TRAINING IN HEALTH EMERGENCY MANAGEMENT IN ASIA-PACIFIC: THE INTER-REGIONAL PHEMAP

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INTRODUCTION

Disaster loss is on the increase, especially in Asia Pacific which is by far the world's most disaster-prone region. Vulnerability to disaster risk is increasing, due to changing demographics, technological and socio-economic conditions, unplanned urbanization, development within high-risk zones, underdevelopment, environmental degradation, climate variability, climate change, geological hazards, competition for scarce resources, and the impact of epidemics.

In the past two decades, more than 200 million people on average every year have been affected by disasters according to the Hyogo Framework for Action 2005-2015: building the resilience of nations and communities to disasters. This landmark framework indicates there are increasingly severe consequences for the survival, dignity and livelihood of individuals affected by disasters, particularly the poorest, which threatens recent development gains. It also underlines the importance of sharing knowledge and building capacity in the most needed areas, to set up comprehensive strategies to mitigate disaster loss.

What is most needed is systemization and integration of disaster management policies, plans and programs at the community level as well as nationally and internationally. To do this requires all aspects of disaster risk to be taken into consideration and enhanced – and for all aspects to work together.

One of the key arenas for emergency management is the public health sector; at the forefront of response to emergencies and disaster, and key to the survival and rehabilitation of populations post-disaster. Developing the capacity of public health managers poses significant opportunities as well as unique challenges. The aim of this study is to describe the salient features of the PHEMAP program, especially how a shift to a managerial perspective with adult-learning methods occurred, including interviews with the curriculum developer, the former head of Health in Emergencies Unit, ADPC, and a graduate of one of the PHEMAP courses.

THE ROLE OF PUBLIC HEALTH MANAGEMENT IN DRR AND EMERGENCY MANAGEMENT

There is a growing understanding and acceptance of the importance of public health management in disaster risk reduction (DRR) and increasing disaster response capacities. The World Health Organization (WHO) recognized this in its designated focus for the 2009 World Health Day; building the capacity of public health facilities to cope with emergencies. In April 2009, WHO

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recommended several core actions that governments, public health authorities and hospital managers can undertake to make their public health facilities safe during emergencies. They recommended that these actions should be within the scope of public health managers; that they should be enabled to:

- assess the safety of hospitals;
- protect and train health workers for emergencies;
- plan for emergency response;
- design and build resilient hospitals;
- adopt national policies and programs for safe hospitals; and
- protect equipment, medicines and supplies.

WHO has been taking the lead in urging all ministries of health to review the safety of existing health facilities and to ensure that any new facilities are built with safety in mind. They highlighted how practical and effective low-cost measures such as protecting equipment, developing emergency preparedness plans and training staff can help make health facilities safer, better prepared and more functional in emergencies.

From a regional perspective too, there is increasing understanding that emergency management is of vital importance for public health managers. In some Asia-Pacific countries such as Nepal or Indonesia, where the earthquake risk is high, or India and Bangladesh which are prone to increasingly unpredictable seasonal flooding, disaster risk reduction and response plans have involved public health managers for decades. In the Philippines and China, public health considerations are at the forefront of emergency response and rehabilitation.

However, in some other countries, and for many government officers and public health managers in the Asia-Pacific, management of public health emergency risk was until relatively recently, fairly low priority. In response to more recent disaster events, it has become imperative that health ministers and government officers, managers of medical facilities and community health managers, consider emergency risk as a cross-cutting theme in the development of their objectives and operational plans. Equipping national health managers for this ongoing task requires the effective and ongoing transfer of knowledge, technology and expertise, to enhance capacity building for disaster risk reduction.

Public heath managers in Asia-Pacific are now increasingly required to take the lead in developing national, regional and community-based sustainable development policies, planning and programming. For their work to be effective there needs to be a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction. Building resilience for communities and institutions to respond to a public health emergency requires long-term planning and pragmatic approaches.

Therefore, it is clear that there is a critical need for skilled public health managers with a responsibility for emergency and disaster preparedness to set up DRR policy frameworks, share good practices and lessons learned, identify gaps in knowledge, disseminate awareness of DRR policies and to address new challenges. This calls for Inter-regional as well as national training and education.

