

EDITORIAL

The Road Ahead

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SPHERE; standards; supply; WHO

Abbreviations:

ALNAP = Active Learning Network
on Accountability and Performance
APCDM = Asia-Pacific Conference on
Disaster Medicine
CDC = Center for Disease Control and
Prevention [U.S.]
CIDA = Canada International Devel-
opment Agency
CRED = Centre for Research of the
Epidemiology of Disasters
GDIN = Global Disaster Information
Network
HINAP = Health Information System
for Advance Planning
ICRC = International Committee of
the Red Cross
IDNDR = International Decade for
Natural Disaster Reduction
IGO = Intergovernmental Organiza-
tions
IFRC = International Federation of
Red Cross and Red Crescent Soci-
eties

NGO = Non-Governmental Organiza-
tion
OCHA = Office for the Coordination
of Humanitarian Affairs
ODI = Overseas Development Institute
PAHO = Pan-American Health Orga-
nization
SUMA = Supply Management (PAHO)
UN = United Nations
WADEM = World Association for
Disaster and Emergency Medicine

Unless one understands his past as well
as fully lives and works in the present, it
seems irrelevant to think about the
future. So, I went through my past, and
came across a thesis written in 1972: it
was my first introduction to this field of
Disaster Medicine. By reviewing some
of what was written then, and connect-
ing it to what you have been discussing
during the past two days and with what
is being addressed around the world, I
hope that the Road Ahead becomes a
little clearer, presumably because it
already is a Road on which we are trav-
elling together. I have no intention of
telling you where I think the Road is,
but rather to challenge you to see if you
can figure it out for yourselves.

In 1972, Karl Western, a young med-
ical epidemiologist from the Center of
Disease Control and Prevention (CDC),
submitted his dissertation for the Acad-
emic Diploma in Tropical Public Health
to the London School of Hygiene and
Tropical Medicine. He must have been
very ambitious (or naive) as he proposed
to describe: "The Epidemiology of Nat-
ural and Man-Made Disasters — The
Present State of the Art". In his intro-
duction, he stated that:

*Despite the fact that disasters are
extremely common events, with
calamities requiring international
assistance occurring on average once
a week, they could only become more
frequent as population density
increases. Still these repeated oppor-
tunities to study disasters have not
resulted in a large body of organized
information on the effects of disas-
ters on communities and how dam-
age can be minimized or prevented
in the future.*

Interestingly, discussions that
occurred around that time led to: 1) the

establishment of the Centre for Research on the Epidemiology of Disasters (CRED) at the Catholic University of Louvain, Belgium. Its disaster database, now *inter alia*, supports the *World Disasters Report* published by the International Federation of the Red Cross and Red Crescent Societies (IFRC); 2) the establishment in the Americas of the oldest Programme on Emergency Health Preparedness, namely in the Pan-American Health Organization (PAHO); and 3) organizations such as the World Association for Disaster and Emergency Medicine (WADEM). In addition, we have had the International Decade for Natural Disaster Reduction (IDNDR) and events like this 5th Asia-Pacific Conference on Disaster Medicine.

Still, I wonder if the situation fundamentally has changed: the challenge remains "Organized Information". Currently, there are important efforts under way to apply new information technologies to the growing body of data and information, both to support their collection at field level using hand-held technology, as well as their organization. But, one problem might be that we now have more information, and hence, we have more difficulty organizing it in a way that it is useful. And, Western, in 1972, postulated that there were three reasons why this was so:

- 1) *Important and required information is not always collected, since disaster relief efforts almost entirely are operational;*
- 2) *Scientists have studied disasters in a limited fashion mostly along speciality lines; and*
- 3) *Each disaster is different, so people conclude it is impossible to make any meaningful inductive conclusions.*

One by one, how much progress have we made?

As to the first reason, not only would I say very often, if not always, that important information was not collected, but, most importantly and currently, there hardly is any systematic effort to collect this information. Let me give you three examples without touching on health data and the epidemiology of natural and man-made disasters

The first example involves the Active Learning Network on Accountability and Performance (ALNAP), managed by ODI. The ALNAP came about after a multi-agency evaluation of the Rwanda crisis. It collects case studies, discusses conceptual approaches, methodologies, etc. The ALNAP now is challenged by the Southeastern Europe/Kosovo crisis, particularly given the scarcity of information collected by the member agencies that could be organized in a meaningful way to look at accountability and performance.

