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Role of Dentists in Indonesian Disaster Victim Identification Operations: Religious & Cultural Aspects

Sahelangi P.¹, Novita M.²

¹Department of Forensic and Medico Legal, Faculty of Medicine Hasanuddin University, Makassar, Indonesia

²Biomedical Department, Faculty of Dentistry, Jember University, Jember, Indonesia

Corresponding author: petersahelangi@yahoo.com

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ABSTRACT

Indonesia is the largest archipelago in the world, consisting of five main islands and 17,500 smaller islands, spread across three seismic belts that run throughout the country. Indonesia is extremely prone to disasters, both natural and manmade. With a total population of nearly 250 million people, Indonesia's Muslim community exceeds 180 million – the largest Muslim population in the world. On December 26, 2004 an earthquake and tsunami hit Aceh resulting in an estimated 165,000 deaths (mostly Muslims) and half a million people displaced. The members of the Disaster Victim Identification (DVI) operations faced unique obstacles. Speed was required because families wished to bury their relatives within 24 hours (before the next prayer time) and the hot tropical climate caused rapid decomposition of bodies. At the same time, survivors needed medical help; there was total destruction of facilities; minimal equipment; ante mortem data destroyed by the flood; and no electricity, transportation, water or food. DVI was of necessity basic so that the team of 33 could process tens of thousands of victims. Lessons were learnt including the need to involve religious leaders immediately; revise the DVI protocols that were designed for manmade (and smaller) mass disasters; provision of individual cameras, laptops and portable x-ray devices; and attention to more efficient use of mass graves.

KEYWORDS: Indonesia; DVI; religion; cultural; mass disaster

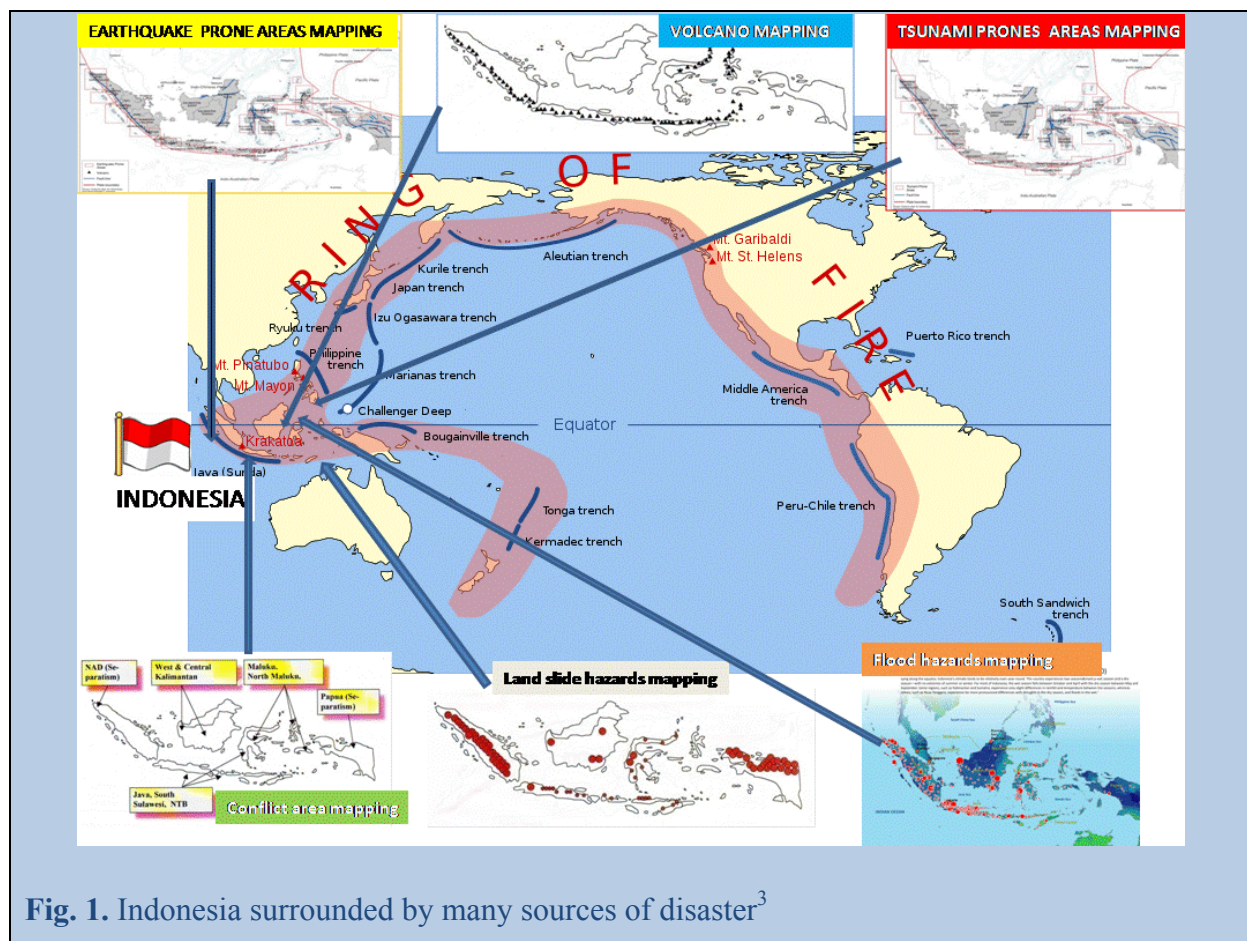
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BACKGROUND

