

# Disaster Medicine: Status, Roles, Responsibilities, and Needs

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*'Twas a dangerous cliff, they freely confessed,  
Though to walk near its crest was so pleasant,  
But, over its terrible edge there had slipped  
A duke and full many a peasant;  
So the people said something would have to be done,  
But their projects did not at all tally.  
Some said: "Put a fence round the edge of the cliff."  
Others said: "An ambulance down in the valley."*

Joseph Malines  
*Prevention and Cure*  
Virginia Medical Bulletin

*Prevention is the daughter of intelligence.*

Sir Walter Raleigh  
Letter to Sir Robert Cecil, 10 May 1593

During the process of preparing the *Health Disaster Management: Guidelines for Evaluation and Research in the Utstein Style* for publication as a Supplement to *Prehospital and Disaster Medicine*,<sup>1</sup> Dr. Sundnes gathered data from the Center for Research on Epidemiology and Disaster (CRED) International Database for disasters.<sup>2</sup> Analysis of these data revealed several important conclusions that will be developed extensively in a future publication. A summary of these findings includes:

1. The incidence of natural disasters has been increasing at an almost exponential rate during the last 50 years with the greatest increase occurring within the last decade.
2. The number of persons "affected" by disasters caused by natural events also has been increasing at an exponential rate, while the lethality from the events has been decreasing.
3. The incidence of disasters caused by technological events also has been increasing at an exponential rate with the incidence doubling during the last decade.
4. Although the number of persons affected by technological events and the disasters that result has decreased during the last decade, the lethality associated with these events has increased.
5. Although the economic cost data are available for less than one-third of the disasters during the last 50 years, extrapolation of these costs shows an exponential rise with an average economic cost, worldwide, of more than [US]\$550,000,000 per day!
6. During the last decade, more than 2.3 million persons

were killed by inter-human violence and such behaviors have resulted in more than 35 million persons being displaced. The number of persons killed by inter-human violence totals more than three times the number killed in all other disasters combined.

Further, it became apparent that the databases are not sufficiently comprehensive to substantiate the findings, and that the circumstances may be much worse than indicated by the data available.

These observations raise several concerns:

1. Few people are aware of the increasing frequency and the extent of disasters as it seems the media pick and choose to cover only those disasters that seem to be "newsworthy". Thus, those organizations concerned with providing assistance or attempting to understand the pathophysiology of disasters do not get the attention they need to raise the needed resources.
2. Although it seems that the lethality associated with disasters caused by natural events has been decreasing, great care must be exercised in the interpretation of these data, since without some measure of severity of the events and of the disasters, it is difficult to compare the events and their respective impact. If the severity is the same, then we may have made great progress in mitigating the lethality associated with disasters caused by natural events. However, without an indication of severity, the reverse may be true. A measure of severity is essential if events and their effects are to be compared.
3. The databases are inconsistent. It is not clear whether the inconsistencies have arisen from a lack of reporting due to absence of standard definitions for reporting. This especially seems to be the case for reporting the numbers of persons "affected". Better and universally accepted indicators for "affected" must be provided.
4. Man-made hazards have assumed increasing importance. Technological events are increasing in frequency and lethality in an uncontrolled manner. Reasons for this ongoing change currently are not clear: possibly these changes are related to development. But, preventive and mitigating measures must be evolved and promoted by the Disaster Medicine community.
5. Currently, inter-human conflict comprises the greatest threat to humankind. Not only are the numbers of persons killed orders of magnitude greater than for all other types of disasters combined, but the numbers of persons displaced within and outside of their native countries

are horrendous—and represent only the tip of the iceberg of the total numbers of persons affected for the short-, mid-, and long-term. The implications of such behaviors are overwhelming, and raises many of the same moral and ethical issues that were brought forward since the end of World War II, by the Physicians Against the Use of Nuclear Weapons. Now, it seems that the problems are even more profound and disturbing.

Some years ago, I wrote a short editorial, "Only an Ounce," in which I suggested that it was and is the responsibility of prehospital emergency medical services to develop and promote programs for injury and disease prevention.<sup>3</sup> The same must apply to Disaster Medicine. It seems that we *may* have been quite effective in mitigating the lethality associated with natural events and the disasters that follow. But, human-made events are getting away from us—and we must assume the role of advocate and oppose the proliferation of such costly behaviors.

Furthermore, we must aggressively seek a comprehensive database that can link with other broader databases. In addition, severity scores and a set of universally accepted definitions and indicators must be developed and tested. These are appropriate additional roles for the World Association for Disaster and Emergency Medicine (WADEM). Much already has been done with the development of the Guidelines noted above, the first part of which will be published as a Supplement to the next issue of PDM.

Lastly, we must pursue a cooperative interaction with the media. We must educate them so that they actually understand the essential elements of what is occurring and the significance of such events. Only then will we be afforded the resources needed to intervene in the progression of human-made disasters.

Our roles and responsibilities extend beyond those traditionally assigned and assumed. We cannot ignore this calling. "An ounce of prevention" can be more effective than any responses that we might be able to muster.

*What is past help is beyond prevention.*

Massinger  
*Unnatural Combat*, Act 2, Scene 1

*There are two reasons for drinking:*

*One is when you are thirsty, to cure it;*

*The other, when you are not thirsty, to prevent it....*

*Prevention is better than cure.*

TL Peacock  
*Melincourt*, Chapter 16

## References

1. Task Force on Quality Control of Disaster Management, and The World Association for Disaster and Emergency Medicine, and The Nordic Society for Disaster Medicine: Health Disaster Management: Guidelines for Evaluation and Research in the Utstein Style. *Prehosp Disast Med* 2002. In press.
2. The Office of Foreign Disaster Assistance (OFDA)/Center for Research on Epidemiology and Disaster (CRED) International Database Université Catholique de Lovain – Brussels – Belgium, accessed 09 November, 2002. Available at: <http://www.cred.be/emdat>.
3. Birnbaum ML: Only and ounce. *Prehosp Disast Med* 1994;9(3):145.