The second example involves a parallel initiative to ALNAP called SPHERE, also begun following the Rwanda crisis. This IFRC/NGO-based coalition for minimum standards in relief was formed to develop and adopt a humanitarian charter and minimum standards for health, nutrition, water, etc., which operational agencies and the non-governmental organization (NGO) community could both promote and adhere to. Besides the philosophical differences regarding ethics, the possi-

ble abuse by funding agencies, and the perceived differences between guidelines and standards, difficulties also exist in applying the charter and standards when none of these data even is collected.

The WHO, itself, provides the third example. Following a technical consultation some two years ago, WHO established an Advisory Group for Research on Emergencies. While this group identified some of the research gaps, discussed an ethics framework for applied research in emergencies, and published an initial bibliography of research conducted in emergencies during the past 10 years, progress has been very slow. Frustration levels run very high as to our international, collective inability to move this agenda further, despite quasi-universal recognition of the problems. This is an urgent need, not only to better understand the epidemiology of natural disasters and complex emergencies, but also to understand the effectiveness and efficiency of our interventions.

Disaster Medicine essentially is applied public health, and it is the public health methods that we propose to apply to disaster reduction.

As a generic comment, I want to mention and sympathize with all those who have struggled to evaluate or to introduce evaluation concepts in disaster relief settings, or even simply to propose the use of evaluation methodology in this context. Partly, this is related to Western's second postulate of how scientists have studied disasters in a limited fashion along speciality lines. In a way, this became the tragedy of the IDNDR in which the different conceptual approaches to natural hazards, concepts of vulnerability, and risk management never were truly integrated or found a common roof. Also, in our own field of health, we still see this, i.e., in disease outbreaks; one can analyze these as strictly an infectious disease problem, in the context of its clinical and epidemiological aspects, or as an emergency or disaster, adding health services views, environmental health sciences, and links to vulnerability and social (possibly political) processes.

A purpose for the 5th Asia-Pacific Conference on Disaster Medicine is to bring disaster medicine and disaster management together, illustrating that this still is a problem, as well as how much Road still is Ahead of us. For us in WHO, Disaster Medicine essentially is applied public health, and it is the public health methods that we propose to apply to disaster reduction.

Professionalism is the operating word. The fact that each disaster is different, and, oftentimes is that community's/health professionals and decision makers' first, undermines the building of a critical mass of expertise. It is this expertise that would allow us to collect and analyze information on the systematic and multidisciplinary basis necessary to steer collective interventions on a more professional basis. There is a body of knowledge to deal with the public health consequences of complex emergencies that is similar to the body of knowledge already established for natural disasters. Still, particular-

ly in the international sphere, there are many gaps to be closed and challenges to be met in order to consolidate more professional approaches in this field.

In Hanover, about two months ago, I presented an analysis of Allocation of National and International Resources in Humanitarian Assistance. While presenting data, or even more in this context, highlighting the absence of data, I stressed the importance of institutional resources, including the capacity for information management and its links to epidemiology and economics for decision-making. The difference, in terms of morbidity and mortality, is made at the local level, and it is within local government, civil society, and academic institutions where professionalism and institutional capacity need most to be developed.

Sadly, the countries that are either more disaster-prone or vulnerable also are those in which such capacity is weakest. It is in this realm that I see an urgent international responsibility. The great benefit of the PAHO Disaster Reduction Programme is exactly here: the lessons learned from the Mexico earthquake have been disseminated throughout the region, and are being applied to disaster mitigation in the health sector in Peru and Ecuador, and to hospital infrastructure development in the Caribbean and recently in Nepal. The lessons learned from the use of SUMA (Supply Management) not only provide benefits in transparency and accountability, but also have been made available to the UN operation in East Timor, and to OCHA (Office for the Coordination of Humanitarian Affairs) in Mozambique after the floods. Also, there now is a collective analysis of the progress made (and the ones not realized) to see what will and should be the next stage for SUMA.

Yes, every disaster is unique, but that is like saying every patient is unique. This does not stop us from continually improving diagnosis and treatment, by making meaningful inductive conclusion based on careful observation of individual patients.

As the difference is made at the local level, it is highly laudable that CIDA made resources available to this conference, and particularly to fund participation from countries that otherwise could not afford to be part of this international learning process. Yes, every disaster is unique, but that is like saying every patient is unique. This does not stop us from continually improving diagnosis and treatment, by making meaningful inductive conclusions based on careful observation of individual patients.