Indonesia is the largest archipelago in the world with approximately 17,500 islands. It consists of five main islands and many smaller ones, and each has its own character, art, culture, allure, and scenic beauty. The islands of Indonesia are a result of the collision of three major plates in which the Australian-Indian plate in the South, the Eurasia plate in Northwest and

the Pacific plate in Northeast converge in the region of Southeast Asia (Fig. 1). The interactive motion of these three major plates and the effects of the smaller Philippine plate help explain why Indonesia is very prone to natural disasters like earthquakes, volcanic eruptions, tsunamis, typhoon, high tides, landslides triggered by monsoon rains, hot mud eruptions, rainy season's floods, and dry season's drought.^{1,2}



The National Disaster Management Agency Indonesia (Badan Penanggulangan Bencana Indonesia) reported that during the period 2002 to 2007 there were 2,253 cases of major disasters in Indonesia.⁴ Most of these are natural disasters but too many are manmade. The air, sea, and land transportation sectors in Indonesia are highly prone to accidents involving major loss of life in large-scale disasters. Since the beginning of the 2007 there had been 6 train accidents, 3 passenger ship accidents with a high number of casualties, 3 aviation accidents, one aircraft with 102 passengers disappeared in West Sulawesi Sea, one aircraft crash-landed at Juanda Airport Surabaya, and in March 7, 2007 a Garuda airplane with 133 passengers and 7 crews failed to make a proper landing and burst into flames at Jogja Airport with 21 fatalities (16 Indonesian, 5 Australian), 119 survivors, a number of whom were injured. Five terrorist bomb attacks happened in Indonesia since 2002. These manmade disaster statistics provide clear impression that similar or worse disasters are inevitable in the future.^{1,5}

How well prepared are we to deal with the worst-case scenarios? The government and all organizations involved have participated in discussions to answer this question, and as a result have established a

National Standard of Operating Procedure to regulate who will take the responsibility with minimal bureaucracy in the eventuality of a disaster happening.⁶

This paper covers the December 2004 tsunami in Aceh focusing on the religious and cultural concerns that accompanied victim identification, reflects on difficulties experienced and improvements that can be recommended for future events of this type.

ACEH TSUNAMI DVI- THE INITIAL RESPONSE

Indonesia has the fourth largest population in the world of nearly 250 million people (2010 data) and more than 86 percent (2000 census) adhere to Islam.⁷ Aceh is a special territory (Daerah Istimewa) of Indonesia, located on the northern tip of the island of Sumatra. Its full name is Daerah Istimewa Aceh (1959–2001), Nanggroe Aceh Darussalam (2001–2009) and Aceh (2009–present). The Aceh province has the highest proportion of Muslims in Indonesia with regional levels of Sharia law. Of the nearly 4.5 million people in Aceh, 98% identify as Muslims.⁷

On Sunday December 26, 2004 at 7.50 a.m. a large earthquake of 8.9 on the Richter scale occurred off the coast of Indonesia's Aceh province. It was followed 30 minutes later

by a tsunami that razed entire cities in Aceh west coast.³ Within a few minutes all economic and government activities in Aceh province totally ceased. More than 165,000 people were dead.⁸

The Indonesian Disaster Victim Identification (DVI) team consisted of 33 doctors and dentists who were attached to the police force. They were dispatched to Aceh using the special aircraft of the Chief of Indonesia National Police. They arrived at the disaster area 24 hours after the tsunami and immediately they started organizing their tasks. Indonesia already had guidelines recommended by the Identification Board of DVI Indonesia. To be identified a body should have one primary identifier (fingerprints, dental records, DNA profile) or two secondary identifiers (personal effects) and ante mortem/ post mortem comparison.^{1,9} These were to be used for the management of incidents with a large number of victims, however they had been developed from experiences gained following transport accidents and terrorist incidents. Large natural disasters like tsunami that cause many more deaths and local destruction, need more specific guidelines than those used for transport or terrorist activities.⁸

