



THAILAND

## MAGNITUDE

Country	Fatalities	Missing <sup>1</sup>	Total	Source
Thailand <sup>2</sup>	8212		8212	Department of Disaster Prevention and Mitigation, Ministry of Interior, October 2005

1. Some countries have not disaggregated between the deceased and the missing
2. In Thailand, fatalities include 2448 foreign tourists from 37 other countries.

- › Number of fatalities: 8212. (Source: Government of Thailand. Note that this figure includes 2448 non-Thai people from 37 other countries.)
- › Number of people missing: 2817. (Source: UN Resident Coordinator, Thailand)
- › Number of people displaced: 6000. (Source: UN Development Program [UNDP], Six Month Cumulative Totals, June 2005)

## PHASE I: EMERGENCY RELIEF

### ASSESSMENT

In Thailand, six provinces in the southern region were the most affected. These were popular international tourist destinations such as Phuket, Ranong, Satun and Trang, Krabi and Phang Nga.

#### Affected areas

A total of 25 districts, 95 tambons and 407 villages were affected; 47 villages were almost completely destroyed. Phang Nga, Phuket and Krabi districts accounted for 97% of all deaths, a considerable number of which comprised tourists from 37 countries. There was minimal damage to the health and transport/logistics infrastructure, and the geographical extent of the damage was relatively limited.

#### Affected population

The tsunami affected 66 600 people. More than 17 000 had injuries of varying degrees, according to the Thai Ministry of Public Health (MoPH). Over 8000 people were in urgent need of medical attention. The communication and



information system had broken down, and accurate information was lacking. Subjective assessments were made through the regional offices of the Department of Health (DoH).

## Impact on vulnerable populations

- An estimated 50 000 children were affected by the tsunami and, according to the Ministry of Education, an estimated 1480 children lost one or both parents. (Source: UN Resident Coordinator, Thailand, Situation Report No. 19, October 2005)
- More women than men were killed in the tsunami. The UN Children's Fund (UNICEF) warned that this may render children more vulnerable to forms of abuse, including sexual exploitation. (Source: UN Resident Coordinator, Thailand, 13 May 2005)

### The response

The Thailand disaster was the first to draw international attention because of media coverage. Pre-existing systems capacity in the health sector was strong, due to Thailand's prior experience with epidemics of sudden acute respiratory syndrome (SARS) and avian influenza. There was a rapid social response from the local community and formal sectors. The first task during the initial 24 hours was the rescue and treatment of survivors. Those with severe injuries were evacuated to the cities, mostly Bangkok. The mortality rate of those patients who reached hospitals was only 0.3%.

The MoPH rapidly activated mass casualty plans and mobilized over 200 doctors and nurses to the affected areas. On 26 December 2004, a central command centre was set up in Bangkok. Each of the affected provinces was equipped with similar centres. More than 100 teams were deployed to provide emergency medical care, while 12 other teams provided technical support and health education. The first team from Bangkok reached the field six hours after the tsunami struck. The Government did not make an appeal for aid, but welcomed technical support.

The MoPH deployed surveillance and rapid response teams (SRRT) and, within a week, emergency disease surveillance systems were also functioning in the affected areas.

Two Dead Victims Identification (DVI) centres were set up in Phang Nga, one for foreigners and the other for the local people. Temples made their land available for



## Damages and losses

- ❑ Six southern provinces along the Andaman coastline were severely impacted.
- ❑ Over 120 000 individuals working in the tourism sector lost their jobs. An additional 30 000 individuals employed in the fisheries sector lost their sources of livelihood. (Source: UN Resident Coordinator, Thailand, Six Month Report)
- ❑ A total of 4806 houses were affected. Of these, 3302 were completely destroyed, and 1504 were partially damaged. (Source: UN Resident Coordinator, Thailand, Situation Report No. 11, 1 April 2005)
- ❑ Approximately 5000 boats were lost or damaged. (Source: UN Resident Country Team Thailand, November 2005)
- ❑ 2000 hectares of agricultural land were destroyed. (Source: UN Country Team Thailand, November 2005)
- ❑ A total of 305 acres of mangroves, 3600 acres of coral, and 400 seagrass beds were impacted. (Source: UN Country Team Thailand, November 2005)
- ❑ 102 large ponds, 2321 wells, and two ground wells were contaminated. (Source: UN Country Team Thailand, November 2005)
- ❑ The loss of income in the tourist industry was estimated to be US\$ 25 million monthly. (Source: Thailand Development Research Institute, Department of Disaster Prevention and Mitigation, 7 July 2005)
- ❑ The Thai Hotels Association estimated that hotel occupancy fell by 20% in 2005. Current Thailand Tourism Authority figures suggest that Andaman region arrivals are down by 30%. (Source: UN Resident Coordinator Thailand)

