



Three months after the Indian Ocean earthquake-tsunami

Health consequences and WHO's response

General overview

In the early hours of the morning of Sunday 26 December 2004 a massive earthquake measuring 9.0 on the Richter scale struck the west of northern Sumatra. The quake triggered a powerful tsunami that swept the coasts of neighbouring countries and causing serious damage and loss of life. At least five million people were affected in Indonesia, Sri Lanka, Maldives, India, Thailand, Maldives, Seychelles, Myanmar. The death toll exceeded 280,000 people, and more than one million persons were displaced as a result of the destruction.

Many hospitals and health centres were destroyed or damaged with health workers among the victims. In some places, water supplies were disrupted and contaminated, making clean drinking water difficult to obtain. Sanitation facilities and sewage treatment works were damaged. All of which could potentially contribute to diarrhoeal disease outbreaks. Diseases such as salmonellosis, typhoid, cholera, hepatitis, and shigellosis were feared, particularly in the temporary camps, which soon lacked adequate sanitation for accommodating an increasing amount of displaced people. Measles and acute respiratory infection, easily transmitted in overcrowded camps and having resulted in many instances in high mortality in disaster survivors, had to be watched.

Initially, injury-related tetanus was also a serious initial threat as were, later on, mosquito-borne diseases such as malaria and dengue due to pools of stagnant water.

The traumatic event of the 26 December 2004 also left behind individual and social distress which will require long term attention.

The immediate response to health threats

National health professionals, often supported by local and international NGOs, UN agencies, and other partners, reacted immediately. As WHO became aware of the scale of the disaster it focused, quickly, on the potential health threats faced by the survivors, and the risk that they might suffer - or even die - as a result of disease. WHO provided support for a collective response and identified as a primary objective the support to national health authorities so as to protect the health of survivors - particularly the most vulnerable people (the very young and old, pregnant and lactating women, those with chronic diseases and those with difficulties accessing services). Priority was given to:

- monitoring risks to public health through the early warning of disease threats and the timely organization of any necessary response,
- Supporting the health sector response and assisting in the recovery and rehabilitation of the countries' health system, including replacement of lost assets and provision of technical expertise.

As public scare was looming, WHO provided immediate guidance on disposal of dead bodies and disseminated widely information on the non immediate risk these were representing. It also provided information on food poisoning as some cases had been detected.

Controlling communicable diseases

WHO immediately activated the [Global Outbreak Alert and Response Network \(GOARN\)](#). As a result, over 120 of the world's best disease surveillance and response experts were posted to Tsunami-affected communities within days. Others were placed on standby. Existing disease surveillance systems were strengthened; within two

weeks of the disaster, rudimentary early warning systems to identify outbreaks of serious disease were in place within all affected areas. They included geographical information systems (GIS) for health mapping and health related databases. Cases of diarrhoea, typhoid, hepatitis, viral fever, dysentery, malaria, dengue, and measles were identified and promptly addressed.

Assessing the health situation

In every affected country WHO teamed up with Ministry of Health officials and other partners within the United Nations Country Team (UNCT) to carry out rapid health assessments to determine the most pressing needs of the populations. In Indonesia, although good information was available for the town of Banda Aceh and the area immediately around it, elsewhere information was limited or unavailable due to insecurity, impassable roads, and damaged bridges. WHO partnered with other UN agencies, the Indonesian government and the US military to conduct helicopter rapid health assessments from the aircraft carrier USS Abraham Lincoln along the otherwise inaccessible west coast of Aceh.

Coordinating health actors

Coordination mechanisms, regular sharing of information and joint planning have been crucial to avoid overlapping and to ensure health assistance to all those in need. WHO worked with the ministries of health, UNICEF, IFRC, NGOs and other partners to support all health actors to address the situation at local level in the most effective way. In all countries WHO coordinated the response in the health sector. Operation rooms were set up in WHO country and regional offices as well as in the HQ to track the situation in real time on the ground and to respond quickly.

Filling in critical gaps

WHO dispatched over two hundred world leading experts in communicable disease surveillance, clinical management of common diseases, food safety, water and sanitation, injury treatment, laboratory support to post-disaster communicable disease surveillance, routine immunization expertise and mental health. Their remit was to address and advise on the specific health-related issues faced by each of the countries. WHO ensured that 191 New Emergency Health Medicine and Dressing Kits (NEHK), were supplied - in close co-operation with other agencies. These covered the primary health care needs of almost two million persons for three months. Also provided were 100 surgical kits enabling 10,000 surgical interventions, and 40 diarrhoea kits to treat 4,000 severe cases. Eighty-one cars and telecommunication equipment were dispatched for use in affected areas. More than 20 health logisticians ensured that people, supplies, and medicines reached the places where they were most needed.

