Health Aspects of the Tsunami Disaster in Asia

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Abbreviations:
BSF = basic societal function
INGO = international non-governmental organizations
IOM = International Organization for Migration
NGO = non-governmental organization
PAHO = Pan-American Health Organization
UN = United Nations
WHO = World Health Organization

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Abstract

This is a summary of the proceedings of the Conference on the Health Aspects of the Tsunami Disaster in Asia that was convened by the World Health Organization in Phuket, Thailand from 04–06 May 2005. It contains reviews of the experiences of the health sector and early recovery following the Earthquake and Tsunami with emphasis on what was done well and what could have been done better and the lessons learned that can be incorporated into actions that will mitigate the damage created by future events. It outlines the national and international responses and recovery and the actions taken and not taken by the international community in support of the countries affected. Specific issues addressed include: (1) needs assessments; (2) coordination; (3) filling gaps in essential services, and (4) capacity building at the country level. Each of these aspects is analyzed as to its: (1) appropriateness; (2) adequacy; (3) effectiveness; (4) efficiency; and (5) connectedness.

Much of what occurred provided benefits to the stricken population, but there is substantial room for improvement through implementation of the lessons learned. These lessons must be converted into actions in order to mitigate the damage sustained and to enhance our responses to the damage from future events.

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Introduction

The World Health Organization (WHO) Conference on the Health Aspects of the Tsunami Disaster in Asia took place in Phuket, Thailand from 04–06 May 2005. The event was organized in conjunction with the Royal Thai Government and with co-funding from the Government of Italy.

Some 400 senior policy advisers and expert practitioners from Asia and elsewhere were brought to the Conference. The participants came from national governments, United Nations (UN) agencies, non-governmental organizations (NGOs), civil society groups, academic institutions, and countries that provided relief assistance to the Tsunami-affected populations.

The Conference was focused on the *lessons learned* during both the *immediate responses* to the Tsunami and the *early phase of recovery of the health sector*, within the broader framework of the affected countries' own efforts, supported by international assistance. The specific objectives established for the Conference were to:

1. Review the experiences of the health sector with responses and early recovery in order to determine successes achieved and limitations encountered, (i.e., what was done well, and what could have been done better?); and
2. Identify lessons learned that the health sector can incorporate into improving future responses to crises and in the recovery systems and processes implemented, (i.e., in what ways could future operations be organized better, and the technical components of these responses be rendered more effective?).

The Conference was organized to address these objectives from the perspectives of: (1) national response and recovery actions; and (2) actions taken and not taken by the international assistance community—UN agencies,

donors, NGOs, and private sectors, with a particular focus on those of the WHO. The Conference was organized around three themes: (1) health protection and disease prevention; (2) health services delivery; and (3) health policies and coordination. These themes were discussed in plenary sessions and 18 technical panels. The panels addressed key issues relating to:

1. Needs assessments;
2. Coordination;
3. Filling gaps in essential services; and
4. Capacity building at the country level.

Each issue was analyzed using a common framework covering the: (1) appropriateness; (2) adequacy; (3) effectiveness; (4) efficiency; and (5) "connectedness" of the different national and international interventions implemented, viewed from both a technical and organizational perspective.

Findings and Discussion

The Proceedings of the Conference have been synthesized into 12 inter-related areas: (A) developing national capacities; (B) information for needs assessment and needs-based actions; (C) neglected public health issues; (D) gender dimensions; (E) benchmarks, standards, and codes of ethical practice; (F) management and coordination of responses; (G) role of volunteer bodies; (H) private sector partnerships; (I) government donor funding policies and practices; (J) civil-military cooperation; (K) working with the media; and (L) commitment to act. Each is summarized in detail as synthesized from the information provided by the respective rapporteurs that summarized each of the sessions. Each of the sessions is summarized individually in the detailed reports that follow this discussion.

A. Developing national capacities for disaster preparedness, risk management, and vulnerability reduction

The Conference leaders stressed the centrality of disaster reduction to national strategies for achieving the Millennium Development Goals. The participants endorsed the need for nations to be prepared better for major crises. This would include stronger national capacities to address health issues both for disaster risk management and in vulnerability reduction (increased absorbing capacity). It was noted that the levels of financial commitment to disaster responses appear to be increasing; however, such funding also should be made available to support the building of national capacities for disaster preparedness and vulnerability reduction.

Findings

The findings from the Tsunami relief experience at the local and national levels indicate that:

1. Communities that had experienced disasters and developed mechanisms to cope with such events were more resilient and responded better to the Tsunami than did those that had not. For example, community health workers contributed a great deal in Thailand;
2. Community bodies and national agencies that had established emergency and disaster response plans and had undergone regular practice drills reacted to the Tsunami with greater promptness and worked in a more coordinated manner;
3. National and international health agencies with previous experience in crises had pre-defined procedures and systems, and were better prepared to respond to the disaster than were those without previous experience;
4. Pre-existing governmental capacities were important in determining the intensity with which the health sector could respond, and in facilitating the rapid restoration of the provision of essential goods and services;
5. The profound emphasis on coordinated public health responses with effective early warning of potential disease outbreaks had a crucial impact on limiting disease outbreaks and preventing epidemics—despite significant displacements of populations; and
6. The prompt deployment of military logistical capabilities advanced and facilitated the delivery of assistance, especially in hard-to-reach areas, thereby enhancing people's chances of survival.

