

asian disaster management

a newsletter of and for the community of disaster risk management practitioners and development workers

news

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HEALTH EMERGENCY INITIATIVES IN ASIA-PACIFIC



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Asian Disaster Preparedness Center



Editor's corner

Dear Readers,

December 2005 commemorated the memories of the harrowing experience of the Tsunami. One year later, the related facts and figures are still overwhelming. The emergency response capabilities in general, and public health in emergencies in particular, indicate major gaps between response 'plans' and 'realities'. This issue of the ADPC Newsletter, Asian Disaster Management News focuses on **Health Emergency Initiatives** in the region, which calls for a dire and earnest need to place public health emergency management in the essential role it plays of Disaster Emergency Management. It is essential that local response involve all of the key players including government, NGO's, the private sector, the military and the affected communities themselves to address and engage in public health in emergencies. To that end, the ADPC approach to public health in emergencies is a coordinated response of preparing and planning encompassing community preparedness, best practices, training, credentialing, identifying and organizing responders, conducting needs assessment and outreach communications. This edition brings you comprehensive reflections from the region on various aspects of Public Health in Emergencies. I take this opportunity to welcome the new ADPC PHE Team Leader, Mr. Jonathan Abrahams and thank him and his team with the other contributors in bringing out this issue.

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The sixth annual meeting of ADPC's Board of Trustees was held at the Amari Atrium Hotel on October 27, 2005. The meeting was presided by H.E. Prof. Dr. Krasae Chanawongse, Chair and Hon. Mdm. Corazon Alma G. De Leon, Vice Chair of the Board of Trustees of ADPC. The Board was briefed on ADPC's role on the Tsunami and multi-hazard Early Warning System and the enactment of the new ADPC charter.

All Emergencies are Health Emergencies!

Is there any doubt that health lies at the heart of disaster management? People directly affected by a disaster are concerned for their own health, the health of their families and friends, and for their communities. The public hears about disasters from the media who communicate quickly how many people were killed, how many were injured, and how many people's lives have been affected. People less directly impacted may ask themselves: would I know anyone who may have been affected? Or how can I help? At a personal level, people from inside and outside the affected community (or country) feel compassion for the suffering of their fellow human beings, so they donate their time, money and goods to help to make other people feel better. At a professional level, many emergency service personnel will say that their first priority is to save lives. In other words, they are optimizing the health of survivors by conducting search and rescue operations, and then placing survivors in the care of health personnel. Emergency provision of food, water, shelter, clothing, and health care, are all aimed at ensuring people's health. Even identifying the dead and tracing the missing in disasters is a health issue. This provides peace of mind for grieving relatives who need to be reunited with their loved ones whether alive or dead.

Disasters are often described in terms of their impact on people's physical and psychological health. It follows that health outcomes will weigh heavily on the assessment of the performance of those responsible for managing disasters. These may include local leaders, the head of state, village health workers and the Minister of Health. Survivors, relatives of those who died, the public, the media and possibly, the judicial system, will question why lives were lost and why did people suffer so much? What else could have been done? Improved performance in managing the response to disasters is often demanded. There is also a need to broaden the analysis to examine how health effects could have been reduced, or how they should be reduced in the future.

This is the challenge facing organizations, such as ADPC, who are working to build capacity to manage health risks and improve health outcomes in disasters.

ADPC's Public Health in Emergencies Programme

ADPC's Health Programme started in 1998, when courses on Collapsed Structure Search and Rescue (CSSR), Medical First Responder (MFR), Training for Instructors (TFI) and the Programme on Enhancement of Emergency Response (PEER) was offered. Then public health aspects of disaster management were identified as a priority for ADPC in the last major review of the organization. This resulted in the establishment of the Public Health in Emergencies team (PHE) in 2002.

PHE has developed its programme with other teams in ADPC and a range of partners, including the Regional Offices of WHO for South East Asia (SEARO), Western Pacific (WPRO), Eastern Mediterranean (EMRO), UNICEF, Ministries of Health in regional countries, UNDP, Royal Government of Norway, Department of Disaster Prevention and Mitigation in Thailand, International Rescue Committee, World Education International, and the Mailman School of Public Health at Columbia University. Our extensive network of professional colleagues are invaluable contributors to our programme, as they apply their knowledge and experience in the development, delivery and review of joint projects.

The current program offers the following activities:

- Comprehensive regional and national Public Health and Emergency Management in Asia & the Pacific (PHEMAP) courses for public health emergency managers and policy people.

Theme





- Public Health in Complex Emergencies (PHCE) for health personnel working with refugees and internally displaced persons in complex emergencies.
 - Hospital Emergency Preparedness & Response (HEPR) which assists health service managers and medical personnel with health facility planning and managing large numbers of casualties.
 - Disasters and Development for health and development professionals and focusing on integrating health emergency risk management and sustainable development.
 - Disaster Mental Health for mental health professionals with responsibility for planning and managing psychological support programs in disasters.
- Basic Emergency Response Course (BERC) which combines training of trainers and community level training to build health emergency response capability in communities
 - Nutrition of Children and Mothers in Disasters (recently conducted with UNICEF and the Ministry of Health – Iran) which enables participants to train other health staff on managing nutritional needs in disasters.

ADPC is continually evaluating and re-developing these activities to ensure that they deliver contemporary good practice for the benefit of participants, their respective organizations and the communities with whom they work.

Health Emergency Management Initiatives

Every new threat or disaster reveals the extent of challenges that remain in managing the health risks of disasters. While consolidating our existing programme, ADPC is also working with long-standing and new partners on responding to emerging health emergency management priorities in the Asia-Pacific region.

In 2005, ADPC together with SEARO and WPRO developed a specialized programme for the Management of the Dead and the Missing in Disasters (MDM). This edition of the ADPC newsletter carries details on the MDM programme, including the first multi-disciplinary workshop for regional partners and national representatives. This type of activity demonstrates how ADPC has responded to the priorities of our key stakeholders in governments, international organizations, and the community, and provided a programme which they require.

Reviews of recent disasters and assessments of emerging risks facing communities and countries in Asian region (such as avian influenza, pandemic influenza and bio-terrorism) are important to the design of ADPC's future activities. ADPC is currently working with stakeholders to develop a programme addressing communicable diseases, in light of the ever-present threat posed by epidemics. With our experience in disaster preparedness and in public health in emergencies, ADPC is also well-placed to work with WHO and partners on avian influenza control and preparedness for pandemic influenza, including public awareness and health risk communication.

Conclusion

Recent disasters have resulted in significant impacts on people's health and the loss of many lives. They have also highlighted the enormous challenges in health emergency management. Further efforts are required to strengthen capacities in order to reduce the health risks of disasters and improve health outcomes. ADPC's contribution to building capacity will emphasise a systemic approach to managing health risks. This

will include continuing the application of risk management, and providing activities which help to build relationships between disciplines within the health sector, and to integrate the health sector into community-wide disaster management systems.

An emphasis on the public health aspects of disasters is consistent with ADPC's efforts to put communities and people at the centre of emergency management. ADPC looks forward to continuing dialogue and collaboration with our regional partners to ensure that we are responsive to the needs of the region and the people whose health and lives are at risk.

Jonathan Abrahams, Team Leader, Public Health in Emergencies, ADPC

Basic Emergency Response Course (BERC)

The Basic Emergency Response Course (BERC) is the latest generation of ADPC training programs which are aimed at developing national capacities to respond to medical emergencies. BERC is comprised of interactive lectures and practical skills exercises that deal with the proper management of victims who suffer from injuries and sudden illness. It also provides basic knowledge and skills to emergency responders to manage patients safely and effectively during emergency and disasters situations.

The content of BERC has been adapted from the Medical First Responder course which was part of the Program for Enhancement of Emergency Response (PEER) in Asia. It

maintains the interactive and hands-on methodology of the PEER Program and has a strong emphasis on evaluation of course participants' knowledge and skills. The course can easily be modified and tailor fit depending on the needs of the training group.

In 2005, the Public Health in Emergencies (PHE) team at ADPC has implemented two BERC training programs in the Asian region as part of post-tsunami projects supported by UNDP. The first BERC program was conducted in the Maldives on the island of Male in two batches in September 2005. The first batch was composed of 27 participants from the Scouts Association and the Girl Guides of Maldives, and the second batch was composed of 24 participants from the National Security Service, Coast Guard, Police, Fire Rescue and Youth Association from 2005. Each course was conducted for over 8 days.

The second program was part of the End-to-End Early Warning System Project (EWSP) under the community capacity building component supported by UNDP Thailand. The PHE team implemented three four-week BERC instructors' courses for the Department of Disaster Prevention and Mitigation (DPM) of the Royal Thai Government. The participants were composed of personnel from the different Disaster Prevention & Mitigation Academy (DPMA), DPM Regional Centers, Municipalities and Rotary Club from the southern provinces of Thailand that were affected by the December 2004 tsunami. A total of 72 participants attended the BERC Instructors' Courses. In 2006 the trained instructors, supported by ADPC, are expected to conduct BERC training in 2006, communities in southern Thailand.