## Financial implications

- ❑ Losses were estimated at US\$ 1.6 billion and costs of repairing damage at US\$ 482 million. (Source: UN Country Team Thailand, November 2005)
- ❑ A total of US\$ 21.4 million was requested in humanitarian assistance through the Flash Appeal. Of that, Thailand received US\$ 18 million, of which US\$ 7.5 million was spent as of November 2005. (Source: UN Office for the Coordination of Humanitarian Affairs [OCHA] Expenditure Tracking System). A further US\$ 38.3 million was delivered in mid- to long-term recovery programming for 2005–06. (Source: UN Resident Coordinator, Thailand, 21 June 2005)

this purpose, in keeping with the Thai culture. Several foreign teams and forensic experts assisted the government with identification of bodies and legal aspects.

Immediately after the tsunami struck, the WHO Country Office got in touch with the MoPH. The WHO representative travelled to Southern Thailand to assist the Government in its needs assessment. SEARO set up a coordination centre in the UN Building (Bangkok) called the WHO Inter-country Crisis Support Unit (ICSU) for Tsunami Response.

### Partnerships

Within 72 hours, a UN Disaster and Assessment Coordination (UNDAC) mission from OCHA, Geneva was in Phuket. The UNDAC team assisted local authorities in the coordination of international support, provided an informal clearing house function for international partners, undertook initial needs assessments, and provided daily status reports to the UNCT and OCHA. WHO officials formed a part of the OCHA team.

A UN country meeting was held in early January 2005 with representatives of diplomatic missions and donor agencies. UN agencies, donors and representatives of embassies identified areas of support.

To ensure a coordinated and joint response by the UN agencies in Thailand, the UN Humanitarian Coordinator immediately set up a Disaster Management Team (DMT), bringing together the Heads of UNCT agencies to meet on a regular basis to coordinate support to Thailand.

WHO supported existing MoPH programmes and initiatives, and provided a link to international partners such as the Centers for Disease Control (CDC), Atlanta; New York City Department of Health; bilateral donors and other UN agencies.

### Taking stock of the situation

The disposal of countless corpses was the most pressing task at hand in the early days. Many of those who had died did not have a family claimant. Several were foreign nationals and identifying the bodies was a problem. The government and health agencies were worried about the possible threat to health and the environment from the multitude of bodies. Sensitivity to cultural needs was required while disposing of dead bodies.

### Health priorities for WHO

WHO provided health education through WHO's guidelines on appropriate



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management of dead bodies, and explained that corpses did not pose a disease threat, but advised workers handling corpses to use protective clothing, masks and gloves. In addition, the Organization facilitated the availability of forensic experts to help in identification of the dead.

The Thai government also requested WHO's help in the area of mental health.

### Health situation

Children, migrant workers and their families were deeply traumatized mentally. The MoPH surveyed over 10 000 people in the first two weeks of the disaster and treated many of the affected survivors for mental stress.

Within a week, the MoPH also introduced a disease surveillance system to detect diarrhoea, food poisoning, and respiratory and wound infections. SRRT were deployed to four of the six provinces most severely affected—Phuket, Phang Nga, Krabi and Ranong. The role of the SRRT was to assess health needs and risk of outbreaks, and set up surveillance systems. In case of a suspected outbreak, appropriate investigations were carried out and disease control measures initiated. The teams also assessed the response to these measures.

The information obtained from the SSRT was shared with WHO on a routine basis.