Limitations

Reviews also exposed limitations in the response and recovery phases:

1. Millions of people in South Asia still live in hazard-prone areas without adequate infrastructures that could reduce their vulnerability to events caused by such hazards;
2. There were no pre-existing systems for early warning, alert, response, and evacuation in the health sector (though disease surveillance, early warning alert, and responses were implemented after the Tsunami impacted the affected areas);
3. Mechanisms for managing the logistical aspect of the responses, including customs, warehousing, and contingency plans for distributing supplies and drugs were largely absent, obsolete, and/or under-resourced;
4. Key health facilities were destroyed—though damage was inevitable (given the overwhelming force of the Tsunami), some buildings could have withstood major damage if constructed to more robust standards based on local hazard analyses;
5. The speed of the health responses was uneven and existing health services were overburdened by a sudden influx of injured victims;
6. Because of unnecessary anxiety about the possibility of disease spreading from dead bodies, many were buried quickly in mass graves with no opportunity for visual identification, photography, or tagging; and
7. Although there were community networks for response or public health interventions, it seems that community awareness of the hazard was lacking. Not many of the coastal communities of the Tsunami-affected areas knew what to do when the shoreline receeded.

Summary and Conclusions

The participants concluded that a prepared health sector and strong physical infrastructure had the potential to mitigate the impact of destructive events and could provide the platform for rapid, effective responses. This emphasized the importance of preparedness and response capacity at the community and local level. The health sector is expected to educate the public on: (1) the means to assess health risks; (2) how to prepare for

and cope with disaster; and (3) on the myths and truths about the health consequences of disasters. A prepared health sector can mitigate the impact of disasters by:

1. Reducing the numbers of avoidable deaths, injuries, and illnesses;
2. Anticipating population displacements;
3. Establishing disease surveillance systems;
4. Preventing and managing psychological and psychosocial problems;
5. Planning for food shortages and nutritional deficiencies;
6. Monitoring for diseases due to environmental health hazards;
7. Preventing damage to health facilities and other infrastructure; and
8. Anticipating and minimizing disruptions to routine health services.

The Conference participants recalled that models for cost-effective disaster preparedness exist worldwide, ranging from the epidemiology field-training program in Thailand to the regional and national preparedness programs in the Americas supported by the WHO/Pan-American Health Organization (PAHO). Implementation of such models aims to reduce the risk of the damage that will result and assure the resilience of health facilities to commonly prevailing hazards. Thus, the intention of such actions is to maintain priority hospital services, manage mass casualties, rapidly evacuate the injured, and establish disease surveillance and control measures. These require the actions of competently led health workers with knowledge and skills that are kept up-to-date through the provision of education, training, and practice. The development, implementation, support, and evaluation of partnerships between different organizations that provide specialized capacities could be useful.

Planning is vital to ensure that affected populations and individuals are prioritized to receive access to essential health care. This includes addressing the specific needs of women and children, older people, those who have sustained psychological trauma, disability, and/or chronic illnesses, as well as vulnerable, displaced persons.

Governments have adopted the Hyogo Framework for Action for Disaster Risk Reduction at the conference held in Kobe, Japan in January 2005. This includes strong expectations that governments and the United Nations will work together, and with NGOs and the private sector, to develop cross-sectoral disaster preparedness capacity through the provision of financial and technical backing.

B. Information for post-event needs assessments: Implementation of needs-based actions

Accurate, reliable, and appropriate information is fundamental for planning, organizing, and managing effective crisis responses.

As soon as is feasible, and definitely within two weeks of a sudden-onset, precipitating event, information on damage, needs, and capacities is required for decision-making and implementation of appropriate interventions. Further assessments are required at various stages in the relief, recovery, and reconstruction phases in order to monitor and evaluate on-going interventions, identify evolving or unexpected needs, and inform the planners for each phase. Data collected, collated, and interpreted during a crisis also are valuable for planning and implementing future disaster risk reduction interventions.

Participants stressed the crucial role of baseline (pre-event and post-event) information in assessing the impact of humanitarian aid and identifying new needs as the situation evolves in Tsunami-affected communities.

However, if assessments are to be undertaken promptly, appropriate techniques must be defined and tested in advance. Pre-event data should be located, and assessment designs should use universally available geographical information system coordinates and standardized sampling and data collection modules. Assessments should yield population-based health information that helps identify groups of people with needs through disaggregation of results by age, gender, and location. In addition, consideration should be given to combining food and livelihood security assessments with nutrition, morbidity, and mortality surveys.

Findings

The Tsunami experience demonstrates that uncoordinated, incomplete, inaccurate, competing, and overlapping assessments were undertaken by different agencies and organizations. These assessments not only wasted time and resources, but also raised ethical concerns in relation to traumatized populations being subjected to repeated questioning by representatives of different entities.

Participants noted that many assessments had been undertaken, yet assessors still were not able to access all of the baseline data that they needed in the aftermath of the event. Good data were available from some communities in which public health surveillance systems had been well-developed before the event. Information derived from these data enabled a more rapid and effective response and shortened the relief phase.