John Abo, Technical Manager, Public Health in Emergencies, ADPC

The ADPC PHE Team

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Mr. Anucha Mokkhavesa, Director General, Department of Disaster Prevention and Mitigation (DDPM), Thailand surveying the equipments used at the course

Public Health and Emergency Management for Asia and the Pacific



In 2001, the WHO Regional Offices for the Western Pacific (WPRO) and South-East Asia (SEARO) collaborated with the ADPC and the Japan International Corporation for Welfare Services (JICWELS) to develop an international programme to respond to a perceived need for staff training at ministries of health. Because of its regional focus, the programme was called Public Health and Emergency Management in Asia and the Pacific (PHEMAP). PHEMAP 1 was hosted by ADPC in March 2002, followed by PHEMAP 2 in October 2002, PHEMAP 3 in October 2003, PHEMAP 4 in April 2004 and PHEMAP 5 in July 2005. PHEMAP 6 will be conducted in 2006. Member States from the

Western Pacific and South East Regions that participated in the training courses include: Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, the Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Nepal, Papua New Guinea, the Philippines, Samoa, Sri Lanka, Timor Leste, Vanuatu and Viet Nam. PHEMAP is designed as a series of integrated courses covering the technical, managerial, and policy aspects of emergency management in the health sector. The programme offers customized courses targeted at the needs of the different levels of health sector managers, from national (policy and guidelines) to provincial (programme management) and local (implementation) levels, as well as at the needs of directors of institutions such as major hospitals and academic institutions (training and education). Using evidence-based criteria, the training curriculum focuses on:

- mass casualty accidents, floods, storms, and earthquakes;
- long-term post-disaster public health needs and the public health needs of displaced peoples;
- policies and guidelines for mass casualty management and hospital planning; and
- pre-hospital knowledge and skills.

One of the objectives of the interregional PHEMAP courses described above was for participants to develop **national PHEMAP courses** for their respective countries. The Philippines offered its first national PHEMAP course in Manila. A training committee in the Philippines reviewed the inter-regional courses and adapted the curriculum to emphasize development of regional and hospital disaster preparedness plans, forensic medicine, and mass casualty management. Two field visits were added, one involving rapid health assessment. Thirty-eight participants from all over the country and three international observers attended the two-week course. Viet Nam conducted its first national PHEMAP course in May 2003 and Papua New Guinea its first course in August (2003). Cambodia and Fiji have already conducted their national courses (2005). Sri Lanka held the first national PHEMAP course from the South East Asia region in December 2005, while China will be having its first one in February 2006. Major achievements of PHEMAP:

- PHEMAP has contributed to the improvement of national policies, plans and procedures for emergency management by the health sector. The Philippines has developed its policy on health emergency management and guidelines on Mass Casualty Management. Viet Nam now has an improved reporting system with corresponding report forms.
- The PHEMAP programme has contributed to the formation of informal networks among the course graduates. This was valuable in establishing links especially during the recent major disasters in the regions (for example, the Asian tsunami).
- National PHEMAP courses have been developed and implemented by former PHEMAP interregional course participants.
- A health emergency handbook called the Pocket Emergency Tool has been developed for field health staff in the Philippines. Provincial health emergency plans are being regularly reviewed and updated in the various provinces. This handbook is also being translated into Khmer for distribution to field workers in Cambodia.

Note: This article is based on the WHO Regional Director's Report, 2005

Dr. Arturo M Pesigan, Technical Officer, Emergency and Humanitarian Action, WHO Regional Office for the Western Pacific. E-mail: pesigana@wpro.who.int

Preparing Health Facilities for Disasters in Cities: A Health Emergency Initiative of the WHO Centre for Health Development

Vulnerable populations in vulnerable health systems

Hazards may often be natural, but the vulnerability of health systems to disasters is not. Disasters damage health facilities – hospitals, primary health care centres, clinics and nursing homes. Services are found disrupted right at the time they are most needed. Threatened populations face heightened health risks for a number of reasons including inadequate health services due to damaged health infrastructure.¹

Disaster risk reduction

Disaster risk reduction has been a growing focus of research and debate over recent years. The view that disasters are temporary disruptions to be managed only by humanitarian response, or that their effects will be reduced only by some technical intervention, has long been replaced by the insight that they are intimately linked with sustainable development and should be seen from the perspective of a disaster-development continuum. Risk and vulnerability reduction are crucial in reducing the negative impacts of hazards towards the achievement of sustainable development.²

The health sector as a disaster risk reducer

The World Conference on Disaster Reduction (WCDR) held in Kobe, Japan in January 2005 placed human health, safety and security high on its agenda, in the recognition that health is the ultimate goal of disaster risk reduction. Health is such a critical resource in disaster risk reduction that without it or with less of it, suffering, injuries and death will remain unacceptably high.

The health sector has significant disaster risk reduction requirements. Health facilities, for example, must remain functioning before, during and, most of all, after disasters. Countries must have a health sector vulnerability reduction policy in order to reduce risks. Hospitals and water systems should be made resistant to the effects of natural hazards and should remain functional in any phase of the disaster cycle in order to save lives.

Reducing the vulnerability of health facilities

Earthquakes and multi-country tsunamis are natural events that can produce large numbers of casualties, and serious damage to health infrastructure and lifelines. Although the vulnerability of health facilities increases progressively over the years, it is possible to reverse this trend.

For instance, given the limited availability of resources, particularly of the health sector, countries in Latin America and the Caribbean have been forced to develop efficient and effective strategies to stem the loss of health assets in the wake of disasters. To this end, a number of strategies have been explored over the course of the last two decades and there has been a good deal of success, primarily on a pilot basis. Countries learned that with current knowledge, existing resources, and a strong political commitment, it is possible to achieve visible results. In the Asia-Pacific region, Japan's experience of rising from the Great Hanshin Awaji Earthquake in Kobe, 1995 has been phenomenal. The tremendous reconstruction and development efforts made over the last decade restored hope and have helped create a society where people can live safely and with peace of mind.³ In short, reducing the vulnerability of health facilities so that these remain safe and functional prevents deaths and contributes positively to disaster management operations. The benefit of making health systems intact, effective, efficient and safe helps contribute to local and national security extending far beyond the ministry of health to all sectors of society and the global community.

Preparing health facilities for disasters in cities

The impacts of disasters are compounded in areas with high population densities such as cities and large urban conglomerations, exemplified most sharply by slums. People living in these conditions are vulnerable as they are more exposed in terms of social, economic, physical and environmental risk factors. Health facilities in urban areas with high population densities play a special role in reducing risks, containing and responding to emergencies and disasters. Hospitals, for example, are more than just another critical facility; they are powerful symbols of social and economic progress, occupied 24 hours a day and 7 days a week by a highly vulnerable population that cannot be evacuated easily, essential for the surveillance and control of potential outbreaks

of disease and key in treating mass casualties caused by disasters.⁴ On the other hand, health facilities that are affected or exposed to risks, emergencies and disasters and are unprepared may pose additional and more serious risks to the communities or cities they serve.

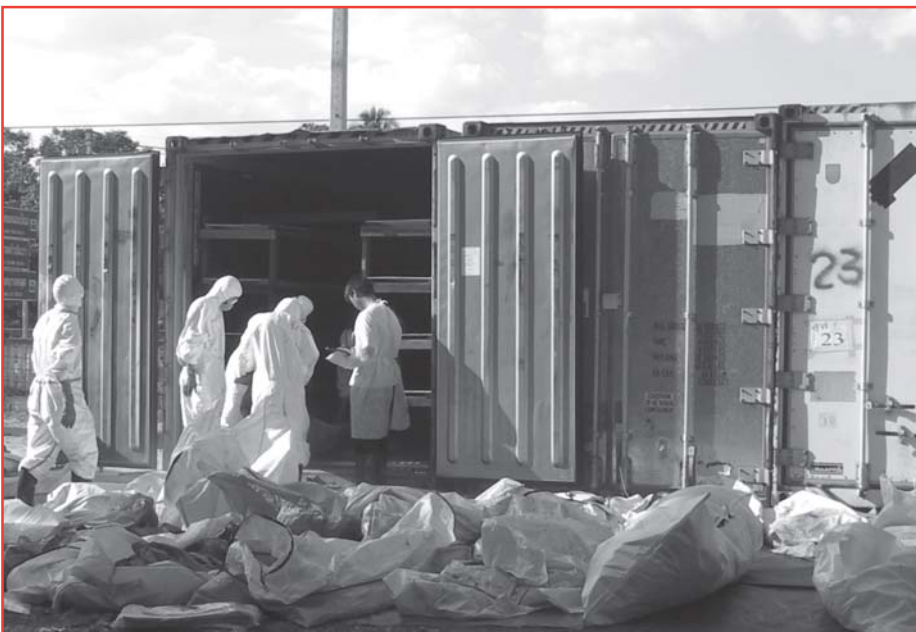
The WHO Centre for Health Development (WHO Kobe Centre/WKC) considers emergency preparedness and response as one of its areas of work. In 2006-2007, it plans to implement a priority project entitled "Preparing health facilities for disasters in cities."⁵ The project hopes to contribute to the generation and dissemination of scientific knowledge on how priorities for disaster reduction actions using the disaster risk reduction framework can best be embedded in emergency preparedness policies and programmes for selected health facilities and eventually throughout health systems. Health facilities, in this case, include but are not limited to hospitals, primary health care centres, nursing homes and day care centres. The disaster risk reduction framework⁶ adopted and endorsed by more than 160 Member States at the WCDR provides the framework by which the project would be operationalized. It identifies, integrates and harmonizes five core priority areas: 1) political commitment or governance; 2) risk analysis; 3) knowledge management and education; 4) risk management; and 5) preparedness for effective response. Its expected outcome is the substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries.

