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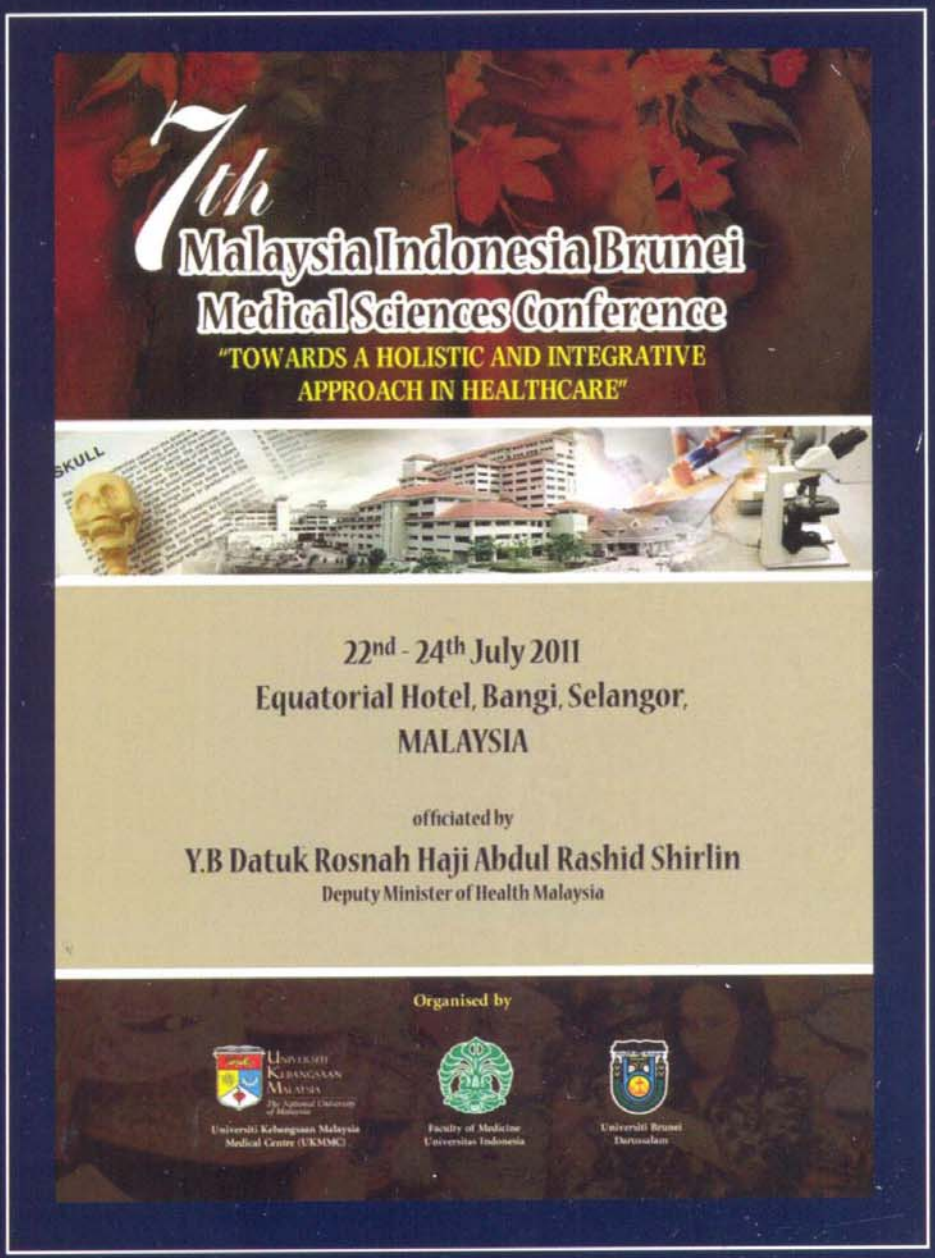