In 1972, Karl Western wrote, "I do not find the separation of disasters into natural and man-made events very productive." It has taken us almost 30 years, but we are getting there, even with the additional complexity of "Complex Emergencies". We saw natural disasters such as those in Mozambique or Turkey, become very complex, heavily compounded by political considerations and limited sovereignty in the face of an onslaught of international goodwill and the laws of unintended consequences.

Even more difficult was the drought and its nutritional/health consequences in the Horn of Africa, a "natural" disaster linked to conflict and massive displacement of populations. With the drought now covering large parts of Central Asia, extending into Mongolia and Western China, places of the world in which the Great Game once was played, the artificial distinction in (UN) OCHA between the Natural Emergencies and Complex Emergencies Response Branch seems obsolete. From a health perspective, the distinction more reflects operational modalities and capacity for resolution, than the specific epidemiology of these disasters.

How little this is realized at the international level became clear recently with the IRC study on Eastern-Democratic Republic of Congo (DRC), *inter alia* coming to the conclusion that only a very small percentage of the huge mortality related to the conflict was due to violence, i.e., a man with a gun. Decision-makers in Washington and in the European capitols, expressed their surprise that people in complex emergencies die from simple things such as childbirth, malaria, and diarrhea. They seemed even more surprised when we told them that these deaths are avoidable; with simple interventions and for relatively little money, health professionals (and their donors) can make a difference. This and the Early Warning project in Southern Sudan are some of the best illustrations of how, with the organized collection of information presented in a way that is understandable to decision-makers, we can make a difference for health.

This also was the thinking in WHO some nine months ago when we called a consultation on "Planning Ahead." We wanted to see if we could apply some of the approaches we have long used in natural disaster reduction to affect the health impact of complex emergencies, to work with our technical cooperation at field level, and to reflect on whether we could have an impact on some of the huge costs in lives that have been a hallmark of these emergencies during the past 10 years. We still have a long way to go, but at least we are moving in the right direction, even coming to the point at which people are starting to think about more proactive approaches and directly intervening in conflict or displacement situations. We already do so in some of the worst conflict spots in the world, but we also are trying to learn and to see how we could build on that expertise to control key determinants of morbidity and mortality in those societies and populations, i.e., how to deal with HIV/AIDS, tuberculosis, malaria, and childhood illness, and how to make pregnancy safer, even in the worst conflict situations.

While every disaster is unique, there are some lessons to be learned that we can apply and should disseminate. Karl Western wrote: "Disasters as different as outbreaks of plague among Vietnamese refugees and a nuclear explosion over Hiroshima have common features that can be analysed and compared."

Western analysed the disruptive effects and problems created by disasters. His critique remarkably included:

- 1) Most countries and agencies seem incapable of preparing quality reports on disasters;
- 2) Disasters are perceived as “internal” problems of the affected and government officials are embarrassed, if not uninformed — “it is not their problem”; and
- 3) Data and analysis are often derivative and reports seem exercises in public relations, with the reports limited to one’s own contribution and each agency emphasizes its own importance.

Western’s analysis of the disruptive effects and problems created by disasters is remarkably factual, concrete, and jargon-free. In probably the first “systems” approach to health effects, he dissected the disruptive effects and problems into four elements: 1) administrative; 2) environmental, 3) medical, and 4) long-term. He wrote, “I regard the solution of the administrative problems following disasters as the key to understanding the epidemiology of disasters, and for organizing an effective relief operation.”

He then listed five disruptive effects: 1) disorganization of key personnel; 2) disruption of communications; 3) disruption of transportation; 4) inadequate disaster intelligence; and 5) inadequate evaluation of relief efforts. These effects result in four major administrative problems: 1) loss of leadership; 2) uncoordinated relief activity; 3) breakdown of channels of distribution; and 4) ineffective and/or inefficient relief operations. Some of his elements seem timeless: so the question is “What can we do about it?”

The true question is one of technical and authoritative assessments, as well as, and maybe more importantly, how to bring this to bear on decision-making. Here, Western provided a warning about the limits of technology, and, particularly, the misplaced faith in how technology can change or improve the underlying dynamics of disasters. In other words, it is not because the information is available, someone will act on it — a persistent warning that we should all remember from the early warning systems for famine, and the associated huge expenditure that did not necessarily result in any action or benefits for the supposed beneficiaries.