One of the key activities in reducing underlying disaster risk factors is to promote the goal of "hospitals safe from disaster" by ensuring that all new hospitals are built with a level of resilience that strengthens their capacity to remain functional in disaster situations and implement mitigation measures to reinforce existing health facilities, particularly those providing primary health care. Within the overall purpose of the priority project (to reduce disaster risks to health), the specific objectives, in selected settings, are: 1) to conduct a situational analysis on the preparedness of selected health facilities to withstand and respond to disasters; 2) to characterize the features and attributes of effective health facility disaster preparedness policies and programmes; and 3) to advocate effective health facility disaster preparedness policies and programmes within the context of health systems development using the disaster risk reduction framework.

Future Directions

Based on the experience gained in this initiative, we hope to develop activities in collaboration with WKC partners to transfer the lessons learned to other country and city settings in future, working together towards "healthier people in healthier environments."⁷

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- ¹ Know Risk, United Nations, 2005.
- ² Living with Risk: A Global Review of Disaster Reduction Initiatives, United Nations, 2004.
- ³ The Great Hanshin-Awaji Earthquake: The Report of the 10-Year Reconstruction Overall Verification and Recommendations, The Office of the 10th year Restoration Committee, 2005.
- ⁴ Safe Hospitals: A Collective Responsibility, A Global Measure of Disaster Reduction, Pan American Health Organization, 2005.
- ⁵ WKC Proposed Plan of Work 2006-2007, WHO Centre for Health Development, 2005.
- ⁶ Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters.
- ⁷ Health in Development: Healthier People in Healthier Environments, a Proposed Research Framework for the WHO Centre for Health Development, 2004.

The Management of the Dead and the Missing in Disasters: A pilot activity organized by WHO and ADPC

The earthquake and tsunami of December 2004 showed that the management of the dead and the missing (MDM) is a major component of the overall management of consequences of disasters. Immediate actions must be taken in the aftermath of disasters, such as the search for human remains, identification of dead bodies, social tracing for relatives, and preparations for returning corpses to the family. MDM can last for many months. More than six months after the tsunami many dead bodies were still not identified and relatives were still looking to retrieve loved ones. Many problems had to be solved on an ad hoc basis due to the lack of preparedness and response plans. In most of countries of Asia and the Pacific the problem of MDM had been given little attention so that countries were not ready to cope with this burden. The lack of preparedness was not limited to disaster victim identification but extended to repatriation of remains, and psychosocial support for relatives. The international dimensions revealed their complexity in this disaster. Managing the psychosocial consequences created by the large number of dead and the missing from other countries and cultures were major challenges for the affected countries. None of them had planned for or had the capacity to manage this problem fully.

In February 2005, the WHO South-East Asia Regional Office and Western Pacific Regional Office together with the Public Health in Emergencies Team at ADPC developed a conceptual framework for improving the capacity of countries to manage the dead and the missing in disasters. The goal of the program is to enhance a multi-sectoral approach to the public health management of the dead and the missing in countries affected by mass-fatality natural disasters and to contribute to the creation of a regional network of experts for international local assistance, sharing of experience and promotion of training programs at national and inter regional levels. The program has been articulated in three phases:

Phase I: Conduct of a pilot international MDM workshop with the following aims

- to share the lessons learned,
- to identify the training needs at international and national levels,
- to promote inter-sectoral cooperation and coordination at country level.

Phase II: Development of several focused training activities and the creation of the MDM Network for Asia and the Pacific

Phase III: further development of the Network and the continuation of training workshops.

The first international MDM workshop in October 2005 obviously covered a gap. This workshop was attended by experts from various ministries and organizations, such as Ministry of Health, Ministry of Justice, Police, and Army, from nine Asian countries. This multi-sectoral participation and cooperation is certainly a major positive element for the future of the program, as MDM requires the active cooperation of various ministries, NGOs and voluntary organizations and the mobilization of experts from many disciplines. The intersectoral cooperation in many countries faced great difficulty that could have been anticipated provided this component had been discussed in advance. All participants were in favor of renewing this international workshop in order to enhance the capacity at national level by having more internationally trained experts in each country as soon as possible. The participants also warmly recommended that MDM program be developed to Phase II and Phase III without delay. Following the success of this workshop, WHO and ADPC plan to conduct another workshop in 2006 and to expand the program to Phase II and Phase III implementation.

Dr. Marcel Dubouloz, Senior Medical Consultant, HDCA, and former Director, Public Health in Emergencies, ADPC, E-mail: hdca@bluewin.ch

*H.E. Prof. Dr. Krasae Chanawongse,
Dr. Suvit Yodmani and
Dr. Marcel Dubouloz with the participants
at the closing ceremony.*



Reflections on the Tsunami

I was celebrating the birth of a new grandchild and the holiday season at home in the United States, when I received a phone call from a WHO officer on 26 December 2004. He informed me of the terrible disaster in South East Asia. I returned to Thailand, and the next few months of work were dominated by the tsunami. Now, almost a year later, I reflect and offer these observations which come from my own experiences.



- First and foremost, the tsunami clearly demonstrated *the critical need for and importance of emergency preparedness*. Thailand was well prepared to respond to the emergency and was able to activate efforts in a short time. Previous investments in field epidemiology training, emergency preparedness training, and capacity-building in other areas paid off.

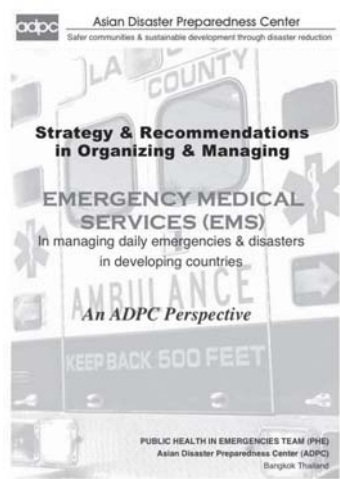
If a country does not have all the resources to respond adequately to an emergency and must depend on external support, emergency preparedness will place them in a better position to be able to inform outsiders what is needed, when it is needed and how much is needed. This will help to avoid unneeded – and sometimes redundant – donations of services and goods. It will help them take control, rather than be controlled.

- The tsunami showed the *importance of local community preparedness*. As is true with all emergencies, the first people able to respond to the disaster caused by the tsunami were the members of the affected community. Emergency preparedness activities developed by and within a community are especially effective. I remember one story from Indonesia. The people of the community had learned a simple song about tsunamis. The song warned them that if ever the water is drawn back in the ocean, they should run for safety. When it happened in this community in December 2004, the people ran to safe ground, and no one perished.
- While emergency donations are appreciated and needed, there is a tendency to support the publicized “crisis of the hour” while *other health needs receive far less support*. One major NGO called for an end to donations for the tsunami. They felt they had received a sufficient amount of resources to use for tsunami-related interventions and recognized that there were great needs in other areas that also needed to be addressed. In addition to the damage and loss of lives caused by the disaster, there is the possibility of an undetermined increase in morbidity and mortality when attention and resources are directed away from existing problems to the new disaster. This may need to be calculated in the overall cost of the disaster.
- *Politically sensitive populations are especially vulnerable* in these disaster situations, and they may need to receive special attention. In each of the countries affected by the tsunami, there were displaced people, migrants, or other sub-marginal populations. From a public health and humanitarian perspective, it is most important that these people receive needed services. In Thailand a special mission of UN agencies and government representatives reviewed the health needs of the migrant population in the tsunami-affected area. This resulted in special initiatives, in collaboration with the government, to target the needs of this vulnerable population.
- From the beginning a *strong coordinating mechanism for NGOs and international groups* is needed. It would be very helpful to have, before the disaster occurs, a plan in place as to how this coordination will be done at both the central and local levels and how external activities will link with the government’s. An assessment visit to the tsunami-affected area found several NGOs working in the same locality but unaware of what each other was doing. As a result of this finding, a coordination center for NGOs in Phang Nga Province was established. This center links with the Provincial Health Office and has operated very successfully. Some organizations assumed a coordination role on their own during the tsunami. While they did an excellent job of coordinating targeted organizations, larger scale coordination is also needed to avoid duplication, to assure as many needs as possible are met and to respect the local culture and population.

