

Frameworks for Disaster Research and Evaluation

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This issue of *Prehospital and Disaster Medicine* contains the second series of special reports on the Framework for disaster research and evaluation. This series of papers represents work done by Birnbaum, Daily, O'Rourke, and Loretto to define and illustrate guidelines for the study of disaster events. The Framework papers are published with the realization that there are other researchers and scholarly groups who take issue with some of the concepts presented. *Prehospital and Disaster Medicine* presents the papers without prejudice and with the intent to provide a platform for discussion and exploration of disaster research methodology.

Readers of the Journal are encouraged to review the Framework reports and submit comments that either supports the Framework concepts or that present competing knowledge of appropriate methods for disaster research and evaluation. Particularly encouraged is submission of papers that explore the logic and scientific basis used to develop the Frameworks series. In addition, a particularly important issue is the establishment of a common vocabulary with precise definitions of terms commonly used in disaster research.

The study of disasters is challenging due to the complex, unpredictable nature of disaster events. Traditional health and medical science methods that compare a controlled intervention within a controlled study population is not a method that is common or effectively applied to disaster research. The development of research methods for prehospital care, cardiac arrest resuscitation, and trauma serve as examples of fields that have formed Frameworks that allow for research, evaluation, and understanding outcomes for complex, unpredictable processes. As an example, in prehospital care, much of the early work in developing a foundation for research revolved around precisely defining time frames and sequences common to the field. With defining response, treatment, and transport times, as well as the organizational structure of a prehospital delivery system, one is able to conduct research that allows for comparison among similar prehospital systems of interventions and system designs. The Utstein method for reporting cardiac arrest research data provides a mechanism in which the uncontrolled event of cardiac arrest can be studied. The Utstein model for reporting data allows for evaluation of the impact of interventions on study populations in

comparison to other populations. Early in the study of trauma interventions, it became necessary to develop scoring systems that could be used to predict trauma victim outcome. This need for scoring the severity of trauma and correlating it to outcome led to the development of the Revised Trauma Score and Injury Severity Score systems which allow researchers and system evaluators to compare data and outcomes among multiple trauma care systems. None of the Frameworks for research and evaluation in prehospital care, cardiac arrest, or trauma were developed without controversy. Important, though, is that the research Frameworks allowed for advancing the science and literature of prehospital care, cardiac arrest management, and trauma care.

Unfortunately, disaster health and medical research has lagged other similar fields in developing a Framework for comparative study. Rather, disaster research has lingered with observational and descriptive methodology for decades. Current disaster research is in a stage in which hypotheses are being firmly generated, but where there is a lack of comparability of study results. Good quantitative and qualitative observation research is valuable and lays a foundation for more advanced research in a field, but comparison of outcomes qualifies a research field as being well developed. As with the other unpredictable, complex fields discussed above, only with a common Framework for study can comparisons of outcomes be attained in a manner that will advance the science of disaster health and medical research.

With the objective of opening discussion and scientific development for disaster health and medical research, the Framework reports of Birnbaum, Daily, O'Rourke, and Loretto are being presented in *Prehospital and Disaster Medicine*. All who have an interest in disaster research are invited to provide comment regarding the Frameworks, either in the form of letters to the Editor or by submission of special reports. As with any science-related issue, publication of concepts and logic for discussion and open comment in the literature will lead to support, refinement, or refute.

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