This question, also, is one for which we have made less progress. But, is this because we have paid a lot less attention to it than to improving the quality and technology of our assessments and information systems? With this comes a criticism that Western levied on a manual that, just then, had been published by WHO on Environmental Health Practice in Emergencies:

- 1) A certain dogmatism, not always inspired by reality in the field, more how the world should be, not necessarily how it is; and
- 2) An assumption that there are well-organized health and environmental services, operating to plan.

Dogmatism and unrealistic assumptions continue to cloud many of the books and guidelines that exist to help health professionals and key staff in the field. We, in WHO, have gathered many of these into Emergency Health Library Kits, and we dispatch them to disaster scenes around the world, so that people have the key references at hand. This is an improvement, but there still are huge gaps in the knowledge base, as published: the quality remains variable, and what use is a library if you do not know what is in it and do not have the time to look it up? Immediate expert advice for key problems faced in field situations, remains a quandary, particularly knowing that most people in the field, particularly local ones, carry the immediate and heaviest burden and for whom almost always, it is their first disaster. So, not only are we able and need to continue to analyze and publish, but we also must look for some solutions to this quandary. Here, we do think technology should be of great benefit.

Interestingly, Western mentioned in 1972, that the ITU had plans to sponsor the launching of satellites to improve warning systems and international communication with the field and headquarters personnel, something that now again seems high on the agenda of the UN Secretary-General and the backers of GDIN, incidentally including WHO.

Proactive interaction with the media is a key responsibility of Health/Disaster professionals and for which we often are not prepared.

Western drew attention to the supply-driven and standardised relief effort at that time in the League of Red Cross and Red Crescent Society, asking, whether blankets, tents, foodstuffs, and clothing are always needed during all natural disasters? Are antibiotics and housing always needed after earthquakes? After floods, are disinfectants, medicaments, multivitamins and vaccines always needed? For tropical storms, . . . , etc.? As we all know, the issue of inappropriate donations and supply-driven relief, including the need for careful management of food aid, still is with us.

Capacity building, early presence, better international coordination, and technical support definitely are part of the solution, but this will, or should, include a different relationship with the media, where many of these myths on relief needs are sustained. Along with PAHO, we are thinking about a preventive communications effort: changing the thinking at the population level in donor and recipient countries. Proactive interaction with the media is a key responsibility of Health/Disaster professionals and for which we often are not prepared.

Western drew attention to the fact that independent observers always are impressed by the largely indigenous nature of the relief effort, i.e., that international assistance always only covers a minimal part while drawing a large part of the attention.

He postulated, in 1972, that unless we understand the different effects of various disasters, and unless decision-makers appreciate these, three major problems will persist:

- 1) Physicians and nurses will be sent to a disaster area in numbers far in excess of actual needs;
- 2) Surgical specialists may be sent when psychiatrists, paediatricians, or public health physicians would have been more appropriate; and
- 3) Physicians on the scene, whatever their specialty, may find that the emergency relief supplies are completely inappropriate, or contain surgical supplies, rather than a sufficient amount of medical agents.

Now, are we analyzing this phenomenon? Are we publishing it? How else can we truly influence those processes for a better match of relief with needs and demand?

In this regard, Margaretha Rubin published an article, in the WADEM journal, on the joint work we did in the former Yugoslavia. Her work not only analyzed how supply, need, and demand interacted, but also analyzed this in view of the different perceptions of needs and demand by beneficiaries, local health workers, and international NGO or IGO staff. We discussed this in a meeting in 1995 in Geneva, where all the major NGOs and other players were present, and came to some very good conclusions. So, guess my surprise when a few months ago, I participated in a meeting on Roll Back Malaria in Complex Emergencies, with many of the same players (not individuals, but agencies), had excellent discussions, and came to the same conclusions: *déjà vu*. Why do we have this meaningless ritual of meetings that come to the same conclusions? Why do we not seem to be able to move on, to apply the solutions, and assess if the situation improves?

The difference, in terms of morbidity and mortality, is made at the local level, and it is within local government, civil society, and academic institutions where professionalism and institutional resources need most to be developed.

A final series of questions Western posed in 1972, remains equally valid, namely what he termed "Indigenous Diseases", meaning when medical and public health services have been disorganized by a disaster, life and disease processes go on. He alerted us to the fact that pregnant women will deliver and expect to do so under the conditions they have come to expect. Diabetes patients need to be maintained on insulin, not to forget the huge needs for psychiatric services in most societies. Still, the Kosovo refugee crisis last year not only took us all by surprise, but from a health or morbidity/mortality pattern, our standard relief packages were totally inadequate, designed as they were for refugee situations in poor and tropical conditions, highly determined by infectious disease patterns.