Conclusions and Recommendations

It was concluded that a single, consolidated, post-event assessment system should be applied to specific populations. This system should include both the initial assessments and appropriate ongoing surveillance of health needs. The assessments should be followed by the coordinated provision of goods and services—the accessibility and quality of which must be assessed regularly. To establish this system, international agencies must continue the vital work of agreeing how best to support local and national authorities in tackling post-event health needs assessments, disease surveillance, and provision of both primary healthcare and referral services. Local, national, and international authorities must invest in developing the capacity of national groups to do this work. Preparedness includes assigning responsibilities for collecting, maintaining, and disseminating the baseline data required in emergencies, such as data on community-level health needs and services and the social situation of populations at risk. Donor funding policies also should encourage the conduct of timely and good quality needs assessments, and donor funding practices must be guided by the results. The WHO is working with NGOs, the Red Cross and Red Crescent Movement, UN agencies, and the International Organization for Migration (IOM) to develop standard health assessment tools.

C. Neglected issues in public health management

Emergency, rapid needs assessments should focus on basic health needs, as well as on health determinants such as access to water, food, sanitation, and shelter. The risk of malnutrition, morbidity, and mortality increases among vulnerable populations such as infants, children <5 years of age, pregnant and/or lactating mothers, and the elderly.

The most effective rescue and relief teams included community health workers who are able to provide social support and psychological first aid, and who do this in ways that reinforce innate strengths and coping mechanisms within communities. Every effort should be made to normalize the life of individuals, families, and communities, as soon as possible, through strenuous efforts to ensure prompt access to livelihoods, schooling, and housing. Responsibility for psychological support to those who are distressed should not be restricted to medical practitioners, as only a minority is likely to need clinical mental health services.

Findings

The initial health response to the Tsunami focused on the rescue of the living, treatment of casualties, and recovery of essential services. These critical tasks were undertaken by many partners with varying degrees of success that depended on the extent of the devastation to which they were exposed and the practical difficulties of access and assistance delivery, availability of resources, competence of service providers, and cooperation between them and local and national counterparts.

The uneven availability and distribution of food was exacerbated by the wide dispersion of displaced people, often in remote locations. Some of the more important public health issues that did not receive adequate attention include: (1) efforts directed toward the preservation of the mental health of the affected population; (2) the management of massive numbers of casualties; and (3) the management of the forensic aspects of the fatalities. Each of these issues is discussed below.

1. *Mental health*—Assistance efforts had to be sensitive to the psychological trauma to the survivors, many of whom also were troubled by the uncertainty of not knowing the fate of their loved ones. The Tsunami experience suggests that unregulated counseling and other psychosocial interventions were problematic in several locations. Mental health often is given inadequate recognition as an integral part of the health and well-being of individuals. However, the only interventions that should be provided are those that have been shown to be effective for the prevention, mitigation, and/or treatment of the effects of psychological trauma resulting from the event.

2. *Management of mass casualties*—Reviews of the Tsunami experience indicated that most countries affected were ill-prepared to handle large numbers of casualties. They lacked standardized triage systems and pre-established networks of hospitals for referrals and burden-sharing. Most of the immediate assistance given to the injured was provided by other, less-injured survivors. This suggests that training of the public in first-aid techniques could have large-scale, life-preserving and morbidity-mitigating benefits.

The special role of the National Red Cross and Red Crescent Societies, supported by the International Red Cross and Red Crescent Movement, was commended during the Conference. Reference was made to cooperative arrangements between the Societies, national and local health authorities, and the WHO.

3. *Forensic aspects of management of fatalities*—Participants questioned whether excessive human resources were devoted toward the handling of the dead while the survival and welfare needs of the living were not being met. They recognized that political and cultural factors often were key determinants of practices used to dispose of human remains, as well as the myth that dead bodies generate disease often influenced decision-makers. There were other reasons for not rushing to cremate or bury victims. The lack of identified bodies impeded attempts by survivors to establish their rights over assets and property, to grieve over the loss of a loved one, and to perform death rituals. Participants heard of the many gaps in systems for managing mass fatalities in the Tsunami-affected countries.

Conclusions and Recommendations

Although the acute emergency phase is over, the reconstruction and rehabilitation phase now is in progress and will continue for several years. The psychosocial and mental health needs of the community will change and evolve over time. It is mandatory for psychosocial support and mental health services to be appropriate for the needs of the community for this phase.

The best form of disaster preparedness is to plan and build a healthcare delivery system of which mental health services are an integral part. Disaster management plans, even if they are in place, will work only if the infrastructure exists to deliver what is needed.

Recommendations can be summarized as follows:

1. Post-event needs of the community should be provided on an objective needs assessment;
2. Post-event needs of the community should address a range of issues from psychosocial distress to mental illness;
3. Post-event interventions should be delivered at multiple levels, involve multiple sectors, and be suitable and appropriate for each phase of the disaster;
4. Post-event interventions should be based on understanding of the local culture and be delivered by locally available, appropriatley trained and supervised human resources;
5. Any gaps in service should be identified quickly and local solutions should be devised to fill these gaps;
6. The most effective form of disaster preparedness is to build on the existing capacity of the community-based health and mental health services before the disaster; and
7. Independent evaluation of the impact of service delivery should be conducted at regular intervals.