As in all disasters, it is important for survivors that the bodies of the dead are handled with respect and that the dead are identified carefully so that survivors know what has happened to their missing relatives. However, at the same time people are afraid of disease and epidemics resulting from many unburied bodies.⁸ Fear of disease is particularly strong in hot tropical climates where the decomposition of bodies can be rapid. To avoid this risk to the living, the hasty burial of the dead can occur either with or without authority and even before identification has been completed. In addition, the rapid identification of victims is requested for religious reasons. In Aceh the families of the victims insisted on burying the bodies of their relatives as soon as possible and within a maximum of 24 hours for religious reason.⁸ Both situations caused difficulties with the DVI operation and will be discussed later.

All 33 members of the Indonesian Police DVI team strived to identify the victims according to the DVI Interpol Guidelines.¹³ However, the situation and conditions in the field did not support a thorough identification process. There were a lot of obstacles during DVI in Aceh such as limited transport (most cars were totally destroyed by the tsunami) no

available gasoline for those cars left or brought in, all field forensic equipment was either severely limited or not available (refrigeration for preserving human remains, body protection, gloves), body bags were non-existent (all victims were wrapped in their own clothing usually a sarong which is a traditional Muslim cloth) (Fig. 2), and no clean water or food (the

team ate instant noodles). In the initial few days, visual identification was undertaken before the decomposition of the bodies.⁸ Primer identifier (finger prints, teeth and DNA) could not be used because the water from the flooding destroyed all of the records from the police office and hospitals.



Fig 2. The victims in front of Military Hospital (Kesdam) Banda Aceh

LEGAL, RELIGIOUS AND CULTURAL BACKGROUND

Legally, a person in Indonesia is presumed to be alive until a death certificate is issued

and burial cannot occur without it. To obtain a death certificate, a doctor must determine the cause of death and the identity of the person must be confirmed.

Complications arise when the death is not from pre-existing sickness or when the person cannot be immediately identified. In both instances, the law sets out regulations to be followed. An autopsy may be needed, specific victim identification processes including fingerprints, dental records and DNA analysis are undertaken, and a coroner may be required to give permission for burial. When identification cannot be made, the body will be kept in a morgue until released for burial by the coroner. In disasters where many bodies cannot be identified or stored appropriately, a temporary burial process can be performed following set procedures laid out by Interpol Guidelines. The authority to perform temporary burial in Indonesia is provided by DVI Commander. Missing people are presumed alive until they have been missing for one year.

On Saturday December 31, 2004 (five days after the tsunami) the Indonesian Council of Muslim Leaders (Majelis Ulama Indonesia) issued a decree concerning funeral ceremonies and burial of victims in Aceh fearing a health risk to the volunteers in the recovery response. (The hot and humid conditions in Aceh were causing decomposition of the bodies within two days). The decree modified some of the

religious requirements for burial. The decree placed the responsibility on the government for rapid burial but included the following to facilitate the burial process in the face of enormous numbers of bodies.^{10,11}

- ☐ The dead are to be simply buried in mass graves or where they are found if mass graves are not available.
- ☐ Later a body can be transferred if the family wishes.
- ☐ The bodies do not need to be cleansed, just placed in body bags in their own clothing rather than shrouds.
- ☐ No need to separate male and female victims.
- ☐ Bodies of Muslims and non-Muslims can be buried in the same grave.
- ☐ The faces of the victims will be oriented toward Ka'bah Mecca in the West.
- ☐ Islamic burial rites (shalatjenazah) should be done before burial but, if necessary, the funeral prayer could be done after a burial.

- All of the victims are declared SyahidAqirat Death (death caused by disaster). The Islamic religious law requires that the burial of death body must take place no longer than 24 hours after the time of death.

The civil conflict in Aceh provided another cultural impact in the aftermath of the tsunami. For thirty years there had been conflict between a rebel movement striving for independence and the Indonesian government. These rebels used guerilla tactics against the police and military and retreated into the hills in the inland. The Aceh province had been under military law with army outposts creating a cordon. In the early period following the tsunami, civilians were heading inland to the rebel territory and victims merged with sympathisers. The army faced the conflicting functions of helping in recovery following the tsunami and maintaining control in a conflict situation whilst being uncertain of who was a rebel and who was a victim. The magnitude of the tragedy forced both sides of the conflict a joint humanitarian effort and the province was opened to international organisations and the media. The compromise that started with the tsunami resulted in a formal memorandum of understanding between

the Indonesian government and the rebels in August 2005.³This conflict had no impact on the DVI team.