TRAINING HEALTH EMERGENCY MANAGERS IN ASIA-PACIFIC: PHEMAP

The Public Health and Emergency Management in Asia and the Pacific (PHEMAP) Inter-regional course, a flagship training course run by the Asian Disaster Preparedness Center, was set up as a direct response to the need for capacity building and knowledge sharing to act on disaster risk reduc-

tion in the public health sphere. To date, 237 PHEMAP graduates have been trained through a series of 'Interregional' training courses, covering 24 countries. This has also led onto training courses running in 11 individual countries – or 'National' PHEMAP courses. These have trained many individuals and groups, scaling up for public health disaster management at a provincial and community level.

The 9th Annual Inter-regional PHEMAP course was concluded in Bangkok in August 2009. It marks almost 10 years of the PHEMAP course by ADPC; setting standards for public health managers throughout the region, in the field of emergency preparedness.

As with previous trainings, the combination of participatory learning, practical workshops and group sessions has skilled-up a group of 24 graduates all of whom are influential, high ranking officials or managers, ready to return to 11 countries throughout the Asia-Pacific region and implement their knowledge.

The goal of the PHEMAP Program is to strengthen national capacities for managing health risks of emergencies in the WHO South-East Asia and Western Pacific regions.

The objectives of the program are threefold:

1) Firstly to enhance the knowledge, skills and attitude of health human resources at national, sub-national and community levels by offering a range of courses and capacity-building activities;

2) Secondly, to promote and facilitate regional collaboration and national coordination in health emergency management through the development and implementation of formal and informal networks and other activities;

3) Lastly, to contribute to capacity building in other regions and countries by offering PHEMAP initiatives.

Activities of PHEMAP are categorized as Inter-regional PHEMAP course, National PHEMAP courses, and Specific Activities. All these courses are supported by WHO, and with the significant and essential financing from the Royal Norwegian Government, or with fees paid by the participants' institutions.

The Inter-regional program produces a cadre of trained professionals who are enabled to contribute to their respective national health-risk management programs. An ongoing objective is capacity-building at national level; where the Inter-regional course graduates go on to develop National PHEMAP courses. The Inter-regional PHEMAP course also serves to develop curriculum for application at National PHEMAP courses, drawing on inter-regional and international experiences.

All Inter-regional course participants benefit from the networking and sharing opportunities offered by the two-week long, residential course. It brings together leading health officials from across the region, to acquire knowledge and practical skills, and share experiences from others in similar situations.

Background to the PHEMAP program

The program was set up in response to requests from countries in the Asia-Pacific region for support in improving the knowledge and skills of government officers working on the public health aspects of emergency management. The WHO Regional Office for the Western Pacific (WPRO) and for South-East Asia (SEARO) collaborated with the ADPC in Thailand to develop a program of integrated training courses.

The objective was to develop a program which was based on the specific needs of the region and that focused on the requirements of the various levels of responsibilities in

Asia-Pacific Ministries of Health.

ADPC was approached by WHO WPRO and SEARO to develop, organize, and deliver courses on Public Health and Emergency Management for member states of the two regions. Since March 2002, ADPC, WPRO and SEARO have developed and implemented nine Inter-regional PHEMAP courses and three National PHEMAP Course Coordinators workshops. These courses and workshops have been offered with the valued support of the Japan International Corporation for Welfare Services (JICWELS), Royal Government of Norway and WHO. Without the hugely important ongoing support of the Royal Government of Norway, these vital activities would not be possible, and capacity building on this level would not take place. The Royal Government of Norway has been a huge support to the PHEMAP program to date.

Several other significant activities with PHEMAP have taken place, in addition to the core training. The WHO Regional Office for the Eastern Mediterranean (EMRO) has adapted the PHEMAP curriculum and implemented the course under the name of Management of Public Health Risks (MPHR) for the Iraq Ministry of Health (with ADPC) in Jordan, Tunisia and Egypt. The French version of the MPHR Course was implemented in Morocco. Other WHO Regional Offices such as the European Regional Office (EURO) and WHO Health Action in Crises in Geneva take an active interest in PHEMAP and have shown interest in expanding the reach and influence of this unique program to Member States in other WHO regions.

Moreover, a total of 43 participants from 14 countries (Asia and the Pacific) have participated in the National PHEMAP Course Coordinators workshops. Since inception, graduates from Inter-regional courses have been instrumental on implementing National PHEMAP courses in 11 countries: Cambodia, China, Fiji, Lao PDR, Mongolia, the Philippines, Papua New Guinea, Sri Lanka, Thailand, Vanuatu, and Vietnam by the respective Ministries of Health with support from WHO.

