

Disaster Research and Evaluation Frameworks – RETRACTED

Samuel J. Stratton, MD, MPH

In 2003, Volume 1 of the *Health Disaster Management: Guidelines for Evaluation and Research in the Utstein Style*¹ was published. Publication of this monograph was an effort by organizations representing international disaster professionals and communities to define disaster terms and research standards. The 2003 publication became known as the “Guidelines for Disaster Research and Evaluation.” It took seven years to complete and was based on collaboration using the Utstein² method for consensus. The primary goal for the 2003 Guidelines was to provide structure for research and evaluation of disasters to allow for comparison of data and information and to operationalize much of the information developed regarding disaster sciences.

In the past decade, disaster research and evaluation have continued to evolve. During this time, disaster science has become recognized as a legitimate field for scientific exploration and is accepted by academics and those involved in actual events. In evolution, disaster science has developed newer areas of focus including mass-gathering medicine, emergency public health, humanitarian response, and simulation evaluation. Additionally, traditional disaster science has become more sophisticated, with exploration of the fundamental aspects of disaster epidemiology, mitigation, response, and effects.

Most problematic for application of disaster research has been difficulty in agreement on the meaning and definition of terms used to describe concepts and study variables. Since 2003, there have been concerted efforts to develop consensus on definitions of disaster research terminology in guidelines for acute medical response in disaster events.³

In this issue of *Prehospital and Disaster Medicine (PDM)*, the overview paper for the latest effort to refine disaster research and evaluation is published.⁴ This newest work by Birnbaum, Daily, O’Rourke, and Loretto represents years of research and refinement of concepts and frameworks for disaster research. The authors recognize five frameworks for disaster research and evaluation: (1) Conceptual; (2) Longitudinal; (3) Transactional Societal; (4) Relief-Recovery; and (5) Risk Reduction. Relief-recovery and risk reduction have long been recognized categories for disaster research. For relief-recovery and risk reduction, the authors of the new paper provide updated concepts and refined definitions of terminology.

The Conceptual framework is a foundation for the other research and evaluation frameworks, and includes standardized definitions of the terms used to describe factors that lead to and affect the occurrence and severity of a disaster. This is perhaps the most controversial area explored by the frameworks because disaster experts have failed to agree on operational disaster-related terms and definitions. The ongoing debate over terminology has done much to limit the effectiveness of disaster research and evaluation. In a field of research where data is difficult to obtain and variables hard to predict or control, the lack of standardized terms further limits research and evaluation by making it difficult

or impossible to compare research findings and conclusions. Making the Conceptual framework an element of research and evaluation is important because it now allows for scientific study of disaster terms and definitions, rather than reliance on the individual conceptualizations of “experts.”

The longitudinal framework recognizes the time dynamic aspect of disaster events. Traditional time elements often occur simultaneously, but are described as (1) the Pre-event phase; (2) the Event; (3) the Structural Damage; (4) the Functional Damage (changes in function); (5) the Relief Response Phase; and (6) the Recovery Response Phase. Research and evaluation can be focused on a particular phase of a disaster event, yet outcome is related to all six phases. By developing an organized approach to the overall longitudinal aspect of disasters, researchers can more validly compare outcome conclusions by determining which of the phases of disaster varied from comparable disaster events or simulations.

A disaster is significant because of the impact of the event on a population, community infrastructure, societal functions, and local environment. To study and compare event consequences and outcomes for an affected society, it is important to consider all the components of that society associated with a disaster event. The authors of the Research and Evaluation Framework have described society and community in 13 interrelated systems or components. Examples include public health, economy, water and sanitation, and security. The functional categories are found in almost all societies and are referred to as Basic Societal Systems. As Birnbaum and co-authors state, “each of the Basic Societal Systems consists of multiple functions and sub-functions, and most are dependent upon one or more functions of other Systems to remain operational.”⁴ The recognition of the sections of society and community affected in a disaster event allows for research and evaluations to be repeated and compared between evaluations, between societies, and between disasters.⁴

The Research and Evaluation Frameworks overview paper published in this issue of *PDM* provides a summary of the work to develop research and evaluation standards for the broad area of disaster science. This paper, along with companion papers (chapters) exploring each framework in detail, will be made available on an open access basis to all disaster researchers, evaluators, and students through the World Association for Disaster and Emergency Medicine and *PDM* websites. Comments regarding the Frameworks should be submitted as Letters to the Editor using the *PDM* electronic manuscript submission service (<http://mc.manuscriptcentral.com/pdm>).

The authors of the Disaster Research and Evaluation Frameworks are to be congratulated for their important addition to disaster science. This work, along with previous work noted above, will improve the validity of disaster research and evaluation and in the end improve disaster medicine and health outcomes.

References

1. Task Force on Quality Control of Disaster Management; World Association for Disaster and Emergency Medicine; Nordic Society for Disaster Medicine. Health disaster management: guidelines for evaluation and research in the Utstein Style. *Prehosp Disaster Med.* 2002;17(Suppl 3):1-167.
2. Recommended guidelines for uniform reporting of data from out-of-hospital cardiac arrest: the 'Utstein style'. Prepared by a Task Force of Representatives from the European Resuscitation Council, American Heart Association, Heart and Stroke Foundation of Canada, Australian Resuscitation Council. *Resuscitation.* 1991;22(1): 1-26.
3. Debacker M, Hubloue I, Dhondt E, et al. Utstein-style template for uniform data reporting of acute medical response in disasters. *PLOS Currents Disasters.* 2012; Mar 23:doi 10.1371/4f73f84587d68.
4. Birnbaum ML, Daily EK, O'Rourke AP, Loretta A. Disaster research/evaluation frameworks, part 1: an overview. *Prehosp Disaster Med.* <http://dx.doi.org/10.1017/S1049023X14000211>.

doi:10.1017/S1049023X14000260

RETRACTED