A grief expert once told me that you begin to recover from any loss when you begin to recognize some of the benefits that emerged from that loss. Despite the terrible damage and destruction and loss of lives caused by the tsunami, it has brought renewed attention to the importance of emergency preparedness and, hopefully, this will result in decreased mortality and morbidity in future disasters.

The tsunami provided an amazing demonstration of how people were willing to set aside differences and reach out to others, recognizing our common humanity. The response to the tsunami disaster showed our great capacity for helping one another and working together. If this same capacity is directed towards emergency preparedness efforts, the next disaster may result in fewer deaths and destruction.

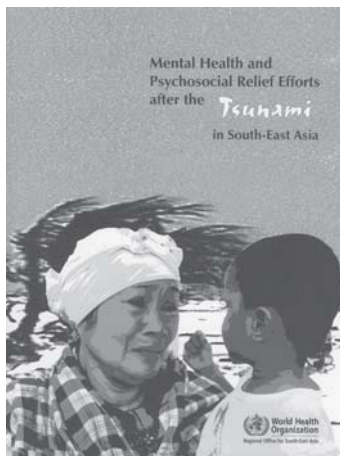
Dr. Elisabeth Emerson joined the World Health Organization (WHO) Thailand Office as the Border Health Program Officer for the Thai/Myanmar Border in 2001, having previously worked in emergencies in Bosnia-Herzegovina and Indonesia. Elisabeth's responsibilities also covered health emergency management and humanitarian activities, so when the tsunami struck the shores of southern Thailand in December 2004, she played a central role in the WHO Thailand Office's response and recovery activities.



Strategy & Recommendations in Organizing & Managing Emergency Medical Services (EMS): An ADPC Perspective

*Public Health in Emergencies Team
Asian Disaster Preparedness Center*

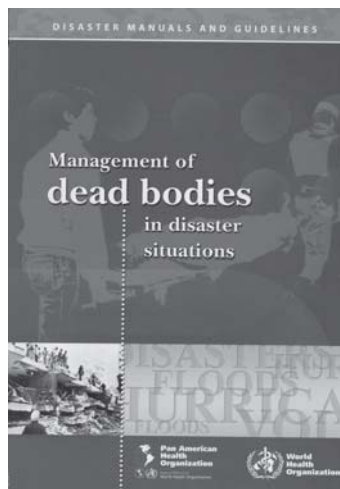
The publication is a comprehensive approach to deal with the creation and/or the strengthening of existing emergency medical services. It provides insight into selecting priorities and in developing an action plan that leads to sustainability of the system and its integration into the overall organization of the services offered by the health sector. It stresses that EMS is a wider concept that includes elements of mental health, psycho-social well-being and recovery after major emergencies. It is community based service that are governed by the conceptual framework of risk management.



Mental Health and Psychosocial Relief Efforts after the Tsunami in South-east Asia

*World Health Organization,
Regional Office for South-East Asia, New Delhi*

This publication, compiling the experiences of the five most-affected countries in the South-East Asia Region, provides valuable insights on how best to meet the mental health and psychosocial needs of disaster-affected communities.



Management of Dead Bodies in Disaster Situations

*Pan American Health Organization
World Health Organization*

Immediately following the onset of a disaster, actions and resources focus on rescuing and treating the survivors, repair and maintenance of basic services and finally the recovery and management of bodies. This disaster manuals and guidelines series, No. 5, provides technical information that will support the correct approach to handling dead bodies.

Bookmark



Public Health Aspects of Managing the Dead and Missing (MDM) after Natural Disasters

After most natural disasters, fear of disease encourages communities, local authorities and governments to rapidly dispose of bodies without identification. The consequences include psychological distress for survivors and legal problems for inheritance, compensation, insurance claims or re-marriage of spouses. Diplomatic tensions may also occur when foreign tourists are involved as in the case of the earthquake and tsunami in December 2004.

There are several reasons why the bodies of victims of natural disasters are mistakenly seen as a public health risk. Repulsion to the smell of decay may be part of a primordial "protective mechanism" against disease. Many people, including health professionals, also mistakenly extrapolate the disease risks from individuals who die from infectious disease to victims of natural disasters, who instead die from trauma and drowning. These fears tend to be reinforced by journalists, partly because they too are misinformed, but also because the news media tend to gravitate towards the sensational.

A risk assessment based on information about infectious agents in cadavers and exposures for professionals who routinely handle bodies (morticians, ambulance workers etc) showed that disease risks are generally low. This is because victims of natural disasters die from trauma and are unlikely to have epidemic-causing infections such as cholera. The risk of infection is further reduced because infectious agents are unable to survive for long in the human body after death. Nevertheless, no risk can be reduced to zero, and even though the risk of disease for general public is negligible (because they do not handle dead bodies), it is possible for faecal material from dead bodies to contaminate drinking water supplies. However, common gut pathogens do not survive long in the environment and present little risk if the body has been decaying for a couple of days in a tropical climate or has been in the water. Therefore, standard measures for the disinfection of drinking water following disasters will be sufficient to protect against any potential faecal contamination from dead bodies. The risk for individuals handling dead bodies in disasters, such as military personnel, rescue workers and volunteers, may be greater, but can also be reduced considerably. This group of workers may be exposed to chronic infections in the deceased, including gastrointestinal diseases, hepatitis B, hepatitis C, HIV and tuberculosis (TB). Use of simple hygiene measures such as wearing gloves and washing hands with soap and water are effective measures to reduce potential infection from these agents.

Disposal of bodies should respect local practice and custom where possible. Cremation is impractical where there are a large number of bodies, as it requires a lot of fuel. It should also be avoided when victims have not been identified. Instead burial is likely to be more appropriate. Mass graves are not recommended on public health grounds. However, where required for logistical reasons, a trench should be dug so that each body can be laid separately with a clear marker placed above ground. This will facilitate any efforts to exhume and identify the bodies in the future.

There is little evidence of groundwater contamination when burial is done properly. For new large burial sites, the water table should be at least 1.5-2 metres deep.

Depending on soil conditions, the site should be at least 250 metres from any well, borehole or source of drinking water, depending on soil conditions and local topography. As emergency relief workers we should not add to the distress of affected communities by inappropriately handling and disposing of the victims. An initiative supported by PAHO/WHO and ICRC had drawn together experts from several regions, including Asia-Pacific, to develop a field manual for first responders. The manual contains practical recommendations based on field experience and draws on lessons from the tsunami disaster in 2004. It is hoped that the manual will be published in June 2006.

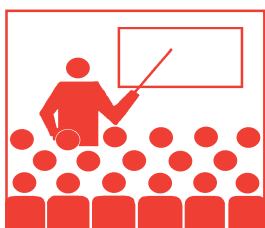
Copies of the original article 'Infectious disease risks from dead bodies following natural disasters' are available free from the Pan American Journal of Public Health at http://publications.paho.org/english/dead_bodies.pdf. An accompanying editorial is also available at http://publications.paho.org/english/editorial_dead_bodies.pdf.

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Oliver Morgan, Epidemiologist, The London School of Hygiene and Tropical Medicine and the Health Protection Agency, United Kingdom. E-mail: omorgan@bigfoot.com

Recommendations for managing the dead following natural disasters

- Use of gloves when handling bodies, masks are not necessary or useful
- Disposal or disinfection of used gloves
- Avoid cross contamination of personal items
- Wash hands after handling bodies and before eating
- Disinfection of vehicles and equipment
- Use of body bags, especially for badly damaged bodies
- Hepatitis B vaccination
- Disposal of bodies requires no special arrangements such as disinfection
- New burial areas should be sited at least 250 m away from drinking water sources, with at least 2m above the watertable