D. Gender dimensions

Reproductive health interventions, as well as HIV/AIDS interventions, will not be successful without the equal involvement of both males and femails. Also, gender specific imbalance likely will increase the pressure on young females to marry or remarry (with risks to their reproductive and psychological health), which may have long-term implications for the differential gender impact of the Tsunami. Households

headed by female survivors will face particular economic burdens and pressures. Women must be in a position to realize their rights and contribute to the planning and decision-making processes for community recovery. Women should be seen as valuable partners and not as "vulnerable victims".

Findings

There was a significant impact of gender on the survival and welfare of populations affected by the Tsunami. In most locations, more women died than did men. This was due to multiple factors, including biological, physical, social, and cultural differences. It also was reported that subsequent service delivery sensitivity was insufficient to the needs of women.

Conclusions and Recommendations

Experiences in the Tsunami-affected communities and in other disaster situations, suggests that the integration of gender concerns into disaster management may call for a shift in the attitudes and approaches of all those involved in disaster responses and recovery. Participants agreed that the minimum requirements are: (1) the collection of gender (and age) disaggregated data; and (2) gendered analysis of population needs. Health assistance strategies explicitly must address gender-based disadvantages. They should include, but not be limited to: (1) minimum service packages for reproductive health; (2) maternal and child health services; and (3) actions to prevent transmission of sexually transmitted diseases and the human immunodeficiency virus (HIV).

E. Benchmarks, standards, and codes of ethical practice

Over the last few years, a considerable effort has been made to develop standards, norms, tools, techniques, and health kits for use in disaster situations. The "Sphere Project", a multi-agency initiative, sets minimum standards to be used in disaster situations. The WHO has developed standardized health kits. A Standardized Monitoring and Assessment of Relief and Transitions Initiative also has been developed. Gaps include indicators for assistance to vulnerable subgroups, and aspects of analysis methodology. Inadequate assessments result in inappropriate strategies that neither make the best use of resources, nor result in optimal reductions in avoidable morbidity and mortality.

When humanitarian agencies respond to a crisis and define a set of goals and objectives for their operations, they enter into a professional contract with their partners and donors. However, often it is forgotten that they also are entering into a moral contract with their beneficiaries. There is an obligation for humanitarian actors who accept donated funds or commit to assisting a community or institution to behave ethically, function transparently, and be accountable for the impact and outcomes of their actions, not just for their use of donated resources. Complementary ethical codes of practice are expected from donors to ensure common consistency.

Findings

While progress on setting standards has been made at the global level, and while there has been a general professionalization of humanitarian assistance, the Tsunami experience highlighted the gap between what is desirable and what actually happens in a crisis. Different organizations used different measurements, methodologies, and interpretations in their own assessments, making it difficult to compare results, identify the populations with the greatest needs, and/or achieve consensus on priorities. This lack of coordination between different organizations resulted in wasted resources, and partly was explained by inconsistencies in leadership, undue pressure to generate information rapidly, and lack of expertise in the application of available standards.

Conclusions and Recommendations

To avoid this state of affairs, disaster preparedness plans should include standardized assessment and reporting formats, with an appropriate set of indicators, to ensure that all key data are collected in a comparable manner that can be used to yield reliable information on gaps that must be filled. An essential requirement is widespread international acceptance of standards and indicators, together with the means to enforce them. Participants proposed the establishment of a peer group to serve as a means through which health organizations working in crises/disasters could regulate themselves, and assess (and accredit) the competencies of response personnel. They asked that the WHO consider options for such an initiative. Also, they proposed that the curricula of health training institutions incorporate standards and best, basic practice for humanitarian health work.

F. Management and coordination of disaster responses

The responsibility for disaster preparedness, managing the responses, undertaking assessments and monitoring progress, coordinating the responses, and filling gaps rests with local and national authorities. However, successful management, coordination, and control require the consent and cooperation of all of the stakeholders, which often is not forthcoming in the early stage of a disaster response. Governments of hazard-prone countries have indicated that they seek the UN's authoritative support in responding to (and, at times, directing and controlling) offers of personnel, equipment, and materials made available through external assistance—with the WHO serving as the health arm of the UN. This is vital in situations in which the number of external groups offering assistance poses major challenges for national and local authorities in planning and phasing relief efforts.

Findings

In-country, health-sector management capacities were overwhelmed by the scope and suddenness of the Tsunami. The subsequent global response resulted in confusion, congestion, and competition for scarce logistical and transport resources. Within the health sector, some of these operational difficulties could have been prevented. During the Tsunami responses, effective supply systems and logistics often were the key to efficient action.

Conclusions and Recommendations

External assistance to a country experiencing a disaster (crisis) should be managed by the local and national governments through a participatory structure involving representatives from both the recipients and donors. This is relevant particularly for actions in the health sector where needs can change quickly, and the costs encumbered through the han-

dling of inappropriate assistance (personnel, equipment, and materials) are great. Several countries are reviewing or revamping their national and local coordination structures to incorporate the lessons learned from the Tsunami experience, and are considering the establishment of "disaster management authorities or centers". The WHO can advise countries on how these overall coordination structures could reflect health sector concerns adequately and specifically.

It is unacceptable for relief—at a time of a sudden-onset crisis—to be impeded by administrative burdens imposed on affected communities (or on personnel trying to provide assistance in the front line) by relief workers. Excessive supervisory visits also should be discouraged.

