

The Feasibility of Prehospital Medical Response Teams for Foreign Disaster Assistance

Terry Abrams, BA, EMT-P

Introduction

Disasters are defined as events caused either by natural or technological occurrences, that overwhelm the resources that are immediately available to manage or mitigate the impact of the event.¹ Disasters, by their very nature, are newsmakers. With the improvement in telecommunications, the barriers of distance are reduced to the extent that the people of the world all are members of what Marshall MacLuhan called the "global village." It now is a common practice to watch the effects of a disaster on the other side of the world, from the safety and comfort of the living room, live on television. The capacity to empathize with the victims, and to feel almost a part of the incident, results in tremendous public attention and an urging of governments, not directly affected by the event, to get involved and "do something!"²

Should prehospital medical response teams be formed for deployment to selected foreign disasters? Since the Mexico earthquakes of 1985, this question has been asked more and more frequently. Governments at all levels are being asked about it with increasing passion, particularly when disasters occur close to "home." In this author's opinion, prehospital, medically-oriented, disaster response teams should not be formed if their primary purpose is an international response. There are many reasons for this position. They can be broken down into several considerations:

- a) *Political*—at the municipal, provincial, state, federal, and international levels;
- b) *Training*—initial requirements as well as ongoing maintenance training;
- c) *Economic*—costs of formation, training, personnel, equipment, etc.; and
- d) *Effectiveness*—ability to respond quickly and accomplish the mission.

Political Considerations

The Armenian Earthquake of December 1988, in many ways, was a political event as well as a disaster. There was great pressure from the media and the general public to respond to so devastating an occurrence, especially with its timing so close to Christmas. Further, there was a perceived opportunity for the Western countries to respond to the Soviet Union; particularly in light of Glastnost, the loosening up of the Soviet relationship with the West. Accompanying a need for a response by United States teams,³⁻⁵ there was a similar push in Canada—a response at the insistence of essentially ad hoc rescue teams, most notably in the provinces of Alberta and Saskatchewan.⁶⁻⁸

A seven-member team of medics and firefighters from Saskatoon, Saskatchewan, arrived at the scene of the disaster almost ten days following the

Staff Development and Technical Services Division, Calgary EMS Department, P.O. Box 2100, Station M, Calgary, Alberta Canada T2P2M5

first quake. At about the same time, a six-man team of firefighters and medics from Leduc, Alberta, also arrived at the site. Both of these teams used personal donations, loopholes, and opportunism to arrive in the Soviet Union. No formal provisions had been made for their implementation, duties, responsibilities, or egress from Soviet Armenia. A more formalized 41-member team comprised of medics, firefighters, a psychologist, and mine rescue personnel from Yellowknife, North West Territories, and Edmonton, Alberta, were held back at Mirabelle International Airport by the Ministry of External Affairs at a cost to Canadian taxpayers of CAN\$74,000 for the round trip.⁹

At the international level of politics, assistance is offered, only if requested formally by the beleaguered country. The territorial boundaries of a country must be maintained and respected, despite the occurrence of a disaster. Therefore, the request for aid travels through pre-established diplomatic channels once the affected country has determined that its own resources have been overwhelmed or destroyed. Unfortunately, this procedure takes time. The consequences of short-cutting the procedure can be extremely grievous depending on the political climate of the country that requires the assistance. In countries that are under threat (real and/or perceived), the onrush of well-meaning people and resources could be perceived as a prelude to invasion or espionage. Further, in totalitarian governments, the entrance of foreign nationals without the correct identification, passports, licenses, visas, etc., may result in prolonged incarceration; an even greater political nightmare for External Affairs than was the original disaster.¹⁰

We, experiencing a disaster in our own country [Canada], act similarly. During the Edmonton Tornado of 31 July 1987, the provincial government agency, Alberta Public Safety Services,

turned down the offer of materials and personnel extended by the United States government early on the evening of 31 July. Based on news reports from Edmonton that same evening, the U.S. government had mobilized and placed on stand-by, two National Guard airbases in Montana.¹¹ A similar situation occurred during the recent Bay Area earthquakes [Santa Clara—San Francisco, California, USA, 1989]. The U.S. government declined offers of assistance by both Japan and the Soviet Union, according media reports.