| Course Title | Date | Venue |
|--|---------------------------------------|------------------------|
| Training Resource Group | | |
| • Damage and Needs Assessment | 27-28 Feb | Thailand |
| • Crisis Management | 14-16 Feb | Thailand |
| • Crisis Management | 6-8 Mar | Thailand |
| • Disaster Management | May | Afghanistan |
| • Disaster Management | 13-17 Mar | Karachi, Pakistan |
| • Crisis Management | 21-22 Mar | Abbottabad, Pakistan |
| • Crisis Management | 23-24 Mar | Mansehra, Pakistan |
| • Crisis Management | 28-29 Mar | Muzaffarabad, Pakistan |
| • Earthquake Vulnerability and Multi- Hazard Risk Assessment: Geospatial Tools for Rehabilitation and Reconstruction Efforts | 13-31 Mar | Peshawar, Pakistan |
| • Community Based Disaster Risk Management | 17-28 July | Thailand |
| • Flood Disaster Risk Management | 16-27 Oct | Thailand |
| • Disaster Management Course | 6-24 Nov | Thailand |
| Climate Risk Management | | |
| • Climate Forecast Information for Agriculture Risk Management | 1 -7 Feb | Dhaka |
| • Climate Information for Media Professionals | 1-7 Mar | Jakarta |
| • Climate Forecast Information for Agriculture Risk Management | 7-15 May | Indramayu |
| • Climate Information for Disaster Risk Management | 17 May-2 Jun | Bangkok |
| Urban Disaster Risk Management | | |
| • Earthquake Vulnerability Reduction for Cities | Mar | Chittagong, Bangladesh |
| • Governance and Disaster Management | Sept | Thailand |
| • Earthquake Vulnerability Reduction for Cities | Nov | Thailand |
| • Damage and Loss Estimation for Risk Management | Mar | Sri Lanka |
| • Damage and Loss Estimation for Risk Management | Apr | India |
| • Damage and Loss Estimation for Risk Management | Jun | Indonesia |
| • Trial Run for Distance Education Course on "Multi-hazard risk assessment" | 25 Apr-12 May | Netherlands & Bangkok |
| Community Based Disaster Risk Management | | |
| • Training on Advocacy for Institutionalizing CBDRM in Government | Apr | Bangkok |
| Public Health in Emergencies | | |
| • Talk on Avian Influenza: Public Health Implications | 7 Feb | Thailand |
| • Seminar on: | | |
| • Community Hospital Preparedness Program | | |
| • Presentation on lessons learned of the Hurricanes Katrina & Rita | 22 Feb | Thailand |
| • Community-Based Basic Emergency Response Course (C-BERC) | 22-24 Feb, June, July, Aug, Sept, Oct | Thailand |
| • Public Health in Emergencies Management in Asia and the Pacific Curriculum Review | 20-24 Mar | Thailand |
| • Hospital Emergency Preparedness and Response Curriculum Review | 27-31 Mar | Thailand |
| • Public Health in Complex Emergencies (PHCE-5) | 8-20 May | Thailand |
| • Community-Based Psychosocial Course (CBPS-2) | 12-16 Jun | Thailand |
| • Management of the Dead and the Missing in Disasters (MDM-2) | 3-7 July | Thailand |
| • Public Health in Emergencies Management in Asia and the Pacific (PHEMAP-6) | 7-18 Aug | Thailand |
| • Hospital Emergency Preparedness and Response Course (HEPR-4) | 18-22 Sept | Thailand |
| • Nutrition in Disasters Course (NDC-1) | 9-20 Oct | Thailand |
| • Disasters and Development Course (D&D-2) | 13-24 Nov | Thailand |

This section highlights the initiatives, developments and events in the quarter October-December 2005 from ADPC,s teams, the Office of the Executive Director (OED), Disaster Management Systems (DMS), Information Knowledge Management (IKM), Urban Disaster Risk Management (UDRM), and Community-based Disaster Risk Management (CBDRM).

International Day for Disaster Reduction Celebrations in Asia and the Pacific

The International Day for Disaster Reduction in Thailand was jointly organized by ADPC and UNESCAP on the 12 October 2005 in Bangkok, Thailand. The day was marked by a panel discussion on “Reducing Disaster Risk using Micro-finance and Safety Nets and Post Tsunami Rehabilitation and Reconstruction”. A public awareness campaign through a poster exhibition was also part of the celebration. The annual UNISDR Sasakawa Award for Disaster Reduction was a highlight of the day.

ADPC Tsunami Poster Competition recalled Fear, Hope and Compassion

To commemorate the memories of 26 December 2004, ADPC organized a POSTER COMPETITION for the student community in Bangkok on the Friday, 16 December 2005 at Chulalongkorn University. The aim of the event was to help raise awareness among the youth to enhance disaster risk management knowledge and skills and to reduce the impact of disasters upon communities. To launch the event, a Press Conference was called on the 16 November 2005.



Dr. Suvit Yodmani with Dr. Bhichit Rattakul, Mr. Hakan BJORAKMAN from UNDP, Khun Tulsathit Taptim from the Nation, DPT Director General and the winners

ADPC organized the event with Department of Public Works and Town & Country Planning (DPT), National Housing Authority (NHA), Chulalongkorn University, UNDP, Tourism Authority of Thailand (TAT), Bangkok Metropolitan Authority (BMA), Department of Disaster Prevention and Mitigation (DDPM), Mahidol University, Thammasat University and The Nation. The event was widely acknowledged by the media.

Cash prizes worth 250,000 Bht were awarded to the winners in two categories, University and School levels. In the University category, the first and second prizes were bagged by students from Chulalongkorn University. In the High school category, the first prize went to Satee Witthaya School and the second prize to Satee Srisuriyothai School. In addition, seven consolation prizes were awarded in each category.

The DMS team participated in the **Regional Consultation Meeting** on the Program Implementation Plan (PIP) of MRC’s Flood Management and Mitigation Program (FMMP) from 7-8 November 2005 in Siem Reap, Cambodia. The objective was to present the PIP of the MRC’s FMMP to the regional audience including the National Mekong Committees, partner organizations, National Disaster Management Offices (NDMOs), donors and concerned line agencies.

The DMS team participated in the **Workshop on Strengthening the Resilience of the Local Communities in Coastal Areas to Water Related Natural Disasters**, organized by the Ministry of Foreign Affairs in Denmark and UNISDR in Copenhagen, 16-18 November 2005. The DMS team presented country papers on “Water Related Natural

Disasters in Coastal Areas” from Bangladesh, India, Indonesia, Malaysia, Sri Lanka and Thailand, in consultation with the NDMOs of these countries.

The DMS team participated in the **12th session of the Inter-Agency Task Force on Disaster Reduction** organized by UNISDR from 22-23 November 2005 in Geneva, Switzerland, in supporting nations and committees in the implementation of the Hyogo Framework.

The DMS team participated in the “**Expert Group Meeting on Social Aspects of Integrated Flood Management**” organized by World Meteorological Organization (WMO) from 25-26 November 2005 in Geneva, Switzerland after the submission of the paper on “Social Aspects of Integrated Flood Management: Enhancing Stakeholders Engagement”.

A provincial training course on “**Planning and Implementation of Flood Preparedness Programs at the Provincial and District levels**”, for members of the Provincial Committee on Disaster Management in Kratie province of Cambodia was conducted from 28 November to 1 December 2005.

Two provincial consultative workshops on **Development of Flood Preparedness Plans** in Prey Veng province of Cambodia were organized in December 2005, under the “Flood Emergency Management Strengthening (FEMS)” Project implemented in collaboration with MRC and funding support from GTZ.

The implementation of the 14 months project on “**the Community Self-Reliance and Flood Risk Reduction**” in Cambodia was commenced in October 2005 by ADPC with partnership from Hatfield. The technical assistance will be delivered in two phases, with Phase 1: Strategy Development and Phase 2: Capacity Development. The key executing agency in Cambodia is the Ministry of Water Resources Management (MOWRAM). The objective is to ensure that “The improved participatory flood (and drought) risk management strategy for targeted vulnerable communities in the lower Mekong River basin provinces of Cambodia is adopted by the key stakeholders”.

The National Media Orientation Workshop at Dili, Timor Leste on 6 October 2005 stressed the role of the media for effectively supporting communities in disaster risk management by raising people’s awareness. The workshop identified strategies for the involvement of media in disaster risk communication and promoting community action for disaster risk management.

The Planning Meeting on 11 October 2005 in Bangkok brought together the chairpersons of the four regional committees - Typhoon Committee, ASEAN Committee on Disaster Management (ACDM), Haze Technical Task Force, and Mekong River Commission to plan for the Joint Meeting to be held in the first quarter of 2006.

The National Workshop on CBDRM Standards in Vientiane, Lao PDR from 13-15 October 2005 was organized in five project countries of PDRSEA for developing criteria on CBDRM good practices and impact indicators. Criteria (and indicators) for assessment of vulnerability at family and community levels were also developed in the workshop.

The National Consultation Workshop in Indonesia from 16-18 October 2005 aimed at the formation of strategies to strengthen existing partnerships and to develop new ones amongst the government ministries and departments, National Disaster Management Offices (NDMOs), relevant NGOs, DIPECHO partner organizations, UN agencies, donors and community leaders from disaster prone regions. With the inputs from multiple stakeholders, a framework was also developed on institutionalizing CBDRM in the country.

The Donors Workshop to Integrate CBDRM into Donor Policy and Planning took place on 11 November 2005, Bangkok. The objectives of the workshop were to mobilize

donor support for the national strategies on integrating CBDRM into the socio-economic process; review current status on mainstreaming Disaster Risk Reduction, experiences and challenges; learn from and establish synergies with similar on-going efforts, and explore possible tools and opportunities to facilitate mainstreaming in donor policies and programming.

The National Workshop on CBDRM Standards in Vietnam from 27-28 October 2005 in Hanoi was organized for five project countries of PDRSEA for developing criteria on CBDRM good practices and impact indicators for CBDRM projects.

The Regional Workshop on Standardizing Training Curriculum for Local Government Officials in Southeast Asia was held from 28-30 November 2005, Bangkok. CBDRM practitioners from partner countries produced a manual for training on various aspects of CBDRM, focusing on training Local Government Officials and implementation of CBDRM projects.