THE TSUNAMI EXPERIENCE: UNDERSTANDING HEALTH PROBLEM

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Indonesia is a country in the path of Ring of Fire, an area along the Pacific Ocean basin prone to volcanic eruptions and earthquakes. Indonesia has recently been struck by a series of major disasters that have largely affected cities: the 2004 tsunami and earthquakes (devastating the cities of Banda Aceh and Meulaboh) and the 2006 central Java earthquake (impacting the city and suburbs of Yogyakarta) with an ensuing tsunami (hitting the southwest Java resort town of Pangandaran), West Sumatera eathquake (2009), a magnitude of 7.7 earthquake struck Kepulauan Mentawai region of Sumatra (2010) and Merapi volcano eruption 2010 (Jogjakarta and central Java). In addition to this, a variety of natural disasters one after another has attacked Indonesia from Sumatra, Java, Nusa Tenggara, Sulawesi and Papua. The disaster that has happened includes floods, earthquakes with and without the tsunami and the eruption of volcanoes. Two big disasters with a wide amount of damage and huge losses are the earthquake and Tsunami in Aceh and earthquake in West Sumatra.

The 2004 Tsunami in Aceh was the worst natural disaster in decades. Hundred thousands of people died and building damages and losses were equivalent to 80% of the region's economic activity. The disasters left over 500,000 people homeless, with more than 100,000 homes in need of rebuilding. Damages and losses were calculated at US$4.5 billion, with the most affected sectors being housing, agriculture and fisheries, infrastructure, and the environment. Much of the impact was in the cities of Banda Aceh (one-quarter of the city's 400,000 people were killed) and Meulaboh (30,000 of the population of 120,000 were lost). Approximately 75% of health workers in Banda Aceh either died or were displaced from their homes. The international community responded to this disaster with the largest relief measures ever undertaken for a natural disaster.

The disaster occurred on the morning when the community was doing the morning activities. A terrible disaster that occurred just within a moment resulted in the death hundreds of thousands of residents. In the first hours and days after Tsunami, there was the breakdown of information from the city of Banda Aceh to the outside world. Electricity and telephone network were cut. This was why the help came too late. The problems that first arose was evacuating either the dead and life victims.

Various issues appear in the field are the lack of infrastructure and facilities for medical treatment, although gradually medical help arrived. The cases often found in hospitals were fractures, open wounds and also aspiration pneumonia. Various other diseases were encountered metabolic diseases arising from bad circumstances and limitations of medicines such as hypertension, diabetes mellitus, asthma, diarrhea and respiratory tract infections.

The tsunami and earth destroyed water and sanitation infrastructure through physical disruption of municipal water systems and contamination of wells with debris and salt water. As a result, large displaced populations may have been subject to an increased risk of waterborne disease. Health facility-based disease surveillance established by the government of Indonesia in collaboration with the World Health Organization showed that acute watery diarrhoea was the second leading cause of morbidity, accounting for 23% of 40,706 consultations. At that time, recognizing the importance of early access to safe water, some relief organizations immediately supplied water in tanker trucks and procured bottled water, while others promoted boiling. The chlorination of stored water either in tankers or at the household level was the only practice that was associated with a reduced risk of *E. coli* in drinking water. On the other hand a variety of health problems arising from lack of clean water and also health facilities were minimal. Therefore it needs to do a mobile clinic at the refugee sites to evaluate this programme.

Lessons learned from the disaster that happened were that public health is the main aspect to consider. Four aspects to consider in case of disaster: assessing damage and needs of the health sector; distinguishing the role of public health in humanitarian and recovery phases; incorporating disaster prevention and preparedness in the recovery; and address the needs of vulnerable groups. This is important in order to: establish a health priority, properly assessing the impact of a disaster on human health and the health care system is fundamental to: establish health care priorities, follow trends and reassess priorities, detect and respond to epidemics, evaluate programme effectiveness, ensure targeting of resources, assess the quality of health care.

During the relief phase, there is a need to collect data about huge losses (number of fatalities and injuries), assess the threat of outbreaks (especially epidemics), to determine what steps and investments need to be taken to respond to threats immediately and provide emergency assistance. At the stage of recovery, damage assessment needs to be changed into an integrated programme to revive the health sector and systems so that they are increasingly able to provide the necessary services to reduce morbidity and mortality. There is also a need for post-disaster epidemiological studies to understand and cope with changes in disease transmission, and post traumatic stress disorder / mental health to anticipate the unexpected problem in the future.