## COORDINATION

The government was in control of the situation from the beginning and established a coordinative structure. Various ministries handled various aspects:

- › Ministry of Interior: Responsible for overall coordination
- › Ministry of Public Health: Situation in hospitals, disease surveillance and control, mental health, environmental health, sanitation
- › Ministry of Foreign Affairs: International community
- › Army: Coordination and rescue
- › Police and Ministry of Justice: Forensic (in addition, there were 31 international forensic teams active in the affected areas)
- › Ministry of Social Welfare and Human Security: Initial compensation

## GAP-FILLING AND CAPACITY-BUILDING

The Thai government requested technical support from WHO and its partners.



## PHASE II: ACTIVE INTERVENTIONS

### ASSESSMENTS AND MONITORING

All basic urgent needs had been dealt with in the emergency phase. Schools had resumed within two weeks despite ongoing repair work. Debris was being removed.

Health assessments were conducted rapidly by the command centres set up in each province. Immediate health needs were identified and public health interventions prioritized. To meet these needs, the MoPH rapidly activated mass casualty plans and deployed personnel and resources. Five teams conducted active surveillance and investigated potential outbreaks. Regional teams were sent to the six affected provinces.

The surveillance system used to track and respond to the SARS outbreak was built upon, so that risks of outbreak could be rapidly assessed and addressed. Sanitation, environmental and community mental health needs were also assessed.

Laboratories were supplemented with additional staff and equipment. Data collection was done on a daily basis from all hospital and health units using a WHO rapid assessment tool.

Monitoring was done for diseases with epidemic potential through the data collected by the SRRT. The diseases that were mostly found included diarrhoea, infected wounds and atypical pneumonia. Dengue, malaria, jaundice, conjunctivitis, chicken pox and mumps were also reported. However, the incidence of these diseases was no higher than that reported in previous years.

### Role of WHO

The Thai Government requested WHO's assistance in conducting rapid health and needs assessment, and monitoring and reporting communicable disease outbreaks. WHO also provided technical information and guidelines for forensic operations and psychological and mental health, sanitation and water safety, and health promotion. Medical and rehabilitation care of elderly patients was also supported by WHO.

### COORDINATION AND GAP-FILLING

WHO's biggest contribution was the training and strengthening of the public health infrastructure that it had been providing in the past. The most important aspect was the training of field epidemiologists under the Field Epidemiology Training Programme (FETP) and capacity-building in the area of disaster preparedness.

Infrastructure, staffing and funding support was provided for forensic operations and psychosocial trauma. Capacity-strengthening was done for active disease surveillance and environmental health in emergencies. WHO provided laboratory support to the Department of Medical Science.

WHO funded over 30 projects, including:

- › Strengthening expertise in disaster preparedness including engineering aspects for building hospitals and health settings
- › Strengthening disease surveillance and response
- › Providing psychological care and mental health support (particularly in the area of long-term psychological effects of the disaster on children)
- › Development of environmental health, health promotion, care and treatment services
- › Documentation and sharing of experiences.



### Health systems and infrastructure

A Central Operation Centre was established in Phuket and a high-ranking health administrator was appointed the health commander in each province. Local health offices were also set up. A Health Rehabilitation Centre was established in the affected provinces to oversee work done at the district level. In addition to teams at the local level, the Thai Government mobilized about 80 doctors.

### Water and sanitation

Sanitation teams were assembled from the field operation teams of the DoH's Regional Centres, and worked with over 2000 volunteers. Their role was to improve sanitation at the affected sites, and ensure safe water supply through water treatment. The Department of Medical Science provided laboratory support.

WHO assisted in sanitation improvement at the affected sites, and in water quality monitoring.



Surveillance was also done for food safety and improvement, and for disposal of garbage and waste management.

### Surveillance systems

Surveillance and Rapid Response Teams set up surveillance measures, conducted outbreak investigations, initiated and coordinated disease prevention and control, and assessed the response to control measures implemented. The MoPH implemented active surveillance for 20 diseases, as well as for wound infection and electric shock in all the affected districts.

Vector control teams sprayed insecticides and provided health education. Spraying was carried out at the affected sites, corpse collection areas and around the shelters. Active surveillance, and prevention and control of vector-borne diseases were carried out by these teams.