The seminar and roundtable on Business and Disaster Preparedness in Vietnam on 1 December 2005, Hanoi, discussed the importance of identifying risk and planning action to ensure safety of businesses, employees and the communities; and to identify the potential resources from the private sector for gearing up the community-based disaster management initiatives. Business representatives and disaster management experts from Philippines, India and Thailand provided an orientation on the benefits of disaster preparedness in the business sector. It also discussed the strategies and actions that the private sector can adopt to secure sustainable economic development.

The National Media Orientation Workshop was held in Indonesia on 22 December 2005, Jakarta to orient the media (print, radio and TV) about Community Based Disaster Risk Management. The workshop stressed the role of the media for effectively supporting communities by raising people's awareness about disaster risks, vulnerabilities, issuing early warning, and the actions that people could undertake to reduce risks and vulnerabilities.

The mid-term workshop for CASITA II was held at Hanoi, Vietnam on the 12 November 2005 to review the status and progress of the project which included curriculum development and joint research activities; the distance education course and its delivery and planning for the year ahead. The workshop was attended by the implementing organizations, ADPC, ITC, The Netherlands and Bonn University, Germany along with the representatives of the four partner universities from India, Indonesia, Thailand and Sri Lanka.

A workshop for curriculum development of the distance education course on "Multi Hazard risk Assessment" took place in Hanoi, Vietnam from 14-25 November 2005. This workshop presented a outline of the distance education course on "Multi-hazard risk assessment" for evaluation by experts in training in the field of Geo-Information for Disaster Management. About 35 participants, mostly senior lecturers representing universities under CASITA network, attended the workshop.

The UDRM team conducted three training courses for the government officials at the commune, city, district and provincial level under Center for International Studies and Cooperation (CECI)-UNDP project on Water Disaster Risk Reduction from 14-19 November 2005 at Danang City and Binh Dinh Province. They were:

1. Training on Land Use Planning for Disaster risk management, 14-15 November 2005 at Danang City
2. Training on "Developing a strategy for Institutionalization of Community Based Disaster Risk Management within the city administration of Binh Dinh and Danang", 16 November 2005, Danang city
3. Training on Damage and Loss estimation, 18 November 2005, Qui Nhon, Binh Dinh province

ADPC Public Health in Emergencies Activities, May-December 2005

The World Education (WEI) and the International Rescue Committee (IRC) worked with ADPC to prepare the two-week residential **Public Health in Complex Emergencies (PHCE)** Training Program. The program was conducted in Bangkok from 9-21 May 2005. 30 participants representing 13 different countries, namely Bahrain, Egypt, India, Indonesia, Myanmar, Maldives, the Philippines, Sri Lanka, Sudan, Spain, Uganda, U.S.A., and Yugoslavia participated in the program. The participants were public health practitioners, psychosocial sciences and health professionals, doctors, nurses, managers of programs.

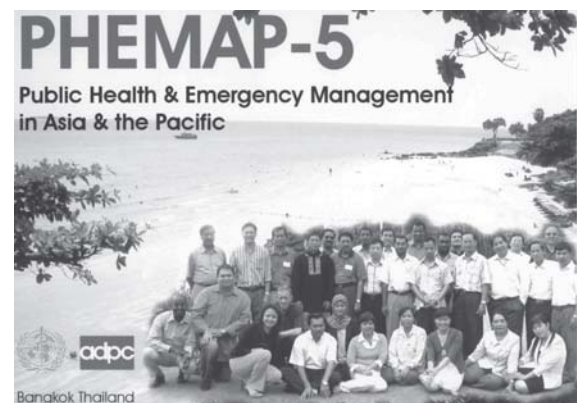
The diversity of the participants coming from various disciplines, professional background and various parts of Asia and the world was certainly a great opportunity for cross-fertilizing and sharing of experiences. The training materials were prepared by WEI, which included topics such as Communicable Disease, Epidemiology, Nutrition, Protection and Security, Reproductive Health, and Psychosocial Issues. ADPC prepared the handouts, reference documents, and the participants' manuals. At the end of the course, the participants received a CD-Rom containing all the material (notes, PPT's, etc.) contained in the facilitators' handbook in its original version.

The first national training course on the **Management of Public Health Risk in Disasters and Complex Emergencies in Iraq (MPHR-Iraq)** was conducted in Amman, Jordan from 14-25 June 2005. The course was carried out in collaboration with the WHO Eastern Mediterranean Regional Office (EMRO), the WHO-Iraq Office, the Ministry of Health (MoH) Iraq and the Asian Disaster Preparedness Center (ADPC). Thirty nine participants from all over Iraq and from various professional backgrounds and ministries participated in the 12 days residential course. Public health practitioners, educational sciences and health professionals, doctors, nurses and program managers participated in the course and shared their experiences to address actual problems faced in Iraq.

The workshop provided state of the art modules emphasising the managerial aspects and inter-sectoral cooperation. The workshop also promoted a training package that will be used as future reference material for training at national and then at sub-national level with some adaptation.

The fifth inter-regional training course on **Public Health in Emergency Management in Asia and the Pacific (PHEMAP- 5)**, a five year capacity-building training programme in policy making, emergency planning, management of trauma, hospital planning and management of public health, was held at the Asia Hotel, Bangkok and Pattaya, Thailand, from 4 to 16 July 2005. 28 participants from Bhutan, Cambodia, China, India, Indonesia, Malaysia, Maldives, Mongolia, Myanmar, the Philippines, Thailand, Vietnam, Pacific (Fiji and Vanuatu) and Africa (Sudan) participated.

The PHEMAP Training Programme is in its fourth year of implementation. The internal evaluation of the PHEMAP Program took place on 5-7 October 2005 in Ho Chi Minh City, Vietnam. The evaluation was attended by representatives of the PHEMAP steering committee (WHO & ADPC), national PHEMAP coordinators and senior PHEMAP alumni and facilitators.





Dr. Meinarwati from MoH-Indonesia, representatives from WHO-Indonesia, PAHO, ADPC, INGOs, Government agencies and International experts at the opening ceremony of MDHF Workshop

The first national training workshop on **Mitigation of Damage in Health Facilities (MDHF)** was held on 2-4 August 2005 in Jakarta, Indonesia. The workshop was jointly organized by the Ministry of Health - Republic of Indonesia (MoH), the World Health Organization (WHO) and ADPC. The objectives of the workshop were to enhance the capacity building of the health sector, to promote the adoption of measures to mitigate future damages to health facilities as a result from natural disasters and to include the concept of vulnerability reduction in the various reconstruction projects in Indonesia.

The outputs that were achieved by the workshop were increased level of awareness on the key issues among the donors and the policy makers; advocacy for preparing guidelines and recommendations for standards in Indonesia; and the first draft of recommendations for promoting measures and standards to mitigate future damage to health facilities.

ADPC organized the third International Training on **Hospital Emergency Preparedness and Response (HEPR-3)** on 26-30 August 2005 in Bangkok. 25 fee paying participants from Afghanistan, Bahrain, Bangladesh, Brunei Darussalam, Hong Kong, Maldives, South Africa, Sri Lanka, Sudan, Sultanate of Oman, Thailand and the United Arab Emirates attended the course. The course includes interactive lectures and demonstration practice sessions.

The HEPR course is designed to assist health service providers, both administrative and medical to respond to emergencies that involve large number of casualties. Thus, developing well-designed specific hospital plans to increase the ability to respond to emergencies.



Mr. Jonathan Abrahams, Ms. Janette Ugsang, ADPC with officials from UNICEF-Iran and international nutrition experts

ADPC and UNICEF Iran and Bam Emergency Operations, in close collaboration with the Ministry of Health and Medical Education (MoH), held a training workshop on **Nutrition of Children and Mothers in Disasters (NCMD)** for nutritionists from different provinces of Iran from 3-14 December 2005 in Tehran.

The overall objective of the training was to enhance the capacity and preparedness of the Iranian MoH to manage the nutritional needs of children and mothers in disaster affected areas. At the workshop, the participants evaluated and monitor ed the nutritional needs, interventions and situations of affected

populations. The workshop also helped the participants to define the role of partners and allies such as Ministry of Health, the Iranian Red Crescent Society and NGOs in responding to nutritional needs of children and mothers in disasters.

Management of Dead and Missing: Post Tsunami Experience in Sri Lanka
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The tsunami on 26 December 2004 which affected the entire coastal belt of Sri Lanka caused over 30,000 deaths and about 8000 disappearances on top of the 40,000 cases of disappearances already recorded in the country due to 20 years of ethnic conflict in the North and the Southern rebellion during 1971 and 1984 to 1989. About 50 per cent of bodies from the tsunami were not claimed by relatives and buried in mass graves as unidentified cases. The Forensic Unit of the Karapitiya Teaching Hospital alone handled over 1100 deaths, of which about 450 bodies remained unidentified. The Forensic Unit recorded external appearances and all other important personal data before bodies were dispatched for mass burial. Photographs of these victims were put on public display and over 120 victims were positively identified by their relatives in the first six weeks after the incident. The forensic team from Colombo, applied similar practices at the "Peraliya" railway incident which claimed about 1500 lives, but they were only able to record 250 cases due to pressure from the public and political interference. Most cases in southern, eastern and northern provinces were buried without keeping proper forensic records other than the number of victims. Many photographs taken by private photographers hired by the police, are not of any value in forensic identification. The forensic medicos attached to the health department and forensic units of the national universities (around 40 trained doctors) from non affected areas offered their services for identification and handling of dead bodies. However, this offer was not taken up due to administrative bureaucracy. As a result, relatives of many victims may have to be satisfied with death certificates issued on affidavits but will never know what really happened to their loved ones.