SEARO, WPRO and ADPC have also organized a workshop on the Management of the Dead and the Missing in Disasters in October 2005 and 2007 under the framework offered by the PHEMAP Program. PHEMAP participants have undertaken significant projects to build health emergency management capacity at the national level. In Vietnam, Dr Khanh Long Nguyen and Dr An (PHEMAP Alumni 2002) contributed to health emergency response planning for the 2003 Southeast Asian Games. PHEMAP Alumni assisted in the revision of the MOH reporting system for disasters. Also, Dr Le Van Tuan (PHEMAP Alumni March 2002) translated the WHO publication on Assessment Protocols for Emergencies into Vietnamese.

Participants from Papua New Guinea developed the first national emergency management plan for the health sector. Sri Lankan PHEMAP graduates developed the first national guidelines for hospitals for Mass Casualty Management. In the Philippines there has also been major contributions made by PHEMAP graduates. They have revised and published the emergency response plan for the health sector.

Development of the PHEMAP Course

PHEMAP was offered for the first time in March 2002. In October 2005, the PHEMAP Steering Committee conducted a three-day meeting in Hanoi, Vietnam and recommended the review, redevelopment and repackaging of the PHEMAP curriculum. This was followed by a workshop in March 2006 in Bangkok, which directed the review to

focus on the management roles of health emergency managers. A revised curriculum was developed by ADPC with strong support from the Royal Government of Norway and SEARO.

PHEMAP 6 was an opportunity to test and evaluate the new curriculum. As a result of the evaluation process and further reviews, PHEMAP 7 incorporated further changes, and further revisions have been made since, as a response to course evaluations from participants, facilitators, ADPC and supporting organizations.

Key aspects of PHEMAP course

The PHEMAP Inter-regional course familiarizes public health emergency managers with a range of tools, methods and processes that will enable them to fulfill their roles in emergency management. The course is based on the concept of risk management that provides the framework for health emergency management policy development, emergency planning and capacity development. The integration of risk management-based health emergency management strategies with sustainable development and risk reduction activities in health and other sectors is emphasized.

The revised course gives greater emphasis to the risk management, program management, operations management, and leadership roles of health emergency managers. There is a high level of participant-centered activities, such as group work and exercises. Efforts are made to weave the different public health functions or health service delivery areas into the modules. This is done by making them these central to scenarios, simulations and group activities in the course. Therefore, although reflecting a managerial perspective, PHEMAP draws attention to the technical health services (*eg*, environmental health, mass casualty management, reproductive health, feeding and nutrition, etc), which are crucial to emergency health management.

This course enables graduates to address the challenges of managing emergency health risks by making improvements to the capacity of their respective health emergency management systems and institutions. After the course, PHEMAP graduates are expected to contribute to set up plans for emergency management, develop and implement PHEMAP courses at national level, as well as other capacity building activities.

PHEMAP Course Content

The PHEMAP Inter-regional course consists of 15 thematic modules, delivered by expert facilitators (Table 1). Each module has a theme, related to the roles of an emergency health manager. The final module (Capacity Development) serves to draw together the contents of the previous modules in the development of a capacity development plan based on a determination of respective national and institutional needs (HE Ms Merete Fjeld Brattested, Norwegian Ambassador to Thailand, 2009, personal communication).

> Norway believes in the mission of the Asian Disaster Preparedness Center and that is why we support the PHEMAP courses more specifically. The national ability to reach the larger population in the best possible way in times of emergencies and disasters is crucial to prevent epidemics and a large number of fatalities.
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> The main responsibility for emergency management, relief and response lie of course with national authorities. The international community should, however, always be committed to assist in capacity building efforts in order to enable the national authorities concerned to shoulder that responsibility. Norway is therefore privileged to be a part of the worthwhile endeavors of the ADPC and the WHO in,

Table 1
Course content.

Key roles	Functional roles	Tools and processes
Leadership	Direction	Risk assessment and risk management
Risk management	Coordination	Capacity assessment
Program management	Communication	Capacity development
Operations management	Advocacy	Policy development
	Advising	Guidelines, standards and protocols development
	Assessment	Project management
	Planning	Health information systems management
	Capacity development	Risk communication
		Team building and leadership
		Emergency planning
		Exercise management
		Health assessment
		Incident management
		Response coordination
		Mass Casualty Management
		Logistics and supply management
		Recovery and reconstruction
		Risk reduction
		Monitoring, reporting and evaluation
		Research and analysis
		Training and development

Source: ADPC. Public Health Emergency Management in the Asia Pacific [CD ROM]. Bangkok: Asian Disaster Preparedness Center, 2009

through these PHEMAP courses, help strengthening national capacities to deal with the public health aspects of emergencies and to promote regional collaboration in the field of emergency management.

