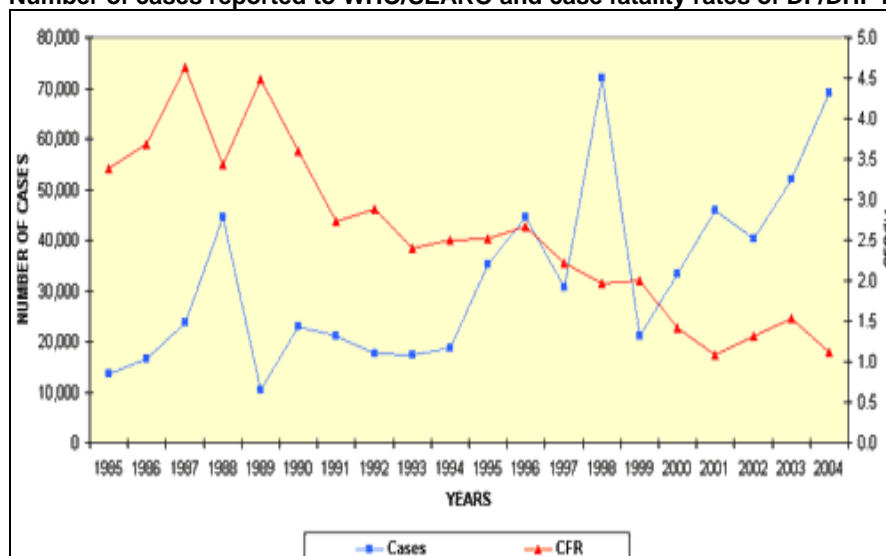


CD risk assesement: DF, DHF and DSS in Indonesia, February 2005.

Dengue fever (DF) with its severe manifestations such as Dengue Haemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS) is currently of major public health concern in the South East Asia region. Global estimates indicate that at least 100 countries are endemic for DHF and about 40% of the world population (2.5 billion people) are at risk in the tropics and sub-tropics. Over 50 million infections are reported annually. About 400,000 of the cases reported are of DHF, which causes high childhood mortality in several Asian countries. All countries affected by the Tsunami are endemic to dengue.

In Indonesia dengue is a major annual public health problem causing cyclical epidemics in urban centres. The disease is a leading cause of hospitalization and death among children. Epidemics have been consistently documented to occur between January and June. Attack rates among susceptibles are often 40 - 50%, but may reach 80 - 90%. The maximum cases recorded during epidemics in previous years were over 40,000 in 1988, 1996, 1998, 2001, 2003 and 2004, reaching 72,133 in 1998 and 69,017 in 2004.

Number of cases reported to WHO/SEARO and case fatality rates of DF/DHF in Indonesia (1985-2004*)



During the inter-epidemic years the incidence varied from 10,000 to 25,000 cases. The case fatality rate was high - up to 4.6 in 1987 and fluctuated between 2 and 3 per cent in 1991-1999. It has been less than 2 per cent since 2000, and lowered to 1.12 in 2004* (data to end of August 2004).

DEN-3 has been observed to be the predominant circulating virus serotype; DEN-4, DEN-2 and DEN-1 have also been confirmed in samples taken from patients during previous epidemics.

Laboratory confirmed cases of dengue were reported from the provinces of Aceh, Jambi, Banten, West Java, Central Java, Yogyakarta, East Java, South Kalimantan, Bali, West Nusa and Tenggara East Nusa in 2004.

Prevention and control of epidemic dengue requires effective control of *Ae. aegypti*. These efforts should ideally be intensified **before** the transmission season (during and after the rainy season) rather than on response measures. There is no specific medical treatment for the disease. However, fatalities are rare in the absence of the more severe dengue haemorrhagic fever. Without proper treatment, DHF case fatality rates can exceed 20%. Early treatment with intensive supportive therapy can relieve symptoms, prevent complications and reduce death rates from DHF and DSS to less than 1%. There is presently no vaccine recommended for public health use against dengue infection.

Post-tsunami risk for dengue in Indonesia.