The key forensic issues and deficiencies of tsunami disaster management

1. **Preliminary survey, collection of information and observation of the affected area or the scene by a team of experts.** It was the responsibility of the Police to coordinate this work. However, this was not feasible during the acute stage of the tsunami due to the large extent of the damaged area. Furthermore, the usual government regulatory mechanisms were severely disturbed by the disaster. The immediate relief work was organized using data from aerial photographs. Non governmental organizations and Buddhist, Hindu and Catholic missions were in the forefront of relief activities.
2. **Evacuation of injured persons to the hospital and providing immediate medical care:** The doctor's trade union, the Government Medical Officers Association (GMOA), made an appeal through the mass media within 3 hours of the incident. Doctors and other paramedical staff responded by reporting for duty to their respective stations leaving all personal matters aside. By late evening on 26 December, emergency medical teams including 200 doctors were deployed in most of the affected places, with the assistance of the airforce. There were over 1300 admissions on 26-27 December 2004 to the Karapitiya hospital, of whom 700 cases with minor injuries who were managed as out patients.
3. **Collection and storage of dead bodies:** The storage of dead bodies gives time for identification and other investigation procedures. As the refrigeration capacity available at hospital forensic units are insufficient for mass casualty incidents common practice is to acquire deep-freezer trucks for long term storage of bodies. Covering bodies with ice cubes and saw dust or use dry ice can delay decomposition up to 24 hours. Both methods were not possible during the tsunami period due to damage to the harbours and ice factories situated in the coastal region. The only option available was mass embalming. Due to a limited amount of chemicals available in hospital 'light embalming', comprising 10% formaldehyde injections to the muscles and internal organs combined with soaking of body surfaces with 5% formaldehyde was employed. Over 400 unidentified bodies were kept up to 72 hours without attracting flies. From the 28th onwards, when bodies were found in a state of advanced decomposition, mobile forensic teams from hospitals performed external examinations, recorded personal effects, collected tissue samples and disposed of bodies at the scene.
4. **Autopsy examination:** Full autopsy procedures were not essentially and beyond many hospital's capacities. Circumstances were clearly indicative of the cause and of death. One sample of dead bodies included about 50% of females and children. Most victims showed signs of drowning but many of them (mostly adults) had contusions, abrasions, lacerations, fractures, head injuries and crush injuries.
5. **Recording of dead bodies:** All unidentified dead bodies were numbered with plastic tags and photographed from different angles, with a view to identifying them at a later stage. The photographic records were supported by written entries including important anthropological and dental data. All valuables and personal belongings were collected and secured. Tissue samples were taken for DNA studies and confirmation of identification disputes. Unfortunately, this methodology was not given due consideration at most places in the country.
6. **Dispatching of bodies:** Ideally each victim must be given a coffin or wrapped in a separate body bag. Bodies should not be dumped one over the other. They must be laid in a grave and identification tags bearing body number must be planted at the side of the grave. All unidentified dead bodies from our hospital were buried in a mass grave on 29 December 2004.

Recommendations

1. There must be a central regulatory body which should adopt a flexible, multidimensional approach to coordinate functions of local agencies in disaster management.
2. The technical matters of handling dead bodies and identification of victims is a professional job which should be left to the forensic experts.
3. The government authorities and non-government agencies may assist forensic experts by providing support such logistics, man power and security.





Managing Untrained Volunteers and the Dead in Mass Disasters

The needs of survivors may overwhelm the capacity of government services. Given adequate leadership and support services, untrained volunteers may effectively provide services and often can start the race against time. Getting a significant portion of the job done quickly is the source of inestimable public pride.

Accepting the help of volunteers adds to the needs in the disaster area for food, shelter, and sanitation. Upon arriving, volunteers are at significant risk of psychological injury. They also present a number of other issues which require management, such as:

- language barriers from the local population (even if they come from the same country);
- their lack of training requires more rigorous and time consuming quality control than normal;
- a tremendously enlarged need for supplies for the activities of daily living (such as food and washing) requiring more support;
- the police protection of their personal safety;
- their inevitable medical needs;
- the visa requirements of international volunteers;
- legal issues concerning the acceptability of the work done by untrained workers in a particular technical field; and
- many leadership issues of a non-cohesive group.

A large and varied volunteer force needs translators and an organized way to use them effectively. They are not only needed for the volunteer force to communicate with each other, but they are needed for the relief workers to interact effectively with the survivors who may speak a different language, have a different religion, or a different set of values. Volunteers can also help survivors to fill out their own information forms. Frequently asked questions can also be approached in terms sensitive to the local population, such as how the relief agency operates, the search and repatriation process, and providing effective counseling.

But the most important general capacity needed, that no agency can provide, is massive manual labor. Very few volunteers were able to move bodies for more than three days. This most difficult exertion involved bending, lifting and carrying in great heat and humidity while wearing protective clothing, boots, head cover, masks and double gloves. Deployed far from the canteens, the workers can quickly become dehydrated and hungry; lacking adequate sleep, they are easily injured and have a reduced tolerance for psychological stress. Resentment may quickly develop if their job is perceived to be menial and thankless.

A large workforce and population of survivors will need many field kitchens that must be supplied, cleaned and operated round the clock. Their eating together contributes to solidarity and identification with each other. Volunteers will run out of their own vitamins and medicine, and need first aid and medical supplies. High standards of medical care are required by law and contribute to high morale. Heavy lifting and carrying of supplies, bodies and dry ice caused many injuries, which required more volunteers to care for them and to replace them.

All these people will have many concerned friends and relatives that need reassurance to enable them to continue. So, easy access must be given to extensive communications. Many other volunteers will be needed to wash clothes, towels and sheets. Lost and found services, secure lockers, and personal supplies for toiletries and clothing are also required. Just one tsunami work site had up to one thousand volunteers on site at one time.

Managing a large workforce requires communications. It is easier to communicate with the workforce by posting messages and announcements at focal points. Methods include a central directory board, large signs indicating services and facilities, posting of the answers to frequently asked questions such as how to access clerical supplies (for example, body tags) or support services. Other important messages that must be posted are work rosters, eating schedules, and transport timetables.

Even if a large number of trained professionals volunteered for the effort, they cannot do all the technical work. We have learned that the volunteers of all ages with general skills can be effectively trained to maintain a high level of proficiency in a very short time, such as in the collection of DNA from survivors and from human remains. Volunteers must also learn the

procedures for accurate and timely communication and documentation. Team integrity and effective leadership complement the other. "Leading from the front" demonstrates to all that the leaders are sharing the burdens and hardships of the workers. Leaders should work in the open and remember to add the extra human touch of showing encouragement and appreciation.

The nature of a volunteer workforce increases uncertainty in managing resources. Since the members are always changing, the special and general skills available to the relief effort must be monitored daily. These attendance records will always be valuable, to plan for transportation, food, shelter and supplies. Volunteers usually only ask for basic human needs, documentation for work or school, and transportation to and from the disaster site. Supplies for basic sustenance need not cost the relief agency much either. Many companies donated these resources in Thailand, including food production and distribution companies, petroleum companies, computer companies, land and cell phone companies, and electric companies.

The general volunteer worker readily learned universal precautions to protect themselves from biological hazards. In a disaster, every mundane task is a complicated process. One cannot wipe perspiration with a sleeve contaminated with fluid from human remains. One cannot eat or even handle food without altering lifelong cultural habits. The management of a large, hastily assembled workforce was enhanced by the rapid development of team integrity and effective leadership, and is itself a specialized body of knowledge.

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Critical public health interventions

- Environmental protection (shelter, water supply and sanitation, vector control)
- Communicable disease control
- Immunisation
- HIV-AIDS control
- Management of dead bodies
- Nutrition
- Maternal and child health
- Health care services
- Public health surveillance

Public Health and Disasters: Realities and Myths

Disasters result in a vast ecological breakdown in the relation between humans and their environment, a serious or sudden event on such a scale that the stricken community needs extraordinary efforts to cope with it, often with outside help or international aid. Disasters may be acute or chronic, naturally occurring or human induced.¹

During the past decade our globe faced countless natural calamities. The impact of such disasters is directly affected by human vulnerability due to poverty and social inequalities, environmental degradation and rapid population growth, with over two billion urban dwellers globally today. Moreover, increasing population density, increased settlement in high risk areas, increased technological dependency, globalization, emerging infectious diseases (i.e. bird-flu) and ageing populations, all contribute to the magnitude of the outcomes from disasters.

Considering recent experiences with the Asian tsunami, the hurricane Katrina in the US and the Kashmir earthquake it becomes evident that: (A) affected communities need assistance, (B) resources and expertise exist within local communities, within nations or at international level, (C) problems encountered in disasters' response often crystallize at the level of coordination and collaboration, and (D) that myths on disaster realities still persist.