G. Key role of voluntary bodies in preparedness and response

Voluntary bodies, including civil society organizations, the Red Cross and Red Crescent Movement, and non-governmental organizations, make major contributions to international and local humanitarian responses. They have been a driving force in defining humanitarianism and the guidelines that govern its application. The major international and national voluntary agencies are professional, committed, well-resourced, have extensive networks of partnerships and collaborations with civil society, operate at the local level, often in remote areas, and frequently work with groups that tend to be marginalized. Indigenous voluntary bodies also have cultural and social knowledge that is crucial to the planning and implementation of ethically sound humanitarian operations. Professionals from the Red Cross and Red Crescent Movement, as well as well-functioning NGOs, can make crucial contributions to preparedness and response efforts. Coordination among NGOs and other groups should be time-efficient and result in the needs-based deployment of available resources.

Findings

The interface between the voluntary and government sectors sometimes is tense, with a lack of clarity on mutual roles, obligations, and accountabilities.

Conclusions and Recommendations

The WHO should work with NGOs to agree on more efficient and effective means for coordination of health responses. Voluntary bodies also are regulated relatively lightly, and many lack the essential expertise and professional codes of conduct essential for minimizing the likelihood that their actions will be counterproductive. This lack of codes may be compounded by high staff turnover; in such circumstances, lessons learned may not be institutionalized.

While much more can be done to strengthen the capacity of voluntary agencies and the standards to which they adhere, their autonomy also should be respected. At the same time, government capacity to monitor performance standards of NGO partners must be enhanced.

H. Private sector partnership for health action in crisis

The private sector possesses a blend of skills and resources (e.g., money, materials/equipment, technical manpower, and intellect) that, coupled with the sophisticated business mechanisms of a global corporation, can be used in cooperation with the public sector for achieving greater impact. The private sector possesses expertise usually not available in the public sector, and vice versa.

Findings

There was an unusually high level of both national and international private sector involvement in the responses to the Tsunami, with contributions of professional skills, in-kind relief supplies, and funding. This participation included both private companies in the region and global corporations. Local-level experiences illustrated the potential benefits that can result from combining the private sector provision of resources and expertise with the contributions of government and voluntary sectors.

Reviews indicated that successful partnerships between the private and public sectors reflected the preparations made by the partners before personnel or materials were deployed.

In the Tsunami response, private sector experts successfully were deployed to work with international agencies. Their roles were defined carefully, enabling skilled personnel to be identified and deployed rapidly. The deployments were facilitated through support provided by key UN and government officials (including bespoke briefing and debriefing arrangements). Private entities were able to work with the government and other stakeholders to map and estimate generic needs during the crisis.

Conclusions and Recommendations

Success is most likely if there are pre-existing personal relations, memoranda of understanding, and/or ongoing programs of work between private entities and either UN agencies, the Red Cross and Red Crescent Movement, NGOs, or governments. If experienced professional and technical experts are to be provided by private entities to work under public sector direction, arrangements for direction and reporting must be agreed upon in advance. This reflects the absolute importance of mutual investment—by both groups of partners—in the building of trust and credibility. Then, there is scope for rapid agreement on whom or what is needed, where and when, and under what management arrangements.

Despite this overall positive experience, concerns continue to be expressed over the motives of private entities involved in disaster response, and the need to ensure the neutrality and the integrity of the public sector. As the ways in which public-private partnerships develop can have significant policy consequences in relief and recovery settings, there is a need for the development of clear principles of engagement between the private and public sectors. Private sector groups gain trust and credibility if they identify core competencies and resources, develop databases of what is available, and establish procedures to match available resources with needs. Then, they are in a position to mount speedy and supportive responses.

I. Government donor funding policies and practices

Non-governmental organizations, unlike governments and international NGOs (INGOs), are able to identify needs and rapidly deliver services because they are based in and intimately familiar with the communities they serve, maneuverable, willing to take risks, unbound to fixed protocols, and less constrained by security and political considerations. Their identification with community aspirations can

facilitate the effective brokering and matching of community needs with donors, INGOs, and government resources. However, these characteristics also make NGOs less capable in other aspects of disaster response. Non-governmental organizations are unable to coordinate their activities with one another or with the government and international aid agencies. A lack of equipment and technical expertise means an NGO's response is limited to fewer activities, and these services often are sub-par and result in poor health outcomes. Governments and aid agencies view these shortcomings as a rationale to exclude or limit their work with NGOs. Non-governmental organizations believe these larger actors patronize them and ignore the essential work NGOs can perform and the valuable inputs from the field that NGOs can provide. Enabling NGOs to overcome these deficiencies is an important opportunity for actors in the international health system to develop a more robust disaster response. Governments and INGOs should accept that NGOs must remain community-based, flexible, and imperfect if they are to deliver essential health services in a post-disaster situation successfully. Instead of ignoring or marginalizing NGOs due to this limited capacity, governments and aid agencies must complement NGOs by bolstering coordination among them, building their capacity to deliver technically sound services, and learning from the important work of NGOs.

Consistent tracking of resource flows and reliable data on aid pledges, commitments, and disbursements are essential for planning and accountability. Funding methods—ranging from the establishment of funding pools to tight earmarking—influence the ways in which agencies behave and the efficiency and effectiveness of their programs. Several reviews are being performed with plans to reform the financing and management of humanitarian responses to crises and disasters. The goal is to devise a more rational system that matches available resources to needs, thus reducing inter-agency competition for funds, disputes over who does what, and the occasional tendency of donors to select the most visible projects.