FIELD MANAGEMENT OF DVI TEAM IN ACEH.

Each responder team worked hard immediately after the tsunami hit, and tried their best to preserve the victims. Following its arrival, the DVI team organized the initial body identification tasks in spite of the damaged local conditions and badly destroyed facilities. However, due to the shortage of medical personnel in the first few days, the tasks of the DVI team were often diverted to treating the injured survivors and at times they were needed to help people in the evacuation process. The arrival of huge numbers of international responders (including approximately 300 medical experts) helped speed up rescue and relief missions. The multinational force and humanitarian aid from abroad brought sophisticated medical equipment and experienced personnel and were able provide proper medical treatment to the large number of injured survivors that eventually saved their lives. The DVI team could be released to return to identification of victims. In Aceh DVI was done by the IndonesianDVI team because most of the

DVI experts from all over the world were concentrated in Thailand. Most of the international experts who arrived in Aceh were medical specialists who helped the living victims.

DVI team tried their best to help victims' families by adopting the following simple and quick system:

- Taking pictures of the dead in their clothes and taking a close up photograph with a digital camera.
- Labeling and recording the region where the victim was found e.g. :
 - *Rumah Sakit Bhayangkara Lamteumen/A 1/001/11 Jan/2005*
 - *Brimob Kampong Keuramat/B2/13 Jan/2005*
- Describing and recording in detail all victim's personal belongings such as clothing, jewelry, ID card, mobile phones and special marks.
- The victim was placed in a body bag with the clothing in which they were found.
- An ulama/ustadz (Moslem religious leader) was invited and encouraged to lead the burial rites

From these records, family or associates of the dead made identifications but in some cases from the ID information on the body (ID cards or mobile telephone SIM cards).

The statistics are sobering. In the first three weeks, approximately 87,000 bodies were buried. The recovery phase lasted until March 2005 and involved 42 different organizations.⁸ Overall more than 130,000 people were confirmed dead, 37,000 missing, and more than half a million were displaced.^{2,7}

DIFFICULTIES REVIEWED AND RECOMMENDATIONS SUGGESTED

Disaster management

The designation of the institution in overall charge and the designation of hierarchy of operations were not clear. Nor were responsibilities clearly assigned or well organized especially when dealing with such a huge number of dead bodies and injured victims. The medical teamwork as a rescue team, while the DVI team collecting the dead bodies. The situation was in total chaos for almost a week, while the number of victims increased by the minute. The chaotic situation was compounded by the destruction of all local hospital facilities, and the loss of many medical personnel,

experts and nurses who may have been swept by the tidal waves. This disaster was catastrophic and policies developed from disasters with fewer victims could not cope with the sheer magnitude in this instance. The Aceh tsunami will act as a lesson for the improvement of disaster management preparation, prediction and rescue protocols.

Identification procedures

Teeth comprise one of the primary indicators under Interpol protocol for DVI. Obtaining any dental ante mortem data was impossible since all patients' records were destroyed in the flood however comprehensive dental records were not expected given that only a small portion of the Indonesians population have a regular dentist visits. In addition, most Indonesian dentists do not use a standardized dental chart that could be useful for the positive identification of disaster victims (e.g. the dental classification and symbols used for a correct registration of the various dental treatments). Dental charts were not available for positive identification of most of the Tsunami victims. The dental records from hospitals, dental private practices and from the Medical Society Center (Pusat Kesehatan Masyarakat) were lost in the flood.

Using the experience gained in Aceh as an impetus, the Indonesian Dental Association should stress the importance of comprehensive ante mortem dental records following the National Standard of Dental Record (FDI system) released by the Ministry of Health of Indonesia.¹² The value of dental records should be promoted to all dentists in Indonesia, to all 26 University Dentistry Faculties, to all dentistry students, and to the general public.