Important prior to response is to assess the situation and identify the victims' needs. The reason for collecting, analyzing and disseminating information on needs, diseases, injuries and deaths should be to address the needs and control diseases, therefore, surveys should not be allowed to consume resources if action does not follow.

To facilitate appropriate decision-making and to avoid unnecessary or even damaging assistance, an understanding is needed on the requirements, the local capabilities and gaps. In addition inventories of resources and expertise at local, national, regional and international levels need to be part of disaster preparedness. The chaos, created by disasters and the sudden large scale need of victims, triggering national and international responses, however, often unintended adding to the chaos due to lack of coordination and collaboration, not to mention bureaucracies usually paralyzing prompt action.

Finally, as discussed in the literature^{1,2,3} responses to disasters are often troubled by various myths such as:

- Foreign volunteers with any kind of medical background are needed...
The reality is that local populations almost always cover immediate lifesaving needs.

Only skills that are not available in the affected community may be needed.

- Any kind of assistance is needed, and it's needed now!
Hasty responses, not based on impartial evaluation, only contribute to chaos. Un-requested goods are inappropriate, burdensome and divert scarce resources. It is better to wait until genuine needs have been assessed. As a matter of fact, most needs are met by the victims themselves and their local government and agencies, not by foreign interveners.

Factors influencing disease transmission after disasters

- Pre-existing diseases in the affected community (measles, typhus, cholera)
- Immunisation rates
- Population density
- Damaged utilities (water & food contamination)
- Increased disease transmission by vectors

- Epidemics and plagues are inevitable after every disaster...
The reality is that epidemics rarely ever occur after a disaster. Dead bodies will not lead to catastrophic outbreaks of exotic diseases. Proper resumption of public health services will ensure the public's safety (immunizations, sanitation, waste disposal, water quality, and food safety). Critical factors influencing disease transmission after disasters are: pre-existing disease in the affected community (such as measles, cholera, typhus and hepatitis-B);

immunization rates; population density; damage to utilities (contamination of water and food); and increased disease transmission by vectors (malaria, dengue).

Priorities for a coordinated disaster health program

- Protection from natural & human hazards
- Census or registration systems
- Adequate & clean water
- Acceptable nutrient food
- Adequate shelter
- Cultural appropriate sanitation
- Family tracing (mental health)
- Coordination with other vital sectors
- Functional health care services

- The community is too shocked and helpless...
The reality is that many find new strengths. A cross-cultural dedication to common good is the most common response to natural disasters. Most rescue, first aid, and transport come from other casualties and bystanders.
- Disasters bring out the worst in human behavior...
While isolated cases of antisocial behavior exist, the majority of people respond spontaneously and generously.
- Disasters are random killers...
Disasters strike hardest at the most vulnerable groups: the poor, and especially women, children, and the elderly.
- Locating disaster victims in temporary settlements is the best alternative...
It should be the last alternative. Many agencies use funds normally spent for tents to purchase building materials, tools, and other construction-related support in the affected country.
- Food aid is always required for natural disasters...
Although natural disasters sporadically cause loss of crops, in many cases victims do not require "massive" food aid.
- Clothing is always needed by the victims of a disaster...
Used clothing is almost never needed; it is almost always culturally inappropriate, and although accepted by disaster victims, it is almost never worn.
- Things are back to normal within a few weeks...
The effects of a disaster last a long time. Disaster-affected countries deplete much of their financial and material resources in the immediate post-impact phase. Successful relief programs gear their operations to the fact that international interest wanes as needs and shortages become more pressing.

In terms of the public's health, the provision of adequate clean water and sanitation, timely measles vaccinations, simple treatment of dehydration for diarrhoea, micronutrient supplements, and the establishment of a basic health surveillance system greatly reduces the health risks associated with harsh post-disaster environments⁶.

There is no shortness on evidence to address the myths surrounding disasters; however, publication of scientific evidence alone is insufficient to bring about public health action⁵. International agencies need to translate research findings into policy, standards, and guidelines on managing disasters. Further, there needs to be ongoing regional and national capacity building in public health disaster programs, as well as assessment of the effectiveness of disaster preparedness plans and communication with the affected population.

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Pictorial
with Dr. Khunying Porntip Rojanasunan

ADPC in partnership with the Asian Institute of Technology (AIT) organized an Extramural Lecture by Dr. Khunying Porntip Rojanasunan on the 13 December 2005 at AIT Conference Center, Bangkok. Khunying Porntip outlined her experiences in the tsunami aftermath and addressed lessons for the future.



*Have the impacts of
December 26, 2004
receded with the waves?
Dr. Khunying Porntip Rojanasunan,
Thailand's outspoken,
independent-minded, forensic
pathologist, who made decisions
with exemplary
leadership qualities during the
tsunami devastating days...*



"My personal learning from the Tsunami was facing the challenge, seeking the positive learnings from Buddhism..... seeing the selfless dedication, efforts of the volunteers, both local and foreigners....to work in very trying conditions..."



*"Critical Incident
Management
System for Thailand is
a major
challenge yet..."*

**The Fourth ADPC Announces... Disaster Management Practitioners (DMP)
for Southeast Asia Workshop,
8-10 March 2006, Bangkok, Thailand**

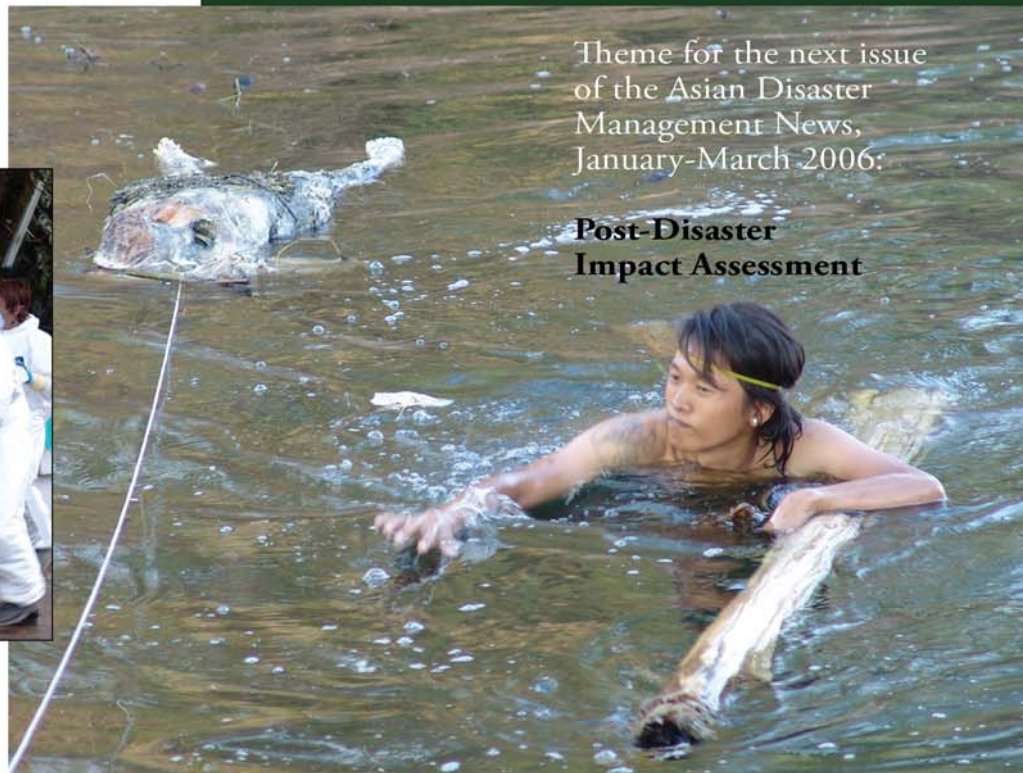
"Learning from community based practices: Strengthening policy and partnerships"



The theme for this year's workshop, emphasizes the need for continued learning about community based approaches to disaster risk reduction and underlines the importance of formulating policy and strengthening partnerships for wider integration of CBDRM into the social and economic development processes. The 4th DMP SEA Workshop is being held in the aftermath of the great Asian tsunami and the other large scale disasters in the region and worldwide. Such events have significantly changed perceptions about vulnerability, risk, and capability to reduce risks. Simultaneously, several encouraging developments were taking place both in policy and practice of disaster risk management. The relevance of community-based approaches to disaster risk reduction has been underlined both by the disastrous events and the response needs, as well as in the policy and institutional reform efforts. Likewise is the increasing need for establishing and strengthening multi-sectoral partnerships and networking to promote integration of community based approaches into broader socio-economic development processes. For more information, and to request copies of the brochure and registration form, please contact Kaikim Chiang at kaikim@adpc.net or Zubair_Murshed at mzubair@adpc.net or visit www.adpc.net/pdrsea/dmp/dmp-brochure-final.pdf

Theme for the next issue
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**Post-Disaster
Impact Assessment**



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