HEALTH EMERGENCY AND DISASTER PREPAREDNESS IN MALAYSIA

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Abstract. Malaysia's topographical and geographical location predisposes the nation to a number of natural hazards that may lead to disasters. Floods are the primary hazard affecting Malaysia, ranking in the top deciles for most of the western half of the country. Landslides and droughts are also significant though their effects are limited to much smaller areas in the eastern regions. When weighted by mortality, landslides pose a large risk for the northeastern part of the country. Deforestation due to uncontained development of hill slope areas is partly the cause of a majority of landslides in Malaysia. Over the past four decades, Malaysia has sustained more than USD 100 million in total estimated damages due to floods and landslides. Health emergency and disaster preparedness includes getting ready (readiness), anticipating consequences or impacts from hazards or emergencies (foresight), planning for a variety of scenarios (anticipatory planning), and taking the necessary measures in order to avoid or reduce risk (precautionary action). A common perception is that preparedness is only for response; however, preparing for recovery after a disaster or emergency is no less important.

INTRODUCTION

The International Strategy for Disaster Reduction (ISDR, 2007) defines preparedness as "activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations". Malaysia, unlike other Southeast Asian countries, has been spared from major natural disasters. However, there is a history of health emergencies caused by biological and natural hazards, such as outbreaks of communicable diseases and seasonal and flash flooding, as well as a number of mass casualty incidents. The most significant incidents during the last 15 years and their main consequences are listed in Table 1. The Ministry of Health responded effectively to these incidents by mobilizing required health resources. Individually, sections of the Public Health branch have developed and implemented guidelines and Standard Operating Procedures (SOPs) to deal with particular hazards (*eg*, outbreaks of potentially infectious diseases, SARS, floods. and vector control). A Public Health Crisis Preparedness and Response Workshop is conducted annually to assess pre-crisis situations and remodel SOPs, if necessary. These workshops analyze the existing response capacity at the national level and highlight areas that need strengthening.

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Table 1
Incidents in Malaysia over the last 15 years.

Year	Incident	Consequences
1995	Landslide at Genting Highlands slip road near Karak Highway.	48 deaths
1996	MVA (bus plunging into ravine)	17 deaths
	Mud flood at aboriginal settlement in Perak	44 deaths/30 homes
	Tropical storm "Greg" in coastal Sabah	230 deaths/4925 homes
	Cholera outbreak in Penang	+/- 2000 cases
1997	Enterovirus (EV71) outbreak in Sarawak Smoke haze	131 infant deaths Economic loses
1999	Nipah virus + viral encephalitis outbreak	107 deaths
	Landslides at Bukit Antarabangsa, Selangor	17 deaths
2001	Anthrax threat	103 reported incidents
2003	SARS	5 probable cases
2004	Tsunami in Penang and Langkawi	68 deaths
2005	Smoke haze	Economic loses
2007	Typhoon Utor induced flood affecting southern Peninsula Malaysia	15 deaths/10,000 homes

Source: Ministry of Health, 2008

The response component to health emergencies and disasters in Malaysia is very strong. Hospitals and major industries and institutions (such as petrochemical factories and the Kuala Lumpur International Airport) have detailed emergency and disaster plans. In the public health area, the Disease Control Division (DCD) of the Ministry of Health (MoH) has been the main leading agency on issues concerning outbreaks of infectious diseases.

MATERIALS AND METHODS

Health emergency and disaster preparedness

In order to strengthen the role of Public Health interventions in health emergency and disaster response, it is first necessary to increase the level of preparedness within the Ministry of Health. To achieve this, Public Health Emergency and Disaster Coordinating (PHEDC) Committee was established. In relation to preparedness, PHEDC coordinates all public health activities related to health emergency and disaster preparedness, response, and recovery. It also establishes and maintains an information center and database on health emergency and disaster public health issues available to district and state-level health managers and other relevant organizations (Figs 1 and 2). PHEDC sets-up the Public Health Emergency Operations Room when a health emergency/disaster is declared (Fig 3).

Standard Operating Procedures (SOPs) for Public Health Response

SOPs that are available for minor or mass casualties(Ishak *et al*, 2004) include:

a. Search and rescue

b. Treatment and care of victims (*ie*, dispose of the dead, render first aid, identification and tagging of casualties, assessment and identified medical treatment,

Fig 1–Crisis Preparedness and Response Centre, Kuala Lumpur, Malaysia.

Fig 3–Tsunami 2004. Drugs, medical supplies, and equipment response.

Fig 2–Crisis Preparedness and Response Centre (CPRC) in action.