The position of the United States government with respect to the sending of international disaster aid, is outlined in an informational brochure developed by the Office of Foreign Disaster assistance. This brochure states, that upon reception of an aid request, there is an assessment of the value to the United States of the sending of aid.¹² If the sending of aid is to the "advantage" of the United States, an authorization is given. If the sending of aid is not to the "advantage" of the U.S. government, the issue is resolved and the answer is "No."

Training Considerations

The training to the problem has several facets. These facets include: standards and scopes of practice; skills required in the disaster situation; and provision of services.

Medical practice is quite rigidly controlled in most countries. That is to say that there are licensing requirements, standards of practice, scopes of practice, and reciprocity agreements. In the past, there has been a reluctance on the part of the affected country's government, to allow foreign physicians to administer aid to that country's population.¹³ Such was the case in the Mexico City earthquakes in September 1985 and Armenia 1988.¹⁴

Paramedics are an extension of the physician. Therefore, the same limitations may apply to paramedics as apply to physicians. In Canada, there

are no reciprocity agreements between provinces for the recognition of prehospital care providers from other provinces. The only loopholes are the "good samaritan laws" that may be incorporated into the civil laws of the affected country, or the acceptance of a binding agreement that foreign nationals will not be administered to by members of the team. The latter was an agreement that was stipulated and accepted by the members of the Canadian team that travelled to Mexico City, and, in fact, was a condition of sponsorship by the Canadian Ministry of External Affairs.

The need to limit the extent of medical practice in order to be acceptable to the affected foreign government, calls into question the advisability of sending medical assistance teams at all. In the past, given the limitations described above, the only reason to send a medical aid team, has been to supply a medical treatment component in support of Search and Rescue (SAR) teams, in the event that one of the members became sick or injured.¹⁵

The skills required at a disaster scene are dependent upon the causation of the disaster. In the disasters that are most likely to attract media attention and be of suitable duration to allow the formation, activation, and deployment of a response team, the most needed skills are those of SAR teams, which is developing into a specialty of its own. Technology is being geared toward the ability to quickly and reliably identify persons who are trapped and who are still alive. In the absence of and occasionally despite the presence of technology, the responsibility for the extrication of the patient lies in the hands of the rescuers. Some of the specialties that may be called upon include those trained in mine or tunnel rescue, mining or civil engineers, heavy equipment operators, architects, demolition experts, etc. In short, people who are trained to safely tunnel or disassemble a structure in order to get the patient.

The factor that works against this effort is time. Often, by the time the patient has been detected and the extrication operation activated and completed, the patient no longer is alive. Although media attention is focused on the rescue of survivors, they are the exception not the rule in these situations. There is a "Golden 24 Hours" time period of disaster rescue.¹⁰⁻¹⁶ If a patient is injured and trapped for more than 24 hours, the chances of long-term survival become less than 50-50 regardless if medical treatment is administered after that time. Death is due to shock, either as a primary event or as a precursor to other events such as renal failure. Unfortunately, the time required to get the team there and receive the patient often is much greater than 24 hours post-event. The best way to improve the survivability of patients in these situations is by improving the rapidity at which they are detected and rescued from entrapment. Therefore, this focuses the attention away from the medical component and onto the search and rescue component.

A review of the requests for assistance in both foreign and domestic disasters, shows that the requests typically are for detection equipment, dog teams, and heavy construction equipment such as cranes, bulldozers, cutting equipment, etc., and not for additional medical aid.¹⁵ Following the Armenian earthquake, the medical equipment requested included kidney dialysis units.^{10,16} This equipment is designed and used for the longer term rehabilitative care of the patients, not immediate prehospital care.

In order to provide a medical response component in a disaster, the responding agency must be prepared to provide the equipment and supplies necessary to carry on their aspect of the operation. In order to be useful at the site, the equipment and supplies necessary must be easily

transportable, durable, adaptable, and plentiful. In most cases, the equipment that is transported with the team is left with the country that is receiving the aid in the form of charitable donation. The charitable donation may not occur as much out of philanthropy as out of an inability to recover the equipment after the team has left for home.^{8,10,14}

In addition, the team must be totally self-sufficient in order not to become a burden to an already devastated society. Self-sufficiency includes food, water, accommodation, clothing, security, financing, communication, and, in some instances, transportation.²¹ All members of the team must have current passports, current vaccinations, and carry any personal medications, prior to being mobilized. The need to respond quickly when called already has been emphasized. Taking time to get passports and vaccinations after having been mobilized is paid for by the patients who can least afford it.

