Pan American Health Organization

PAHO/ACHR/23/4.1
Original: English

TWENTY THIRD MEETING OF THE
ADVISORY COMMITTEE ON HEALTH RESEARCH

Washington, D.C.
4-7 September 1984

RESEARCH PRIORITIES

EMERGENCY, PREPAREDNESS AND DISASTER RELIEF PROGRAM

EMERGENCY, PREPAREDNESS AND DISASTER RELIEF PROGRAM

A. Disaster Research in the Region

Health research on disasters has remained very limited in Latin America and the Caribbean where very few scientific articles or reports have been published. Extensive searches of literature either through available indexing services or regional libraries in Latin America turned up few references. In a comprehensive review of biomedical documents published in 1973 in Mexico, 2164 articles or documents were identified. A single 3-page article briefly reviewed the principles of mass treatment and triage in a hospital, even though Mexico experienced several flash floods and earthquakes in 1972 and 1973.

Several factors contribute to the present situation:

a. The need for reliable scientific knowledge is not generally perceived. Tradicional cliches on explosive outbreaks of communicable diseases, mass hunger, social unrest and mass casualties being unattended for days by lack of medical supplies and personnel, are still widely accepted by the public, including health professionals.

b. The emotional impact of disasters calls for immediate relief, not for research. Strong personal involvement and commitment during the emergency preclude the necessary scientific dispassion and impartiality. During the acute emergency, observers and scientists may not be readily tolerated, unless officially sponsored or endorsed by reputable organizations.

c. Proper planning of research projects on health situations following catastrophes is complicated by the unpredictable nature of the natural event. Time and place of investigations remain unknown until the last moment. Procedures for funding the collection of "perishable data" are time consuming and not adapted to emergencies. In PAHO, a standing agreement exists with HRR for prompt processing of disaster related requests for grants (review internally by PED staff f.i.).

d. Most investigators lack previous field experience. Stability and continuity in this line of research are difficult to achieve due to the relative scarcity of major disasters and the fluctuating funding sources. In the world, only two

research groups have succeeded to achieve continuity over the last 5 years in the study of the health impact of natural disasters in developing countries(*).

e. Lack of direct applicability and relevance of some scientific studies carried out on disasters. Greater concern for the short term usefulness of the investigations should be developed. Health scientists share responsibility for a lack of dialogue and mutual distrust between relief officials and researchers.

B. Priority Research Areas

The following research areas need, for instance, urgent attention:

Epidemiology analysis of risk factors

In the two last major earthquakes in Latin America 90,000 persons were killed. Besides the fact that most have lived and died in non-earthquake resistant low-cost housing, little is known on the risk factors. Some data would suggest that children under 5 and adults over 50 are at much higher risk. If this is confirmed, this factor has direct implications on the rescue-relief activities and the medical supplies that will be required. Type of housing, time and place of the quake are additional variables to be investigated. In Guatemala, mortality caused by the earthquake ranged from virtually nil to 21.5% in different villages, apparently with similar rate of material damages. Provided there are no gross errors in the recorded number of deaths, the lack of adequate explanation of those statistically significant differences underline the gap in our understanding of earthquakes. The same situation prevails in regard to cyclones, floods, and other sudden disasters.

Typed of pathology

Basic knowledge of the type of trauma and injuries caused by earthquakes is essential to determine the appropriate relief supplies, equipment and personnel needed in similar situations. Representative and objective data are presently lacking. For instance, a high rate of crush

(*) London Technical Group, London
Research Center on Disaster Epidemiology, Brussels, Belgium

syndrome is usually expected following earthquakes. From partial observations, it seem that almost no cases have been detected following the Managua and Guatemala disasters. Such a finding deserves careful confirmation.

Similarly, research is required to document the observation that cyclones and floods do not cause a high rate of injuries. The determination of anticipated rates of various types of injuries per 1000 persons in an affected area will greatly improve the preparedness of health services and relief organization and is an essential step towards a planned and rational respone.

Rescue activities

Some valuable scientific research on rescue of persons trapped under debris (techniques, survival type, composition of rescue teams) have been carried out in Europe during World War II. Similar research is required under the existing conditions of rural areas of developing countries.

Management of casualties

Our present concepts result from military medicine; their applicability to civilian natural disasters remains to be investigated. Research might be focused on how the various hospitals handle the influx of patients, the allocation of resources, the operation of temporary facilities, the record keeping and the arrival and integration of foreign medical personnel and supplies. The average period of time elapsed between field rescue, evacuation, medical diagnosis and treatment, is a decisive factor, study of which can deeply influence future relief operations.

Field hospital

Either fully staffed military hospitals or packaged disaster hospitals are routinely requested or sent to the affected country. Their appropriateness (timing, site of operation, nature of services, actual cost to the affected country) should be regarded as an important topic for research. Similarly, studies could be carried out to facilitate the standardization of field hospitals existing in the disaster-prone countries. Alternatives to the costly airlifting of fully staffed army hospitals should be explored.

Medical supplies

Operational research is needed to determine what medical supplies are:

- Actually needed (based on number and nature of injuries and standard acceptable treatments).

- Most commonly requested at local and national level.

- Provided by the national or international community.

The three categories are likely to differ significantly. Techniques for rapid inventory, sorting and distribution of medical relief supplies should be developed. The need for specific supplies such as blood, plasma, antibiotics, and casting material must be determined on a rational basis.

Disease control and sanitation

The question of the actual risk of increased disease transmission following natural disaster requires extensive, current and retrospective field study. The effectiveness of control measures and the techniques of epidemiological surveillance are areas of considerable practical interest. Expensive and sophistecated emergency measures are taken to distribute drinking water in affected rural areas. However, no systematic attempt has been made by scientists to estimate the vulnerability of water supply systems to contamination by specific infectious agents and determine the significance of such contamination. Results of chemical and bacteriological analysis of water samples performed before and after the earthquakes in Managua and Guatemala City are a valuable untapped source of research material. The role played by other factors (unburied bodies, rodents, insects, etc.) remains to be documented.

International relief

The effectiveness and/or problems associated with the influx of large quantities of relief supplies and relief personnel need to be studied thoroughly and the results disseminated. Research should be undertaken in the affected countries, as well as in the countries providing assistance. The mechanism and motivation of the often burdensome response of the general public of developed countries (especially the medical community) are not fully understood. Research must be done on the problem of unacceptable or useless supplies so that organizational alternatives can be identified. Multidisciplinary studies of the role of foreign medical volunteers following earthquakes in Latin America will hopefully settle the controversy of their usefulness and provide the public health authorities and medical associations with guidelines and criteria for a constructive approach. The investigation of the coordination among relief organizations and governmental agencies is likely to be more complicated. Authoritative studies and constructive suggestions of the scientific community are, however, essential to improve coordination, the key factor to efficient relief activities.

The peculiar nature and specific problems of disaster research require inter-country cooperation and especially among countries exposed to the same type of disasters. In addition to providing scientific guidelines and proposing priorities, the Organization should actively support valid priority research projects. This support should take the following forms:

- Technical review of the proposed projects in the light of the guidelines and policies determined at the experts' meeting.

- Technical endorsement of the project.

- Assistance in identifying and approaching potential funding agencies.

- Assistance in securing advanced approval of disaster-prone countries in order to permit an immediate implementation of the study should a disaster occur.

- Direct technical, material or administrative field support according to a preestablished plan of action and protocol of research. The direct participation of the Organization in carefully selected research projects will be, in many cases, an essential conditon of acceptability by the disaster-prone country and the funding agency, as well as a factor of success of the studies to be carried out during the actual emergency.