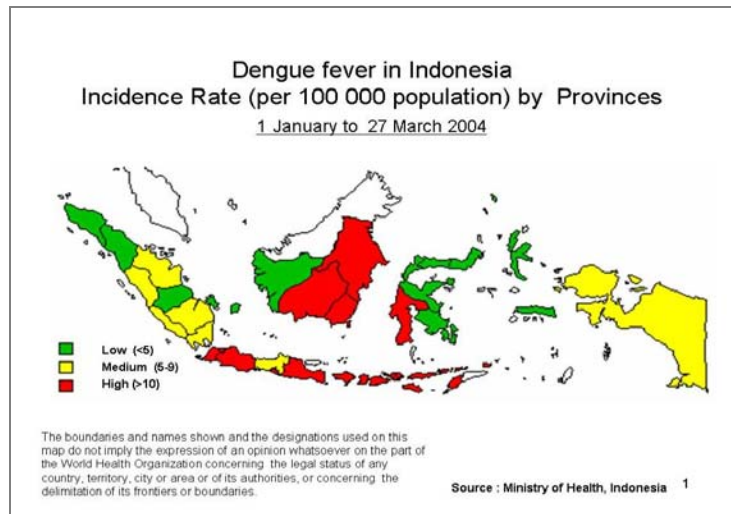
Though ecological and climatic factors influence the seasonal prevalence of the dengue mosquito vectors, factors related to human ecology in internally displaced persons camps determine the extent and intensity of vector breeding. In temporary shelters where drinking water comes from outside sources or from rainwater harvesting, there is an increased tendency to store drinking water in containers that may become breeding places of *Ae. aegypti* (and to a lesser extent of *Ae. albopictus*). Accumulation of rainwater in containers and other items of debris rapidly become *Aedes* breeding sites. Interruption of vector control activities in the area following the tsunami emergency has increased the risk of the disease.

Cases of dengue are currently being reported to various national authorities in the South Asia region. The Jakarta Health Agency has reported a steadily increasing number of cases in Jakarta. Since December 2004, at least 14 people have died and around 1,000 others fallen sick from dengue haemorrhagic fever in Jakarta, Bekasi, Tangerang, and Depok. Health officials have warned that unless precautionary measures are undertaken, the disease would continue to spread rapidly during this season.

Preliminary field assessments of dengue risk conducted in Banda Aceh by WHO and partners found no significant vector populations in the devastated area, at present attributed to persistent salt water pollution and lack of human hosts in the immediate vicinity. However, at the edge of areas affected by tsunami-related floods, Aedes vectors of dengue were observed biting and larvae were collected from container habitats. The presence of dengue vectors in this environment is as expected; the risk of dengue is ever-present, irrespective of the tsunami event.

Health centers are essential as an alert network and for early diagnosis and treatment of suspected cases. Through reporting by health care agencies into WHO/MOH Indonesia disease surveillance system established in Aceh two cases and one death have been documented. A case of dengue fever (IgM positive, DEN-4) is presently admitted to German Offshore Hospital with hemorrhagic symptoms from Aceh Utara district (6 hours driving distance east of Banda Aceh).¹

The control of dengue represents a major challenge to those providing health care services in the tsunami affected areas. While the focus remains on acute relief efforts in Aceh province, rehabilitation and reconstruction are gaining momentum in other tsunami affected areas of Indonesia. WHO is working with local and international health partners to facilitate implementation of recommended vector control measures, promote public health education, strengthen the clinical care systems for dengue case management, improve hospital preparedness, initiate training of health care personnel for clinical case management and provide guidance in dengue fever management in patients.



There is therefore an urgent need to further strengthen disease surveillance and improve rapid emergency response capability to contain outbreaks in the entire country.

- ❖ WHO recommended vector control measures should be instituted immediately and rigorously sustained over the main dengue transmission season from January through June.
- ❖ Particular emphasis should be placed on enhancing local disease surveillance, epidemic preparedness and response capacities to detect, prevent, control and treat dengue in the tsunami affected areas.
- ❖ Health care providers and the general population should be sensitized about the current dengue risk and personal protection measures.
- ❖ Administrative efforts should facilitate the population's access to prompt and effective clinical care, particularly for the internally displaced persons in the tsunami affected areas.

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¹ Aceh Epidemic Alert and Response team. Indonesia situation report update, 1 February 2005.