Economic Considerations

The cost of a response team is multidimensional. The actual cost of a medically dedicated response team is made up of: the wages (or the lost wages) of the team members and the cost to replace them at their place of employment for the duration of the operation; food and accommodation costs; transportation costs to and from the site; inventory costs in terms of personal items, disposable equipment, equipment that is intentionally donated, and the cost of items that are lost, broken, stolen, or cannot be recovered, training costs; the team administration costs; and any insurance that must be purchased to protect against personal liability. Significant expenditures can be anticipated depending on the type, extent, and magnitude of the disaster, the number of people that are sent to the site(s), the type and amount of equipment that sent with them, and the length of time that they are engaged

Effectiveness Considerations

The effectiveness of a response team can be measured or gauged several ways. If the objective is to preserve life, an emergency response team must share the outcome with all the other players who assisted the patient through the ordeal. Similarly, if the criteria is the number of survivors found, the outcomes are shared and difficult to quantify accurately. If either of these two criteria are used as the yardstick of effectiveness, a foreign emergency response team is not a very effective utilization of manpower and resources. In general, they arrive at the scene too late; they can be an administrative hassle for the government attempting to utilize their services;^{10,22} they are an acknowledgment that the system in place is incapable of adequately managing the situation; they typically are extremely critical of the government that allowed them to enter the country to assist²³; they are used for body recovery rather than the provision of medical aid to the survivors for which they were trained, equipped, and capable of providing.^{3,4,6,7,24,25,26,27} Rarely are any actual "survivor save rates" quoted in the articles published by team members in the industry literature.

However, if the effectiveness of the team is evaluated as a humanitarian gesture, emergency response teams are tremendously effective from a public/media relations point of view. They are an acknowledgment of the brotherhood of Man, and the need for countries to work together harmoniously in time of need. In the industry literature, this is the position by which the teams seem to evaluate their own performance.²⁸

This, then, begs the question, "Who are the emergency response teams performing this service for?" If the answer is "the victims," then this form of aid is of little effectiveness. If the answer is "ourselves," then the response teams are both effective and truthful. There is value to elevating a

public or corporate image by being present in a disaster situation in the role of rescuer. However, it is an expensive method for increasing public awareness. Further, it is frustrating to personnel being sent, to arrive at the site only to participate in the recovery of bodies, or to be put to work as a laborer.⁷ The cost of the disappointment and frustration cannot be calculated.

Recommendations

1. A response team must operate within a 24-hour radius of its home location⁸⁹ in order to be effective. This 24-hour period is defined as extending the beginning of the rescue effort of the effected community(ies) until the trapped patients are rescued.
2. Any team must be totally self-sufficient from the community that it is dispatched to assist. In this way, the team is not an additional burden on the resources of the affected area.
3. If equipment is being sent in support of the rescue effort, the provider must be prepared that the equipment will not be returned.
4. The reason for the sending of a response team should be evaluated carefully in light of the goals of the organization. Members of the team should be briefed fully on what to expect upon arrival.
5. People that are selected to respond should have as broad a base of experience and expertise as possible to increase their value and their ability to work in a variety of situations and roles. They also should possess valid passports, vaccinations and records, any personal medical items, and personal financial protection for themselves and dependents.
6. Overall, based on a review of the literature and through personal communications, the major benefit of the provision of disaster aid would appear to be for self-benefit, as

much as for victim-benefit. These feelings should be identified during the selection process for members of the team.

Despite the tremendous temptation to send assistance on the basis that "they probably want it but are just unable to ask for it," there no longer really is a tenable argument for the deployment of disaster response teams outside of aiding countries; certainly here in North America. The cost of creating, training, and maintaining a team for rapid activation and deployment regardless of the day of the week or time of day is an exorbitantly expensive method of elevating a public image. There appears to be growing evidence that when prehospital medical disaster response teams are not incorporated into the pre-disaster planning of the community that becomes devastated, they create more problems than they solve. Although a foreign response appeals to the most sincere of human intentions, the evidence does not seem to support the action.