Stephen King, Curriculum Design Specialist, PHEMAP (6-9)

"There was a fundamental shift in PHEMAP after a program evaluation meeting in Hanoi after PHEMAP 5.As a result of this evaluation, there was a shift from a focus on technical issues to a more management perspective. My role in reviewing the course structure was to look closely at adult learning pedagogical techniques that would be appropriate for PHEMAP. The course delivery was primarily lectures on technical themes.

Other former trainees and trainers were consulted as part of this course revision. We became more realistic. It became clear that the cluster of courses offered under PHEMAP would be best suited to provide a focal point for health emergency management in Ministries of Health.

WHO also increasingly acknowledged the role of public health managers in governments and realised that there are not sufficient personnel with the right knowledge available.

Graduates of the inter-regional courses have gone on to improve public health emergency procedures in their respective countries. This accumulated

knowledge has been transferred, institutionalized, and localized. In nine countries, including the Cambodia, China, Philippines, and Sri Lanka, there have been successful national PHEMAP courses conducted.

To bring a more managerial perspective and broad-based approach to PHEMAP, I worked to integrate the 'problem-based approach' into learning methods.

The different learning techniques PHEMAP now offers contribute significantly to its impact and success. There is a combination of training methods: daily reflections, Q and As, interactive presentations, small group discussions, role play, plenary sessions, reality-based exercises or simulations, field trips and evaluations. We are focussing on the needs of the stake-holders; the clients, governments, Ministries of Health, and so forth, and the issue graduates will face when they return to their bases.

Key ongoing issues are the selection of PHEMAP candidates, and follow-up communication with graduates. Choice of candidates is handed over to individual Ministries of Health; so there is no central control over participants. This issue has been addressed by WHO by communicating to ministries about the criteria for candidates, but clearly the success of the course, and the outcome of individuals evaluations of whether they feel the course was relevant to them, depends in many ways on their suitability as candidates for the course.

I have found the reception of these learning techniques to be very enthusiastic; participants find it active and challenging. The focus for each trainee should be 'how can I/we use what we have learned so far in my work' and always refer back to their role and experiences. Setting a climate for this type of learning to take place requires the course as a whole, as well as each module and every interaction, to be enabling, applicable, and flexible; only then can the training lead to improvement."

Jonathan Abrahams, Coordinator for Health Action in Crises, WHO, Geneva (former Director, Public Health in Emergencies, ADPC: PHEMAP 6-8)

"The reality of the situation for Public Health managers is that they divide their time between many differing functions. Very few countries in Asia-Pacific have dedicated public health government offices specifically and solely looking after emergency management.

Part of the function of the existence of the course is to push for governments to prioritize the role of emergency managers in public health. It's not possible to fulfill this function effectively part-time. We need to work as advocates for governments to designate people and finance to these important roles. Take the Philippines as a model example; they have had health emergency staff for many years now, which in turn ensures that health emergency management systems and policies have been put in place, and plans and capacity development, including national PHEMAP courses, are integrated into the national and community disaster-management systems.

We developed a package for effective learning targeted at these managers and officers of public health. There are three ways the course is set up to help ensure success; the core curriculum, developed by WHO and ADPC with facilitators, has clear learning objectives which relate to the role of health emergency managers; the selection of the right facilitators who have experience, technical knowledge and facilitation skills to bring the course to life, and MOH selection of the right participants. There has been headway made in more recent years on the latter issue, with MOH,

together with WHO country offices, ensuring that participants who come to Inter-regional courses will be able contribute to the courses, and then return to their countries to implement their learning by strengthening national systems and conducting training programs at country level.

Whoever is responsible for developing and managing the health emergency management systems in countries, they should be going along to PHEMAP! The course makes it a priority to bring out the experiences of participants, particularly in management functions. Building on their existing knowledge ensures continuity with their roles, and builds further skills and an environment where everyone can contribute their experiences.