Now, even for those, Western had postulated a moral problem in the following terms: rural areas in many developing countries have no regular clinical services. After a disaster-event in the Peruvian highlands, trained medical specialists suddenly appeared. For a short peri-

od of time, the quality of medical care was higher than the Indians ever had experienced or that the central government will be able to provide in the foreseeable future. The specialists begin to treat the indigenous medical problems, and then they disappear.

Interestingly, this is exactly the problem that now comes up with SPHERE. It is all good and well to work towards minimum standards, and many of these have been designed with WHO technical cooperation. But, what if we now work so these standards are met for an acutely displaced population, now in the charge of the international community? In the bleakest terms, the standards require that we have to provide men and women with 2,100 KCAL and 20 litres of water/person/day. However, the "host population" in the midst of which they live, have not seen 2,100 KCAL or 20 litres of water in any day of their living memory. The question, therefore, not only becomes which standards one should set or adapt, but it also must anticipate the moral outrage often felt and heard when we see expatriate civilian or military professionals confronted, for the first time, with the sad reality of a large part of the world population who live below a standard that is technically considered to be life-saving. One suddenly realizes that all calls to reduce world poverty over the past years, in reality, have been accompanied by an absolute increase in the numbers of the very poor. One would hope that, as in the past, the Road Ahead would consistently show that emergency and humanitarian professionals and NGOs also convert and apply some of their expertise and advocacy to improving health in the world's poorest countries and people, and at least join their voice to the growing chorus on the need for international solidarity and true initiatives of poverty reduction, for which the means have almost evaporated over the past 10 years.

Western also raised interesting queries about the applicability of a military approach to civilian disasters — in effect, predicting a debate that continues to this date. Now, it is termed Civil-Military Cooperation, and we are reviewing the Oslo Guidelines for use of Military and Civil-Defense Assets, not just in natural disasters, but also in complex emergencies. He did some comparative analyses of military and civilian physicians, noting that there hardly are any articles by civilian clinicians that analyze the administrative and logistical problems of the civilian physician following a disaster. Military physicians are not well-prepared for the civilian settings (and confusion) in which they must operate. In this setting, military discipline and support systems are lacking, civilian facilities often have not been designed for the management of mass casualties, and phenomena occur that have not been important in military populations. For most civilian physicians, this is their first exposure and most have never received any formal training in Disaster Medicine.

I know our colleagues in the ICRC have been speaking to conferences of military medicine about war, conflict, and health. What is found is that major cross-cultural problems persist, and the lack of dialogue between military medicine and civilian physicians

continues to present major challenges. So, both can make a meaningful contribution from their individual practice to a public health perspective.

I will not dwell on the recent evolution around human rights, humanitarian law, ethics, and professional health workers in conflict, but the ICRC work probably is the best there is, as well as is Hugo Slim's contribution on the continuing metamorphosis of the humanitarian practitioner:

In 1985, Susan George gave a satirical description of the ideal relief worker. The result was a ludicrously well-qualified and superhuman character type, able to adapt to any situation: First they must take graduate degrees in social anthropology, geography, economics, a dozen or so difficult and unrelated languages, medicine, and business administration. Second, at a slightly more practical level they must demonstrate competence in agronomy, hydrology, practical nursing, accounting, psychology, automotive mechanics and civil engineering. In addition, they must learn to give a credible imitation of saintliness, and it would be well if they could learn sleight-of-hand as well, since they will often be called upon to perform feats of magic. (George, 1990, p.50)

Slim proposes even more colours for this endangered chameleon.

I finally want to draw attention to a related issue that has continued to be neglected as well. In 1972, Western wrote:

...the press, the public, and relief agencies lose interest in a disaster-stricken area, after an interval. The primary cause is more often a more recent disaster. Invariably, however, private and governmental assistance agencies are more concerned with emergency relief than long-term rehabilitation. This neglect of the long-term effects of disaster upon the community may lead to inadequate planning and funding for full rehabilitation. Developing countries with limited capital are particularly vulnerable unless they receive intelligent outside assistance.

While Western goes on to provide a conceptual framework linking disasters with political, funding, economic, and health effects including the phenomenon of migration (another visionary contribution), he mostly concluded that studies on the long-term effect of disasters upon a community practically are non-existent.