Fig 4–A local school hall is converted into a temporary emergency settlement for disaster victims.

hospitalization and medical evacuation).

c. Evacuations from stricken areas, immediately or when the need arises later.

d. Provide shelter for victims, whose houses have been destroyed or rendered unusable, such as making urgent repairs, issuing tents for temporary shelter, and accommodating groups of the homeless in community halls or schools (Fig4).

e. Food distribution to victims and emergency workers, and estimate damage to crops and food stocks, and available food reserves.

f. Communications, such as radio, telephone, telex, and facsimile need to be established.

g. Clearance and access to key roads, airfields, and ports to allow access for vehicles, aircraft, helicopters, and ships.

h. Water and power supplies to be reestablished or make temporary arrangements for their supply.

i. Subsistence supplies (clothing, disaster kits, cooking utensils, plastic sheets, etc).

j. Health and medical services for vic-

tims (treatments for cough and cold, fever, diarrhea, etc).

k. Sanitation and hygiene (community kitchen, temporary shelter, toilets, water supplies, and solid-waste disposal, etc).

l. Public information on self-help information about hygiene, and missing relatives.

m. Security to prevent looting and unnecessary damage.

n. Construction equipment for building repair.

o. Welfare inquiry concerning the welfare of citizens and residents, including tracing missing persons.

p. Maintenance of public morale, such as provision of counseling and spiritual support.

q. Other requirement that will be identified later.

Assesing pre-crisis situations (Preparedness Phase)

Knowledge of risk and appropriate response are shared through public information and education systems. Training courses, workshops, and extension programs for at-risk groups, disaster responders, and volunteers are all conducted to increase capacity and promote self-reliance. Drills increase awareness about preparedness and thus contribute to its sustainability. Public information (radio, television) and school systems are used to share knowledge about hazards and risks, and the appropriate response to emergencies. The response mechanisms include evacuation procedures and shelters, search and rescue teams, needs assessment teams, activation of emergency lifeline systems, reception centers, and shelters for displaced people.

Rapid health assessment for sudden population displacements during seasonal /flash floods.

The rapid assessment consists of:

a. Defining the area where the displaced are located.

b. Deciding what information should be collected.

c. Assessing health status; state of health, nutritional status, mortality, and morbidity.

d. Assessing environmental conditions, that is, shelter and water; and

e. Assessing local response capacity and additional immediate needs: food supply and sources, feeding programs, health service and infrastructure, drugs and vaccines and non-food items.

Participation and funding from the private sectors during disasters

a. Donations and grants, in cash or in kind (goods, services, facilities) to other organizations and groups working in disaster reduction, or directly to beneficiaries.

b. Providing facilities, technical skills or volunteers, either free-of-charge (pro bono) or at subsidized rates.

c. Work in committees and sharing expertise in discussion groups.

d. Business continuity/recovery as a basis for local-level mitigation.

e. Collective initiatives through creation of NGOs.

International assistance is initiated.

DISCUSSION

Preparedness is usually regarded as comprising measures that enable governments, organizations, communities, and individuals to respond rapidly and effectively to disaster situations. For example, the formulation and preparation of up-to-date, practical, and effective counter-disaster plan which can be brought into effect whenever required. It also consists of the provision of warning systems, emergency communication or siren, public education, awareness, and training programs, including exercises and testing plans.

Response measures are usually those that are taken immediately prior to and following the disaster. It is also called "emergency response," which implies that it involves a relatively shorter time and deals with the immediate effects and needs of affected population when the disaster or a state of emergency has been declared by the government. The efficacy of an emergency response indicates the preparedness level of a nation and its contributing organizations.

Malaysia experienced heavy rains in December 2006 and January 2007, resulting in flash floods in the south, mainly in the state of Johor. A needs assessment mission was fielded to Johor on 21-23 February 2007. A joint assessment team, comprising MERCY Malaysia, local government officials, community representatives, and invited experts from Kyoto University in Japan and SEEDS in India, carried out the assessment. Based on the findings from the assessment, a project proposal was prepared to adapt community based climate change and implicate disaster risk reduction in Malaysia [Asian Disaster Reduction and Response Network (ADRRN) implements active collaboration within Asian countries by exchanging human resources and expertise to provide support for needs assessments and project planning; Asian Disaster , 2007].

Also in response to the above situation, the Malaysian Red Crescent Society (MRCS) with the aid of the International Federation of Red Cross and Red Crescent Societies [Federation's Disaster Relief Emergency Fund (DREF) USD 41,425 was allocated to support the Malaysia Red Crescent's initial assessment and relief effort in response to the country's worst flooding in years; International Federation, 2006] efficiently released boats and emergency food, and other relief to assist the ongoing operations in Segamat and Kampung Pagoh 2. In addition, MRCS staff and volunteers have undertaken:

a. Relief work and establishment of evacuation centers for displaced people,

b. Mass scale cooking for those affected,

c. Boat rescues, and

d. Assessment of the affected area through a regional disaster response team (RDRT).

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