The training needs to articulate to the national and sub-national levels - with a focus on how to transfer the knowledge. But there needs to be more focus on tracking this change, and communicating it more widely so that international and national lessons are learned. Follow-up with graduates definitely needs to happen more. This is not just for monitoring and evaluation of the courses, but to see how the participants are contributing to the development of health emergency management systems in countries. We can also see what support is needed by public health emergency managers on an ongoing basis. There is a lot of value in sharing the regional and national experiences, and keeping a network going which links health emergency managers across the region.

The critical issue is ensuring the relevance of the training to the development of national capacities and the professional development of the participants themselves. The entire course is designed to help participants to identify national capacity development needs and priorities, which culminates in their country presentations at the end of the course. However, effective training needs to have a practical component. PHEMAP currently has simulations and field trips, but there would also be value in staging the course whereby participants undertake an initial workshop, followed by a field placement or project stage, before resuming the program and sharing their experience with peers and facilitators. A practical component would enable participants to apply their learning and help to build capacity in country. This is more likely to be effective in national level training where there will be more information and time available for a field component.

The badge of PHEMAP is the systemic approach that it takes to health emergency management, and particularly for the development of the leaders in the system. It addresses all-hazards through risk reduction, preparedness, response and recovery. It is multi-disciplinary; recognizing many different disciplines and sectors including governmental, non-governmental, private and academic. All these ingredients need to come together. And at every Inter-regional PHEMAP course, they invariably do."

PKC Jayasinghe, Medical Superintendent Ampara General Hospital, Ampara District, Sri Lanka, (Participant in PHEMAP 4)

"In the fall of 2004, I had the opportunity to attend the PHEMAP course held by ADPC, Thailand. I learned comprehensive management of all kinds of disasters. The training gave us theoretical and practical knowledge at the same time.

Here, I heard about tsunami for the first time in my life. All other natural disasters – floods, drought, earthquake and cyclone were already known to me. Afterwards, I found it very interesting to search for more details about tsunamis, and I discovered that there was a historical tsunami event in Sri Lankan history.

After returning to Sri Lanka, I immediately followed up in my hospital to put the recommendations and guidelines into practice. I put in place the management issues I had learnt and arranged workshops to make the staff aware. We held three workshops held in the auditorium in Ampara GH. The first workshop was for medical consultants, medical officers and nurses; the second for paramedics, and the third workshop was for our other employees.

The outcome of these workshops was very high awareness. Almost everybody now understood about natural and manmade disasters, disaster management and its circle, community participation, triage, pre-hospital casualty management and accident/emergency (A/E) care. Everybody was trained to fulfill their task in emergencies.

The following results came out for an improved hospital management system after my training.

- Internal and external triage for disaster management.
- Opening of a disaster management commanding center.
- Opening of new accident and emergency treatment unit in front of the inward admission desk.
- Training of the community to face the disaster.

All my staff also heard about the word 'tsunami' for the first time in their lives... I explained about tsunami risk, based on the knowledge that I gained from PHEMAP.

When the tsunami waves hit the Sri Lankan coast on 26th December 2004, and casualties started being brought to my hospital, everybody in my staff immediately understood the gravity of the event.

It was very easy to manage the tsunami victims because of the awareness about tsunami by my staff.

In Ampara District, 12,500 people died from the tsunami. The Ampara General Hospital was the tertiary care institution for entirety of Sri Lanka, managing the highest number of tsunami victims. Soon after the tsunami, 1,015 patients were admitted to my hospital. In addition, more than 4,000 patients got treatment from the outpatient department. Of all these patients after the tsunami, only 17 patients passed away.

Most of the patients suffered from salt water aspiration. No physician in Sri Lanka knew how to manage salt water aspirated patients at that time. But we had a telemedicine room with equipment donated by WHO in June 2004. We normally used this room to seek opinions from specialists (*eg*, neurosurgery, neurology, radiology and hematology).

In the immediate hours after the tsunami, our surgeon and gynecologist asked me to use the internet in the telemedicine room to search for the latest methods for patient management after salt water aspiration. With this research, we saved the lives of many patients (especially children) suffering from salt water aspiration.

We had also previously arranged external and internal triage and strengthened the A/E services. This meant that we could resuscitate many patients who were in critical condition. Afterwards, we managed those patients in ICUs and inwards, and some patients underwent surgery in the OT.

Finally, I can say because of my training in PHEMAP, the Telemedicine project in the hospital, and the LAN (Local Area Network) which was donated by WHO, we could manage the tsunami patients to an international standard.."