How much has this changed? Let me admit that, at least for WHO, we have been totally deficient. However, without having the means currently, we have decided to devote some attention to the subject, linked as it is to the concepts of hazards, risk management, vulnerability, and coping mechanisms that are fundamental to our approaches in emergency preparedness and disaster reduction. The World Bank, in its last World Development Report, focused on poverty, and has made this issue crucial to its poverty analysis. The Bank now includes disasters, conflicts, and crisis in the cycles that breed or sustain poverty around the world.

Why is it so important to bring medicine, public health, and disaster management together? When I look at the eight themes of this conference, it seems we still are travelling on the same Road! Now, where does this Road take us? Or better asked, "Are we indeed finding ourselves on this collective Road and are we travelling in the same direction?" The Mission Statement for the 5th Asian-Pacific Conference on Disaster Medicine seems to confirm that we are. It will be interesting to hear what the co-chairs have to say and the action plan you will adopt. [to be published in next issue of PDM (Volume 16, Number 1)]

An important step was made by inviting and meeting with disaster management professionals. Also, to have included more public health concepts and professionals seems eminently sensible, noting both types of contributions are highly relevant, often cannot be made without input from each other, and the line between emergency medicine and public health often is blurred. Surgeons and anaesthesiologists, not to forget paediatricians, in certain circumstances, have displayed the finest public health skills and orientation; these definitely are not reserved for those with public health degrees and functions.

The line between emergency medicine and public health often is blurred.

For this conference, my questions are, "If we have not been able to address some of the key questions Karl Western put some 30 years ago, how big of a challenge must this be now? How good are we at meeting it?"

In WHO, we have been thinking and consulting with some of our partners in the Member Countries, and I thought it would be appropriate to share some of these conclusions:

- 1) As natural disasters and complex emergencies tend to occur mostly or most dramatically in developing countries, for the process to be relevant, it is essential that these always are represented adequately and targeted in consultations and efforts;
- 2) There is the need for a conceptual model addressing the relationships between risks and determinants of public health in the pre-emergency phase. The model must cover vulnerability and community coping capacity. Political, economical, and environmental factors are to be taken into account as well. The various factors in the model, should become measurable through indicators for potential predictive, analytical, or monitoring purposes. Then, this model could serve as the conceptual basis for all following phases;
- 3) Little is known yet about how to prepare for and mitigate emergencies at the country level. Health should be the basis for a collaborative, multi-sectoral process to make an analysis of the situation. The outcomes then should be used to develop a policy for preparedness. This process itself, has the potential not only to mitigate consequences of emergencies, but could contribute to prevention as well;
- 4) As to response, a key element in health policy would be

- a strategy on making a package of basic health services and public health interventions available that would be more resilient to potential emergency. The importance of the mode of delivery, besides content, is emphasized: this should foster reconciliation by taking into account principles of good governance and “do no harm”. The “minimal health care package” of health services and public health interventions during an emergency crisis should: a) invest in civil society, b) support existing community coping strategies; c) build on existing systems without replacing or even weakening them. *Evidence-based strategies* should be used to optimize international inputs, including economic planning. The need for coordination of all aspects of disaster medicine is acknowledged, and that this is dependent on *sound health information*;
- 5) Policy development and “health sector reform” are necessary to a country moving out of a crisis towards sustained recovery. Health reform should not be brusquely interrupted during an emergency, and assistance for capacity building should continue throughout the emergency; and
 - 6) Operational research and case studies are required to develop the strategies mentioned above.

For WHO, it means we need to adapt to today's circumstances in the case of incipient emergencies. In order to be effective in today's world, WHO must become

more proactive in its pursuit of equity in the health sector as a means of preventing disaster. WHO can:

- 1) Play a leading role in conceptualizing the “pre-emergency” health model and related indicators that would be the best predictors of poor health outcomes in emergencies. This model and its indicators should be field-tested and followed in a number of selected countries to validate their usefulness;
- 2) Serve as a technical guide to those working in humanitarian response. Technical assistance should include health development for preparedness planning, developing a basic package of health services and public health programmes and policy for health sector reform toward post-conflict sustained health;
- 3) Make a concerted effort to have our developmental policies and programmes strengthened in ALL areas and in ALL population groups of emergency-prone countries; and
- 4) Promote research in the area of preparedness, mitigation, response, and health reform in emergencies.

On this Road we want to follow, the APCDM's work on standards, on education, on evaluation, on the use of new technologies and coordination, and on professionalization is highly appreciated, as was the participation of many people and countries from around the Pacific rim. All will take us further on this Road we want to travel. Your action plan will further its cause.

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