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NEWSLETTER

THE ROLE OF EPIDEMIOLOGY IN DISASTER RELIEF

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Epidemiology, as classically defined, is the quantitative study of the distributions and determinants of health-related events in human populations. Disaster epidemiology, however, can be viewed in a broader perspective which links data collection and analysis to an acute decision-making process. The overall objective of disaster epidemiology is to scientifically measure and describe the health effects of disasters and contributing factors to these effects, with the goals of assessing the needs of disaster-affected populations, efficient matching of resources to needs, further prevention of adverse health effects, evaluation of relief effectiveness, and for disaster contingency planning (Table 1). In addition, the epidemiologist has an important role to play in providing informed advice about the probable health effects which may arise in the future, in establishing priorities for action and in emphasizing the need for accurate information as the basis for relief decisions.

There are a number of problems faced by epidemiologists involved in disaster situations. These include problems related to the political environment, and the rapidly changing social and demographic perspective. Data must be collected rapidly under highly adverse environmental conditions in the field. Despite these difficulties, information collected by epidemiologists is absolutely essential for determining appropriate relief supplies, equipment and personnel needed to respond effectively to such catastrophic events. Unfortunately, the need for specific supplies and equipment such as blood, plasma, antibiotics, casting material and kidney dialysis machines is rarely determined on a rational basis resulting in inappropriate delivery of such items.

An organized approach to data collection in disaster situations assists in improving decision-making and predicting a variety of options that disaster managers need to face. Therefore, standardized procedures for collecting data in disasters need to be developed that can then be linked to operational decisions and action.

These decisions vary depending on the different phases of a disaster. Similarly, a variety of epidemiologic methods have been demonstrated to be of value before, during and after disasters. Thus, at the pre-impact phase the decisions are concerned with delineating the at-risk populations, assessing the level of emergency preparedness and the flexibility of the existing surveillance systems, and training of

personnel. In the predisaster phase, epidemiologic methods can be used in community vulnerability analyses. Vulnerability analysis involves the collection and assessment of information on communities at risk from hazards, including data on the performance of structures and lifeline systems during past disasters (eg. utilities such as water, electricity and gas, health facilities, etc.). During impact, characteristics of the affected population and the need for emergency services have to be assessed quickly. Rapid assessment techniques have recently been developed by the World Health Organization with the assistance of several of its emergency preparedness and response collaborating centers. In the post-impact phase, continuous monitoring and surveillance of the health problems faced by the affected population, and information on long-term rehabilitation and health services reconstruction is required. After a disaster, epidemiologic methods can also be used to evaluate the effectiveness of health intervention programs.

A major weakness in present disaster management programs is the absence of a cohesive information collection plan. It is important that disaster relief organizations establish a framework whereby necessary information will become available at the appropriate time. Unfortunately, most relief agencies concerned with disaster - and there are estimates that these now number several hundred worldwide - regard relief as an entirely operational affair. Many of these organizations refuse to acknowledge that useful generalizations may be drawn from past experiences of the effects of disasters and the types of relief rendered which may be useful in future relief operations. As a result, few agencies have been prepared to accord a high priority to systematic observation and record-keeping and much valuable experience has been lost.

The lack of time in which to organize an epidemiologic investigation, the reluctance of relief workers to keep records, the movement of populations from and within disaster areas, and many other factors, work against accurate and complete observation. Disaster-affected countries or regions may also lack persons with the epidemiologic expertise as well as trained support staff, and data-handling and communications equipment to conduct rapid assessment surveys.

It must be emphasized again that the primary concern of epidemiology in disasters is public health action and emergency decision-making. Our objective should be to develop standardized procedures for collecting data that can then be linked to operational decisions. In summary, disaster epidemiology provides the tools for acute problem solving in public health emergencies and is instrumental in having a direct impact in relieving human suffering.

Table 1 :
The Role of Epidemiology in Disaster Situations

1. Rapid assessment of health needs.
2. Surveillance and action-oriented information systems.
3. Disease control strategies for well-defined problems.
4. Assessment of the use and distribution of health services.
5. Etiologic research on the causes of morbidity and mortality due to disasters.
6. Continuous monitoring and surveillance of the health problems faced by the affected population.

IMPROVING RELIEF SUPPLY MANAGEMENT : A PAN AMERICAN INITIATIVE

(Commentary : we thank Dr DE VILLE DE GOYET for authorising us to print the text published in the PAHO's January issue).

Last December, the United Nations General Assembly took a decisive step toward improving humanitarian assistance, adopting by consensus Resolution 46/182 which strengthens the role of the U.N. in coordinating international humanitarian assistance.

One area that will particularly require specialized support from the international community is managing relief supplies at their point of entry into a disaster-affected country. Stories abound of inappropriate supplies being dumped on countries that already have more to cope with than they can handle. In fact, every disaster expert on the lecture circuit has his or her own collection of anecdotes - from wool blankets sent to tropical areas, to left-foot-only shoes, to dangerous pharmaceuticals and baby food or obsolete medical equipment.