Findings

The generous response of donor governments from around the world has been a characteristic of the Tsunami experience. However, participants debated the extent to which the agreed principles of "Good Humanitarian Donorship" were put into practice. The earmarking attached to individual donor contributions did not always reflect community-level needs.

Some of the frustrations expressed by donors centered on information provided by agencies and their accountability for utilized resources. Donors reported receiving inconsistent messages from agency field offices and from their headquarters, particularly in respect to what was needed most urgently. They called for more consistency and predictability at different levels within individual agencies, better tracking of project implementation, and more rigorous reporting systems that indicate how funds are used. Within the Tsunami response, some donor agencies felt that there was an excessive focus on curative health care, and not enough on the delivery of public health interventions in peripheral areas.

Conclusions and Recommendations

Funding must be available rapidly and capable of being directed to meet identified priorities. Those who receive funds require sufficient flexibility to be able to respond to changing needs. Funding decisions should be made with minimal transaction costs. The burdens of writing proposals, reporting, and accounting can be reduced considerably with greater harmonization of requirements among donors. A coordinated assessment of needs can reduce transaction costs and increase monetary value. Funding for new disasters and crises should not affect adversely the provision of resources for meeting needs from ongoing crises (especially those out of the media's eye) or divert resources from other health sector needs. Funding decisions should not exacerbate existing inequities between population groups or nations.

J. Civil-military cooperation

The Tsunami disaster in Asia was characterized by extraordinary cooperation between civil and military relief efforts. This interaction was facilitated greatly by the establishment of the Combined Support Force 536 at the Royal Thai Air Base Utapao and the staffing of the UN cell with a Civil Military Liaison Officer from the WHO. These reports culminated in the Health Assessment Missions where military, sea-based assets flew WHO-led, multi-agency teams to 24 internally-displaced person (IDP) camps in Aceh Province, Indonesia, where an estimated 500,000 people were at risk for communicable diseases. No widespread outbreaks occurred, and the continuous flow of information gathered during the missions helped address immediate health concerns, such as directing limited measles vaccines to where they were needed most. For the long term, the health assessment missions helped guide relief efforts from those based on estimated need ("push") to those based on actual need ("pull"). Given the success of this civil military interaction, drafting guidelines for specific military cooperation on health could be useful to all concerned.

The Tsunami response was characterized by unusually close civil-military cooperation. Soon after the Tsunami, the military response was coordinated by a combined Support Force based in Utapao, Thailand. It brought together the military capabilities of 30 nations alongside a UN civil-military liaison cell. The arrangement enabled the early dispatch of several assessment and response missions. One of these missions (the multi-agency health assessment mission in early January) systematically assessed needs in several hard-to-reach locations in Aceh. It resulted in the first comprehensive needs assessments that involved 500,000 vulnerable people.

The civil-military interface worked best when civilian authorities assumed the responsibility for specifying what was required from the military in the way of logistical, transportation, and other practical assistance.

Conclusions and Recommendations

Civilian planners should be involved alongside their military counterparts from the beginning, and deployed in the field at the same time, with clear agreements made beforehand on command, coordination, control, and tasking. The use of national military assets in disaster relief is not unusual, but international cooperation among militaries on humanitarian

assistance still is *ad hoc*. This international cooperation remains beset with concerns that must be addressed through focused dialogue specifically designed to further develop standards for civil-military cooperation. These standards then can be incorporated into future education and training.

The scale and overall success of civil-military cooperation in the Tsunami response has triggered a serious debate. Concerns over the military's ability to operate within accepted humanitarian principles and to ensure the integrity of humanitarian space overwhelm the staff of many humanitarian agencies. These concerns were valid, hence the need for careful work to enable persons working at different levels within civilians and within military organizations to understand each others' motives (and fears) and to agree to the procedures through which they can work together. These include joint efforts under agreed memoranda of understanding. However, great care must be taken when civilian-humanitarian agencies and militaries work together in a conflict area. Proper information must be provided to the population beforehand. Such joint work is best undertaken within the context of already existing civil-military and public-private liaison mechanisms led by the UN, as well as innovative means at national and community levels.

K. Working within local, national, and international media

Media and communication professionals play a critical role in providing information about affected populations whose survival is at stake, not only to members of the public, but to governments and donor organizations who make funding decisions as well. Journalists often are the only source of information and analysis during the initial and critical stages of a crisis. Local and community media, particularly radio broadcasts, also provide essential public health information to persons in the affected communities about what they can do to improve their chances of survival.

To broadcast or write a story, journalists require facts and figures, reliable analyses, human-interest stories, good pictures, and interviews with technical experts. In order to get vital information distributed, humanitarian organizations must ensure journalists have access to the information they need. This means that technical staff in humanitarian organizations must be media-friendly and trained in communication skills.

Findings

Immediately after the Tsunami, many journalists observed that population-based information about health risks was in short supply. As a result, critical issues, such as psychosocial trauma, mental illness, risks for diarrhea and malaria, and women's health received media coverage that was out of proportion to their public health importance. Decision-makers, who tend to rely on the international media for up-to-date information, were uninformed regarding some of these issues. There is a clear need in disaster response for increased investment in building effective relationships between humanitarian agencies and the media—including analyses of what did or did not work in the way of health interventions.