Data were collected from all medical facilities (77 health centres, 22 public hospitals and four private hospitals), two shelters for displaced people and the two forensic identification centres. Surveillance team members visited 119 sites daily, and collected data on the syndromic reporting of epidemic-prone diseases by age, sex and nationality from local hospitals and health centres, private hospitals and clinics, rescue and relief centres, and first-aid units. Daily summary reports for the 20 diseases were prepared and the information was analysed, with the population data for 2004 used as a baseline reference for incidences.

The expertise of the field epidemiologists trained by WHO and US/CDC under the FETP was fully utilized.

### Child and adolescent health

Official records indicated that there were 928 orphans who had lost both parents. Of these, only two were in a situation where they could not be cared for by relatives, highlighting the extended family concept which is a part of Thai culture. No specific child-focused mental health interventions could be provided for affected children and adolescents, but a symptom checklist was developed.

Problems among school-age children were addressed through the previously established School Advisory Programme, which was in place in all schools. This was used to identify “high-risk” children. Almost all schools had a guidance teacher trained by child psychiatrists from the DoPH, who identified problems and provided group therapy.

Children were also provided routine health-care services through the





community clinic system. The Mental Health Recovery Centre (MHRC) of the DMH implemented child recovery activities and supported UNICEF, the Adventist Development and Relief Agency (ADRA) and World Vision in these activities.

### Mental health

The Thai Government mobilized its own resources. The first mobile mental health team visited the affected community on 29 December 2004. Six mobile teams of mental health specialists, one for each affected Province, assisted the population. The DMH opened the MHRC in Phang Nga Province with a psychiatrist and part-time mobile support teams from Surat Thani Psychiatric Hospital. This programme will run for three years.

The country's system of village health volunteers (VHVs) served as a model for the provision of psychosocial support to the tsunami-affected people. More than 700 000 VHVs were mobilized for community-based psychosocial support. The Thai Red Cross mobilized thousands of volunteer workers from all over Thailand to give assistance and support. Locals who needed in-depth mental health support were sent to Surat Thani Psychiatric Hospital and foreigners were sent to Phang Nga General Province Hospital.

As of 19 January 2005, a total of 7423 survivors had sought psychiatric help (MOPH unpublished data, 2005).

Community health centre staff visited every affected family and if any of them had symptoms related to mental health, the WHO GHQ-12 was administered. Based on the score, affected persons were referred to the mobile mental health team for assessment and appropriate care. Repeated administration of the questionnaire to the same people showed that the level of psychological distress diminished over time, indicating a positive response to the interventions.

Thailand was the only country that carried out a structured, quantitative assessment of psychological distress in the community. This information was used during the emergency phase for evidence-based psychological support and to measure the outcome of the relief efforts.

WHO SEARO assembled a team of mental health experts who visited Thailand; they assessed that the work done by the volunteers was outstanding. Teachers, monks and other partners supplemented the efforts of the volunteers. The DMH produced information to be used by lay people specifically for the support of survivors (one specifically for use by monks). However, further mental health interventions will be needed for residents of coastal communities.

## Communicable diseases

By 9 January 2005, the MoPH had mobilized a team of 200 surveillance and response officials to investigate disease outbreaks in the four provinces that suffered the most casualties from the tsunami. Since 1970, the MoPH had been operating a national surveillance system for infectious diseases by using a standard reporting form, which had 68 diseases under surveillance by 2000. The MoPH implemented active surveillance for 20 diseases, based on the national passive surveillance system for infectious diseases. No outbreaks of communicable diseases were reported.

## CAPACITY-BUILDING

UN agencies

- ▶ WHO set up operations centres at country and subregional levels to coordinate activities with UN and government counterparts.
- ▶ UNICEF expressed concern on the protection of children in open camps. In Phang Nga, systems were not in place, and there were rumours of children, particularly orphans, being kidnapped. There was also the danger of sexual abuse. Training in psychosocial rehabilitation was held for teachers in all schools in Phang Nga Province.
- ▶ FAO jointly with the Ministry of Agriculture conducted technical assessments.
- ▶ UNHCR sought information on the number of displaced migrant workers (registered and illegal).
- ▶ WFP assessed the food situation and declared that there was no immediate need for food.



