiveness, Impact, Relevance, and Sustainability were selected as evaluation criteria. Impact,

Relevance, and Sustainability were especially important to evaluate. However, it was difficult to evaluate these points for JDR activity because the duration of an activity was so brief. Instead, the criteria for Efficiency and Effectiveness were evaluated. To evaluate these qualities, three issues were discussed: (1) needs, (2) resources, and (3) management. From this discussion, the following seven “Rights” were selected as evaluation criteria. For the needs issue, the Right Time and Right Place were selected. For the resource issue, the Right Person, Right Materials and Right Technology were selected. For the management issue, the Right Information and the Right Coordination and Cooperation were selected.

Discussion: We propose using the seven “Rights” (Right Time, Right Place, Right Person, Right Materials, Right Technology, Right Information and Right Coordination and Cooperation) as evaluation criteria. These criteria had meaning for the evaluation of the process of an activity. This is an important first step in the establishment of an evaluation system of the JDR activity.

Keywords: Seven Rights; activities; criteria; evaluation; Japan Disaster Relief Team (JDR); quality
Prehosp Disast Med 2002;17(s2):s4.

Task Force Session: Communicable Disease Control in Disasters

Chair: Prof. Kim Mulholland

Director, Centre for International Child Health, Melbourne, Australia

Implementation of an Extended Age-Range Mass Measles Campaign in Afghanistan

Muireann B. Brennan; P. Salama; A. Ansari; N. Dadgar

Measles causes an estimated 35,000 deaths per year in Afghanistan, where infrastructure has been destroyed by 23 years of war. In 2001, a total of 8,762 measles cases were reported by 352 surveillance sites; 38% were among children ≥ 5 years of age. Guidelines recommend measles vaccination of children age six months to 12–15 years in emergencies. However, debate continues on the feasibility of implementing such campaigns on a nationwide scale during a complex emergency.

Following the events of September 11th, concerns about a potential measles outbreak against a background of poor access to healthcare, crowding, and the possible return of up to two million refugees prompted UNICEF, WHO, and NGO partners to target all Afghan children age six months to 12 years (estimated to be 9–11 million) for measles vaccination. Determining coverage is difficult owing to the absence of an accurate denominator. Preliminary results using a denominator based on the National Immunization Days for polio show an overall reported vaccination coverage of 75%, ranging from 59% in the west to 83% in the north and northeast. The number of reported measles cases fell from 8,762 in 2001 to 2,574 as of 30 November 2002, although routine measles vaccination coverage increased by only 3%. True vaccination cov-