Building national capacities to deal with crises

Thanks to its long presence at country level and its partnerships with the ministries of Health in the affected countries, WHO was able to train and support health workers to address public health issues in post-disaster situation. Training included water quality control, rapid health assessment, monitoring and management of infectious diseases, management of clinical waste, provision of psychosocial and mental health, health information system and public information campaigns to improve hygiene.

Three months later

Disease surveillance and early warning systems have fulfilled their role. So far, there have been no major disease outbreaks. WHO credits this to the resilience of the public health systems and response capabilities of the affected countries, the hard work by local communities as well as national and international support. Concerns about potential epidemics from dead bodies have been addressed and it is now acknowledged that contamination from corpses is not a threat.

Through the coordination mechanisms, rapid assessments of needs have informed planning and resource allocation. Disease surveillance and outbreak early warning systems are now in place as well as laboratories to diagnose epidemic-prone diseases and water quality in all affected areas. Specialized staff provide healthcare and sanitation and there has been strategic stockpiling of vaccines and drugs to treat epidemic-prone diseases. Thousands of children have been vaccinated against measles. Mosquito control measures have applied like in Banda Aceh, Indonesia, where some 200,000 homes have been sprayed with insecticide and bed nets and plastic sheeting treated with insecticide distributed.

Reconstruction of healthcare facilities are underway and training of healthcare workers continues where necessary. Water supplies are chlorinated, leakages in distribution pipes are being detected and repaired, and set-up toilet facilities and water treatment are being maintained. Rubbish bins and collection of waste ensure effective disposal of solid waste. Hygiene promotion is still ongoing with training of workers and distribution of hygiene kits. Seventy-eight technical guidelines covering various aspects of crisis management are now available to health authorities. Information is easily accessible to those going to, or returning from, the affected areas.

While millions of Tsunami survivors throughout South Asia and East Africa have escaped the horrors of major epidemics of communicable diseases in the immediate aftermath of the disaster, affected communities still face enormous challenges including the continued looming of well-documented health threats and psychological traumas from the loss of loved ones. In addition, further earthquakes and tsunamis remain a possibility as confirmed by the continuing seismic activity in Indonesia - the 28 March quake affecting Nias and neighbouring Islands off Sumatra, and the daily aftershocks.

The situation calls for a sustained international support to prevent risk of epidemics and diseases in a weakened populations and fragile health systems.

Linking relief to development: support for health system rehabilitation

Three months after the disaster, most affected countries are building on acute emergency relief work with an increased focus on rehabilitating systems for sustained improvements to services. WHO is encouraging health sector agencies to co-ordinate with national authorities and each other, working together on a programme, and consistent projects, that empower health sector action.

The priority is to ensure the rehabilitation of health sectors in ways that respond optimally to the needs of the affected population and strengthen the resilience of the health system to natural and man-made hazards. The rehabilitated health system should ensure equitable access to effective services that reach an increasing proportion of the populations served than was the case before the Tsunami.

During the ASEAN summit held on the 6th of January 2005 in Jakarta, the emphasis for agencies concerned with the response was to move rapidly and support the rehabilitation of services. WHO Director General Dr Lee Jong-wook announced that his Organization would concentrate on building the capacity of national bodies to work effectively with all agencies involved in health service rehabilitation, supporting the effective operation of local and national institutions in the following priority actions:

- **Health Protection and Disease Prevention:** Those concerned with response should avoid being complacent and protect affected populations against the ongoing threat of disease outbreaks.
- **Health Policy and Coordination:** The support for recovery should reflect health policies that respond to the priority needs of all affected communities in an evidence-based, equitable and co-ordinated manner.
- **Health Services Delivery:** Health services must address the needs of vulnerable populations, emphasizing systems development, nutrition, immunization, reproductive and women's health, maternal and child health, care for chronic non-communicable diseases and mental health, safe water and sanitation, family planning, and both sexual and reproductive health.

The WHO presence in countries has been significantly strengthened by the roll-out of a logistic and administrative platform through which operations can be supported, and the recruitment of international public health experts with the experience and expertise needed for effective support to local governments, health institutions and civil society .

With regard to rehabilitation, national authorities are being supported by the World Bank, the Asian Development Bank, donor governments, international NGOs, academic groups, UN system agencies, and other partners at country level. The initial emphasis has been on comprehensive and standardized assessments of population needs, the provision of public health services and the availability of basic needs essential for population survival and health.

National authorities and those providing assistance have recognized the importance of reviewing progress and analysing their performance, so as to improve the provision of their services in real time. On 4-6 May 2005, the Royal Thai Government and WHO are convening a [Conference on the Health Aspects of the Tsunami](#) providing an opportunity for all interested parties to examine health issues, and to assess - critically - the timeliness, quality and impact of the collective response during the immediate relief phase and the early phase of recovery.