From relief to recovery



## PHASE III: REVIEW AND CONSOLIDATION

### ASSESSMENTS AND MONITORING

The tsunami was a disaster of great magnitude such that systems in place for preparedness were tested to the maximum. Indeed, strengthening and more exercises and training were needed to ensure emergency preparedness. Essential items (including vaccines and medicines) needed to be stockpiled adequately in case of emergencies, which were found lacking during the tsunami disaster. Communication systems also needed enhancement.

Restructuring of the MoPH was required for disaster management, with staff trained for the purpose. A pre-planned coordination and command system needed to be put in place. Thailand's capacity for international coordination was also limited.

A joint mission (UNDP, FAO, World Bank) looked into the medium- and long-term recovery phase. The mission assessed livelihood recovery and environmental rehabilitation.

The experiences in Thailand underscored the value of written and rehearsed disaster plans, capacity for rapid mobilization, local coordination of relief activities and active public health surveillance.

In the area of mental health, although the infrastructure was in place, Thailand's mental health services were understaffed at all levels, in particular at the level of community-based care and services. The DMH is working with the Medical Council for solutions; developing specialist psychiatric nursing, increasing medical practitioner skills, scholarships and the number of psychiatric residencies.

The DMH "National Guidelines for Mental Health Interventions in Natural Disasters" was found to be comprehensive but did not go far enough. At the community level it did not cover planning for preparedness in emergency.

### COORDINATION AND GAP-FILLING

The MoPH was assisted by WHO in over 30 projects, including forensic science, the architectural engineering aspects of building hospitals and other public health infrastructure in disaster-prone areas, mental health, and capacity-building in disease surveillance as well as the development of mobile emergency response units.

The communication team at SEARO was strengthened with additional staff and professional communication officers were in place in Thailand and in the Regional Office for the longer term.



WHO played a supporting role, enabling the government to further strengthen the national capacity and quality of the health force. The project on management of dead bodies (including forensic identification of dead bodies) contributed to building capacity at the Regional level. WHO Thailand has since worked closely with the MoPH on the development, implementation, monitoring and coordination of disaster relief from the emergency phase to the rehabilitation phase.

One of WHO's most important roles was assisting the health authorities in coordinating the work of hundreds of health agencies and NGOs involved in tsunami relief activities.

### ACHIEVEMENTS

The main thrust for mobilization of multisectoral cooperation and national resources was given by the leadership of the Government and MoPH administrators.

- › The field coordination and command system worked, although it took time to establish, and contributed to the success of disease control and fast recovery of local systems.
- › There were no disease epidemics.
- › A Mental Health Centre was established and training programmes for health volunteers conducted.
- › Guidelines were revised for emergency health management and preparedness.
- › Public health infrastructure was strengthened.
- › Information and communication systems were improved.
- › Technical specialists were trained in all facets of emergency preparedness.
- › Technical capacity was built in the areas of forensic medicine, psychosocial care, epidemiology, migrant health, and disaster preparedness and response.

### CHALLENGES AHEAD

*To do better at the national level, Thailand needs to undertake the following:*

- › Re-establish the standing office at the MoPH to coordinate preparedness and response during public health emergencies.
- › Assign and train persons responsible for coordination of public health emergencies at the provincial and local levels.
- › Further develop preparedness plans for disaster management at the national and local levels, and exercise the plans.





- Build capacity for surveillance and disease control such as training staff and strengthening the surveillance network.
- Provide further mental health interventions for tsunami-affected residents of coastal communities.
- Improve the infrastructure for and quality control of water and sanitation.
- Further train laboratory staff and improve laboratory facilities.
- Improve systems for procurement, stockpiling, monitoring and supply of essential items for a public health emergency response.
- Promote public education and communication on the prevention as well as reduction of public health risks.

*To do better at the international level, the following issues were identified:*

- Collaborate to develop a regional/international early warning system for public health threats and disasters.
- Advocate and cooperate in the establishment of international stockpiles (e.g. vaccines, medicines), urging WHO to take lead in the development of such stockpiles.
- Improve organizational capacity for international communication and coordination.