Conclusions and Recommendations

Effective relations with the media take time to establish. They can be built during "down time" when humanitarian personnel are not preoccupied with responding to a major crisis. Journalists want to receive informed briefings and analyses of what did or did not work from a technical perspective. These do not always need to be "on the record".

Media and communications work should be afforded a high priority as part of all humanitarian operational plans—both for the relief and recovery phases. Journalists and broadcasters should be treated as part of the response team, as they are key partners in helping shape and frame the policy agenda for disaster preparedness and response. They can play a major role in disseminating key public health messages. The WHO was encouraged to establish more effective relations with key media groups to enable them to better appreciate health issues during disasters and to help demystify myths that hinder national and international response efforts. The WHO also was encouraged to hire local journalists, who usually are better at collecting and organizing information than health and humanitarian professionals from outside of the affected area.

L. A commitment to act

Participants agreed on the need not just to observe and analyze past events, but also to learn and incorporate results into further plans and actions as quickly as possible. The WHO Secretariat is committed to record the results of this Conference as it continues to support Member States and health programs to work more effectively for vulnerability reduction and disaster preparedness, relief, and recovery in both the Asian Tsunami-affected communities and wherever there is risk for disasters and crises. The WHO's support will be provided through its country and regional offices, collaborating centers, and headquarters departments. The WHO proposes to report to Conference participants within six months on ways in which the outcomes of this Conference are being incorporated at both national and international levels, particularly in those areas in which urgent, specific actions have been requested.

Conclusions

While much of the information for improving responses in crisis situations is known, the same mistakes often are repeated. "Lessons learned" may be more accurately titled "lessons identified." They are not always learned. *In order to benefit from lessons learned from past experiences, there must be movement from just talk and apparent commitment to action. Knowing is not enough; we must apply. Willing is not enough; we must do.*

This section focuses on what can be done better—what can be done to remember the lessons experienced and be better prepared for the next emergency? It consists of four sub-sections: (1) assessing the results of health interventions; (2) developing systems and capacities; (3) developing partnerships and resources; and (4) how can we do better?.

1. Assessing Results of Health Interventions

Over the years, many lessons have been identified on the monitoring and evaluation of health interventions provided during disasters. The Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP) database, for example, has >500 evaluative reports containing "lessons". Analysis of the key lessons in these reports stresses the need for: (1) improving coordination; (2) standardizing methods and indicators; (3) ensuring suffi-

cient and appropriate baseline data; (4) providing appropriate technical expertise; and (5) ensuring a greater commitment to provide the funds required to act on recommendations. There is a continued and urgent need to bridge the gap between disaster responses and development, both in terms of actors and funding mechanisms.

Evaluations—In a disaster related to a natural hazard, a complex emergency, or a communicable disease epidemic, ongoing monitoring and intermittent and focused evaluations are required to assess the physical, psychological, and socio-economic effects of a disaster and the effects of all of the interventions implemented. Given the large amount of resourses invested, evaluations are especially important in the case of the Tsunami. Where will these committed funds go and how will they be used? What are they accomplishing? Evaluations must compare and examine the results of health interventions undertaken by the local populations themselves, as well as humanitarian and development NGOs (both national and international). Intermittent, system-wide, multi-staged evaluations are required throughout the next 10 years to evaluate the health responses to the damage created by the Tsunami.

A proper monitoring and evaluation system requires political and financial commitments by governments, donors, and key organizations, not just to implement the systems and to undertake evaluations, but to act on the results obtained.

Coordinating Authority—A clearly identified, recognized, and respected coordinating body that has authority to coordinate interventions and evaluations must be identified before the disaster occurs—preferably specified in the disaster preparedness plan. If this does not occur as part of the planning process, a coordinating body must be established on Day One. Serious discussions must occur regarding the establishment of a regulating body to enforce accepted disaster response principles and standards. Such a body, which focuses on "disaster malpractice", requires extensive collaboration among the players.

Standardized Assessments—Baseline data must be collected during the disaster preparedness phase and must be readily accessed. Disaster preparedness plans must have standardized assessment forms to ensure that key data elements are disaggregated by appropriate categories and are collected in a similar manner. Currently, all of the Southeast Asia Tsunami assessments that have been undertaken must be gathered and examined to facilitate the establishment of a proper monitoring and evaluation system. Due to some poor assessments, more quality assessments must be undertaken immediately to direct appropriate interventions and allow for proper monitoring and evaluation.

Summary

Assessing the results of health interventions in disasters can be improved through the implementation of the following recommendations:

1. One agreed upon disaster preparedness plan;
2. One designated Disaster Coordinating Authority;
3. One agreed upon Monitoring and Evaluation System;
4. Implement system-wide and multi-staged evaluations (short-, medium-, and long-term evaluations over the next 10 years) for all disasters and crises; and
5. Accreditation of those who respond to disasters and the establishment of a peer-regulating body for disaster organizations must be discussed. Without such a regulating body, the usefulness of monitoring and evaluation systems and reports will continue to be limited.

2. Developing Systems and Capacities for Health Interventions

For the development of improved systems and capacities for health interventions in disasters, there are three essential elements: (A) planning; (B) preparedness; and (C) practice.

