

Where Are We?

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Remember, then, that it [science] is the guide of action; that the truth which it arrives at is not that which we can ideally contemplate without error, but that which we may act upon without fear; and you cannot fail to see that scientific thought is not an accompaniment or condition of human progress, but human progress itself.

William Kingdon Clifford
Aims and Instruments of Scientific Thought [1872]

Scientific activity is the only one which is obviously and undoubtedly cumulative and progressive.

George Sarton
The History of Science and the History of Civilization [1930]

This is a good time to look into our past and compare it with our present. I suggest that before you continue to read this, you turn to the Abstracts for the 5th Asia-Pacific Conference on Disaster Medicine in the Supplement to this issue, those from the 11th World Congress in Osaka (Volume 14, Number 2), and the 4th Nordic Congress (last issue), and compare them with those from earlier Congresses on Disaster and Emergency Medicine. As you do so, the Progress that our science has made in the past decade will become obvious. Our Progress is an established fact: we have come a long way in a very short period of history. Our science and methodologies are becoming better and better. But, what is most apparent is that the use of new (for medicine at least) methodological approaches to the study of Disaster Medicine is becoming more widespread (more people are using them and reporting their results), and thus,

our findings are gaining increasing validity. One study after another supports the findings of previous studies. Our methodologies not only have gained external validity, but the repeated demonstration of the same phenomena increasingly convinces us of expected effects: effects sufficiently validated to cause us to change our behaviors in addressing the horrors associated with disasters.

Some of what we now have established as fact, is outlined in the discussion in the current Abstracts, by Richard Aghababian. In addition, we have established that in sudden-onset events and the disasters that follow:

- 1) Few, if any, survivors will be discovered after the first 48 hours following the precipitating event;
- 2) International search and rescue units most often arrive too late to be of assistance in recovering the living;
- 3) Immediate life-saving assistance is provided by lay rescuers from the affected area and not from outside assistance;
- 4) With few exceptions, hospitals are not well-prepared to receive large numbers of casualties within a short time frame;
- 5) Current assessment methods and tools for ongoing evaluation of actual needs and requirements of the affected population are poor;
- 6) Rarely has a Centre for Coordination and Control been established and provided with the authority to request appropriate assistance, and to regulate and coordinate the incoming assistance. Much of the relief provided is of very little use to the affected society;
- 7) Persons assigned to provide management activities and leadership following a catastrophic event have not been trained adequately for the tasks

with which they are charged;

- 8) The needs of the affected population change within days following the precipitating event, from care of physical injuries sustained from the event or its secondary manifestations to providing for medical and psychiatric needs;
- 9) Disaster management is a complex task that is highly specialized and requires education and training; and
- 10) I suggest you go on with this list as you read through the Abstracts included in this issue and those from the Osaka and Nordic Congresses (I would appreciate receiving your completed list.)

The list is more extensive than we ever would have imagined at the beginning of the last decade. THIS IS PROGRESS. We are hitting our stride and confirming the validity and reproducibility of our methods. We now know the ways to do it.

Standards of practice depend on the science that supports them (evidence-based medicine). Our science now has provided sufficient information to begin to establish standards and guidelines for the practice of Disaster Medicine, for the conduct of research, and for the performance of evaluations of interventions. Such standards are forthcoming and guidelines for the conduct of evaluations and research already have been outlined in previous reports in this Journal (Guidelines for Evaluation and Research in the Utstein Style: Executive Summary—*Prehospital and Disaster Medicine*, 1999, 14:2, 43-52) and the detailed document is in the final stages of refinement prior to publication. These Guidelines and Standards will go a long way to enhance future work and stimulate others to become involved in the conduct of quality research and evaluations. Guidelines and standards

must be dynamic and must incorporate the valid findings of future efforts.

But, much, much more work still is needed. We must evaluate the effects of every response, every effort to eliminate hazards or at least modify them, every effort directed toward enhancing preparedness for those hazards that may become events, and every effort directed at enhancing the absorbing capacity of any society at risk. We must identify the what, the why, and the how. Moreover, we must apply the findings reported and apply them into planning. We must demonstrate that what we learn and apply actually make a difference and discard those measures that do not benefit the society affected by the disaster.

We only can implement what we have learned by publishing it for all to access. This is the mission of this

Journal. Furthermore, the educational and training programs in Disaster Medicine and Management (Manni and Delooz *et al* in the Abstracts; and Cuny) must be based on evolving standards of practice. When data are insufficient to support concepts, the need for more data should be stressed. Those of us that teach have the responsibility to stimulate research in areas for which more data are required.

Education, training, and management must be based on facts, and some organization or combination of organizations must take the lead and assume the responsibility for assuring that what is taught and practiced is based on facts — facts confirmed by valid studies. Such an organization(s) must step forward, now!

People are the common denominator of progress. So...no improvement is possible with unimproved people, and advance is certain when people are liberated and educated. It would be wrong to dismiss the importance of roads, railroads, power plants, mills, and other familiar furniture of economic development...But we are coming to realize...that there is a certain sterility in economic monuments that stand alone in a sea of illiteracy. Conquest of literacy comes first.

John Kenneth Galbraith
Economic Development (1964) Ch 2