References

1. Emergency Preparedness Canada: EPC 828 —Peacetime Disasters Toronto:Emergency Preparedness Canada, Plans and Operations Peace, 1989.
2. Drabeck T: *What's New in Social Science Research*. Presentation at Response '87, 16th Annual Conference of the National Association of Search and Rescue, Orlando, Florida, USA, May 1987.
3. Graves JR, Ayrs D. The ground was screaming: Impressions of the international rescue effort in Armenia. *JEMS* 1989;14:25-28.
4. Vines T: International rescue teams Respond to Armenia disaster. *Rescue* 1989;1:8-10.
5. Page JO. Lessons from Armenia. *Rescue* 1989;2:5-6 (editorial).
6. Schreimer G: Canadians search for survivors in devastated Armenia city. *Can Emerg Serv News* 1989;1:40-45.
7. Raftis P. Devastation in Armenia. *Can Emerg Serv News* 1989;1:46-47.
8. O'Flanagan M. Mission cancelled: Rescue team was ready. *Can Emerg Serv News* 1989;1:94-96.
9. Personal communication with Mr. Robert van Goethem, Branch Head of Disaster

- Social Services, Alberta Public Safety Services, 12 December 1988.
10. Personal communication with Mr. Henry Gold, Director, Canadian Physicians for Aid and Relief, 10 May 1989.
 11. Personal communication with Royal Canadian Mounted Police Detachment, Alberta, 31 July 1987.
 12. United States Office of Foreign Assistance: AID Policy Paper: International Disaster Response. Washington, DC: U.S. Department of State 1989.
 13. Personal communication with Mr. Ellery Gray, Ph.D., Commander, U.S. Public Health Service, Office of U.S. Foreign Disaster Assistance, Department of State, 1 May 1989.
 14. Personal communication with Mr. John Bauman, organizer of the Canadian disaster team response to 1985 Mexico City Earthquakes, 15 February 1989.
 15. United Nations Disaster Relief Foundation: Recommendations Approved at the Meeting of International Health Relief Assistance in Latin America: A Regional Policy. Geneva: United Nations 1987, September.
 16. Kringold F: *Search and Rescue in Collapsed Concrete Structures*. Presentation at Response '87, 16th Annual Conference of the National Association of Search and Rescue, Orlando, Florida, USA, May 1987.
 17. Sheng CY. Medical support in the Tangshan earthquake: A review of the management of mass casualties and certain injuries. *J Trauma* 1987;10:1130-1135
 18. Mahoney LE: Catastrophic disasters and the design of disaster medical care systems. *Ann Emerg Med* 1987, 9:1085-1091.
 19. Noji EK: Medical and health care aspects of the Armenian earthquake. Unpublished manuscript.
 20. Noji EK: Mortality and morbidity following the 1988 Earthquake in Soviet Armenia. *Ann Emerg Med* 1989;4:463 (abstract).
 21. McCoy LC, Doughman DA. What have you learned from El Salvador? In *Proceedings of Response '87: 16th Annual Conference of the National Association for Search and Rescue*, pp. 283-294.
 22. Sullivan W: Much of disaster response is called a waste. *The New York Times* 29 January 1989, p 3.
 23. Gilstron A: Medical coordination at disasters. *Lancet* 1985;846:1895.
 24. Montoya D: Responding to disaster: Canada and the Mexico City earthquakes. *Can Med Assoc J* 1987;136:68-70
 25. Mexican earthquake tragedy. *Can Emerg Serv News* 1986;1:12-15
 26. Soberón G, Frenk J, Sepúlveda: The health care reform in Mexico: Before and after the 1985 earthquakes. *Am J Pub Health* 1985;4:473-480.
 27. Fitzgerald G. Medical consequences of the earthquake of 1886 in Charlestown, South Carolina. *Southern Med J* 1985;4:458-462.
 28. Maloney J: Letter to the Director, Emergency Services and Welfare Canada, on behalf of the Disaster Committee, Canadian Association of Emergency Physicians, 9 January 1989.
 29. Bosner L: Are we ready for an Armenian style earthquake? *JEMS* 1989;14:6-7