There are several ways to minimize these problems. On the recipient side, countries should be more selective in what they request, learning to diplomatically say "*no thanks*". On the donor side, countries should step up public awareness and education campaigns about what is, and is not useful. Under the aegis of PAHO/WHO, both sides periodically sit down and frankly discuss these issues *before* they become problems. But no amount of pre-disaster coordination will suppress the urge on the part of the public and politicians to respond impulsively - and as a result too often inefficiently - to suddenimpact disasters. Therefore, managing the incoming flow of donated relief supplies, a large part of which are unsolicited and of little use, will remain a challenge for many disaster managers in the years to come.

Disaster relief authorities, face two distinct problems when trying to manage emergency supplies as they enter a disaster-affected country. First, how do they distinguish between supplies that are useful and urgently needed and those that are simply clogging up the system ? The former require priority attention and distribution; the latter should *not* compete for attention and space. The second problem involves knowing what type of supplies have been received. Sketchy information, such as *"x" tons of medical supplies were received today* won't help relief officials to make sound decisions. They need more precisely-defined, technical information including therapeutic categories such as antibiotics, analgesics, bandages, or vaccines. With this type of information, agencies facing shortages of much-needed items may be able to identify sources in other institutions that have received a more generous consignment of the commodity.

To make these situations even more difficult, pharmacists and other skilled professionals - in short supply in normal times - are just too busy responding to other more pressing health needs to be available in times of disaster to make detailed inventories or manage donated medical supplies.

And so, the challenge of managing relief supplies at the point of entry provides a splendid opportunity for post-disaster cooperation among countries, in the spirit of U.N. Resolution 46/182.

THE SUMA PROJECT

Thanks to the financial support of the Government of the Netherlands, PAHO/WHO will soon introduce a new project for supply management, the SUMA Project. SUMA will create and staff subregional standby teams of health personnel who will be specially trained to sort, classify and manage donated relief supplies, using up-to-date computer technology.

Imagine that a disaster has just struck one of the countries participating in the SUMA Project. The team would travel to the disaster site to render the following services to the relief authorities :

. make an inventory of the incoming health-related supplies, including medicines, medical and surgical supplies, and other items such as tents, generators, water supply and sanitation equipment. Wherever applicable, information on therapeutic categories (for medicines) and intended uses would be included;

. sort the relief supplies and mark those for which an immediate and urgent use exists with specially-designed, self-adhesive color labels, to distinguish and separate them from the bulk of items that have no practical value at the moment. Surprisingly, the latter often constitutes more than 50 % of the donations;

. identify and clearly label items that require special handling, such as refrigeration, or that should be used quickly because of their short shelf life;

. enter data on site using portable computers, and prepare detailed reports for national relief authorities, for consignees taking delivery of the shipment; and for donors;

. provide authorities with daily detailed lists that include information on the origin of the shipment, the consignee, the type of product, therapeutic categories, etc..

Although the SUMA Teams will be on site and operational as soon as possible following the impact of the disaster, their role is not to provide long-term support to a stricken country. As they work, team members will also train their counterparts in the affected country so that responsibility for the operations becomes a national concern within a matter of days.

In addition to training prior to their missions, SUMA Teams will receive other support including : a sophisticated, user-friendly database designed especially for this Project / laptop computers, printers, xerox machines / self-sustained power sources / on-site communications by hand-held radios / satellite communications / support staff.

Disaster-prone countries will begin by designating a Project focal point and identifying volunteers to serve on the stand-by team. The national focal point and volunteers will assume the overall direction and supervision of team activities in case of disasters in their own country.

The importance of the SUMA Project and the Teams lies not only in the contribution they will make to managing post-disaster relief supplies.

SUMA will be the joint response of Latin American and Caribbean countries *themselves*, to face the type of problems that no developing country along is fully equipped to handle were it not for subregional solidarity and a sense of neighborhood.

CONGRESS ANNOUNCEMENTS

THE FOURTH INTERNATIONAL COURSE ON HEALTH AND DISASTERS PREPAREDNESS

July 27 to August 7, 1992

Address : Université Catholique de Louvain
30, Clos Chapelle-aux-Champs
Belgique
Fax (32-2) 764 33 28

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SECOND ASIAN PACIFIC CONFERENCE ON DISASTER MEDICINE

September 10 - 13, 1992

Address : c/o Department of Emergency
Nippon Medical School
1-1-5, Sendagi, Bunkyo-ku, Tokyo 113
JAPAN

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IMPORTANT - lst announce

8TH WORLD CONGRESS ON EMERGENCY AND DISASTER MEDICINE

June 20 - 23, 1993

Address : Stockholm Convention Bureau
WCEDM'93
PO Box 6911
S - 102 39 Stockholm
SWEDEN

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