A. Planning—Emergency preparedness begins with an emergency plan. National and international bodies should establish time frames for the establishment of these emergency preparedness plans, followed by the assessment of the effectiveness, efficacy, efficiency, cost, and value of these plans. There should be no health facility system without an emergency preparedness plan. Emergency planning for the public health and medical care basic societal functions (BSFs) should not take place in a vacuum. Other BSFs should be involved and the plans built jointly, rather than attempts made at coordinating them together during a disaster or crisis.

Many guidelines for preparing for and responding to emergencies are available. Rather than creating new ones, existing guidelines should be adapted using participatory approaches by health entities at all levels, preferably usintg a "top down – bottom up" process using checklists. The WHO can play an important role in providing leadership in creating or adapting such guidelines.

B. Preparedness—In emergency preparedness, it is important to assess what already has been done and to assess what resources are available, identifying strengths, risks, vulnerabilities, and capacities [absorbing and buffering].

Based on this baseline [pre-event] information, well-defined capacity building should take place using experienced educators/trainers. Capacity building should be continuous and monitored. Public health infrastructures may need to be strengthened to mitigate the damage created by events and to prevent disasters related to the damage. Emergency teams should be trained, prepared, on-call, and ready to respond within and into high-risk areas. The team activities and members should be monitored regularly and kept abreast of new developments. Within the limits of available resources, medicines, supplies, food, water, equipment, and other materials should be stockpiled. Inventory and distribution mechanisms for these supplies must be developed and tested. There should be familiarization with and agreement to standards and measures of accountability—the professionalism of emergency preparedness and responses. It is too late to attempt to develop these standards and measures of recountability once the precipitating event has occurred. Coordination mechanisms, frameworks for and divisions of

responsibilities, clarification of leadership, and followership roles within the health and nutrition sectors and other sectors must be established well in advance of emergencies, recognizing that they may differ from those used during normal periods of operation.

C. Practice—Lessons are not learned until they are put into practice. Within local contexts and capacities, emergency drills must be conducted. These exercises should include the widespread use and dissemination of guidelines and checklists. Routine self-assessment of vulnerability and the potential for response is recommended, adjusting measures based on new knowledge and experience. Rather than reinventing the wheel; whenever possible, available resources should be used more efficiently and more effectively.

Summary
A cycle of planning, preparedness, and practice must be created, and this cycle will build continuously, feeding new knowledge and experiences into planning and improving preparedness.

3. Developing Partnerships and Resourcing for Health Intervention

Partnerships require complementarities of strength to do more and do it better. Partnerships require commonalities of priorities and mutual obligation to identify partners' strengths and limitations without duplication of actions. Innovation and change are brought into partnerships by people for people.

Behaviors
In a partnership, behavior is crucial for people, especially those who are bringing humanitarian aid to other people. Function and dysfunction are linked to behavior, and it is dysfunctional behavior that keeps us from learning the lessons. Dysfunctional partnerships (i.e., non-coordination, duplication, and waste) focus on undue competitiveness, struggle for funds, visibility, power, and proving themselves rather than helping those in need. A strong partnership is one that is "win-win" for everyone; individual partners are developed and nurtured within the partnership.

Leadership and Management
Behavior, however, is not sufficient. Good leaders and good managers also are needed. *Leaders do the right thing. Managers do the things right. An authoritarian directive* is needed if anything of value is to be accomplished. A leader has the capacity to create a compelling vision, translate it into action and maintain the focus, tear down fences, and build bridges with each partner.

Summary
Partnerships between organizations are key elements of responses. Such partnerships require congruent behaviors and competent leadership and management.

4. How Can it be Improved?

A. Establish good partnerships in preparedness, and work together with others on such activities as:
   1. Training drills;
   2. Funding for building capacity within partners, preparedness exercises, maintenance of partners' core competence, mitigation programs in high risk areas for natural hazards;
   3. Transfering knowledge within and between partners to avoid the organizational syndrome of the "eternal student" and "paralysis by analysis"; and
   4. Integrating funding within the broader picture of development.

B. Establish non-conventional partnerships, including:
   1. Involvement and participation of the military and private commercial sector; and
   2. With the media for strategic communications and as a tool for intelligence gathering and dissemination.

World Health Organization (WHO)
The WHO is a leader in providing technical advice, and global health policy, establishing standards, guidelines, recommendations, research, analysis, and liaisons with government and academia. The WHO is a partner to guide and support field operations in an emergency.

Recommendations

Developing partnerships and resourcing for health interventions in disasters can be improved through the following recommendations:

1. Move from talks to action—change is necessary;
2. Develop and adhere to a healthy, highly functional organizational behavior;
3. Negotiate and commit to partnership agreements (Memoranda of Understanding) as implementing tools, with an accountability clause—not as a document for shelving;
4. Identify surrounding leaders and give them a platform; and
5. Identify the operators/implementers, delegate and empower, trust, and let them do what they know best how to do right—without interference.

Summary

Much of what occurred following the Tsunami of 26 December 2004 benefited the stricken population. Yet, there is substantial room for improvement through the implementation of the lessons learned. Such lessons must be converted into actions in order to mitigate the damage from the next event and to enhance our abilities to respond to the damage in an efficient, efficacious, and effective manner at the minimum of costs. All such interventions must be directed to the benefit of the afflicted population within the context of its culture.