Dentists should also be familiar with the contents of "Technical Guidelines for Health Crisis Responses on Disaster" book so that they are able to assist in the event of a disaster, such as the F form and how to fill the odontogram.⁶

Religion and DVI

Because Muslims make up the overwhelming majority of Aceh population, the DVI team was confronted with problems in dealing with customary religious burial rites. Islamic religious law requires that the burial must take place no later than 24 hours after the time of death. The families wished to conduct the final burial of the victims as soon as possible, but the process of identification needed some extra time. The DVI team faced an unrealistic time frame in which to properly

identify a large number of bodies. The difficulty of dealing with religious beliefs in DVI also happened with the Balinese Hindus during the 1st and 2nd Bali bombing, when the families refused to give their blood sample for DNA analysis, because they had completed the Hindu burial rites with the coffin and brought the remains to the sea (dilarung ke laut). In their opinion the burial was finished.¹³

Most Indonesian people have the culture of acceptance (trusting God's will) and believe they are obeying God's will according to Muslim teaching so long as their action has the ustadz's (religious leader) sanction. The decree issue by the Indonesian Council of Muslim Leaders outlined above went some way towards assisting the DVI process but did not occur until five days after the tsunami.^{10,11} In future disasters, Religious leader (ustadz, ulama) should get involved at the earliest possible stage of DVI operations.

Climate

It is essential that responder teams agree on a standardised numbering system for bodies beforehand. This is the foundation of keeping and locating all records for an individual and early agreement will speed the process of DVI. Due to the tropical heat, the condition of the bodies

deteriorated fast however rapid progress was hindered by the large number of bodies to be processed and the destruction of facilities that would otherwise be used. The use of cameras to record identification details has been outlined. In future disasters time can be saved and some efficiencies achieved if all responder teams carry their own digital camera, video camera, and laptop. In addition, dentists responding to disasters should bring hand-held X-ray apparatus to take onsite dental X-rays linked to the numbering on the body tag/label.

In a mass disaster of the dimensions of Aceh, local refrigeration is destroyed or not working due to power failures. Any transportable refrigeration takes time to arrive and even then could not effectively store the required number of bodies. Mass graveyards must be used. As already mentioned, the religious requirements of burial in a mass grave can be overcome by working with religious leaders. Whilst acknowledging the difference in scale, the organization of the mass graveyards in Aceh of which there were fourteen, left room for improvement. Later exhumation of individual bodies from these graves would not be possible (Fig. 3)

When the Mandala Air aircraft crashed in Medan on September 6, 2005, a mass grave was used and marking posts were installed in the graveyard showing

information matching the numbers shown on the body tags. This procedure was effective and is recommended for future mass disasters.



Fig.3. Lambaro Mass graveyard Banda Aceh

CONCLUSION

In December 2005, the Aceh tsunami claimed more than 165,000 lives including 37,000 people missing. Local response teams and DVI experts were confronted by a catastrophe. They had to deal with this speedily because of the climate and at the

same time respond sensitively to religious and cultural constraints.

We believe that many catastrophic disasters can be reduced in impact (i.e. early warning Tsunami systems, improved safety standards enforced in transportation sectors, heightened terrorist threats awareness). Nonetheless, disasters will

continue to occur and we hope that disaster management in Indonesia will continue to

use past experiences to learn and improve in preparation for future events.

REFERENCES

1. Ishaq M. *Disaster Victim Identification, An importance of Cooperation and Network: Indonesian Perspective*. *Journal of Islamic Countries Organization for Forensic Medicine* 2008; 44-49.
2. Palang Merah Indonesia *Baseline Assessment 2009* [Internet] (cited on 2012 Nov 20) Available from: <http://www.climatecentre.org>
3. Pacific Ring of Fire [Internet] [cited 2012 Nov 10] Available from: http://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake_and_tsunami
4. National Disaster Management Agency of Indonesia (Badan Penanggulangan Bencana Indonesia). [Internet] [Cited 2012 9 Nov] Available from: <http://dibi.bnpb.go.id/DesInvestar/profiletab.jsp>
5. Sahelangi P. *Dentist's role in Disaster Risk Reduction*. CCR and WHO website; 2008
6. Ministry of Health of Indonesia. *Technical Guidelines for Health Crisis Responses on Disaster*. Jakarta, Indonesia; 2007 [In Indonesian]
7. 2004 Indian Ocean Earthquake and Tsunami. [Internet] [cited 2012 Nov 9] Available from: http://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake_and_tsunami
8. Morgan OW, Sribanditmongkol P, Perera C, Sulasmi Y, Van Alphen D, et al. (2006) Mass Fatality Management following the South Asian Tsunami Disaster: Case Studies in Thailand, Indonesia, and Sri Lanka. *PLoS Med* 3(6): e195. doi:10.1371/journal.pmed.0030195
9. *Disaster Victim Identification. Interpol Guide 2009*. [Internet] [Cited 2012 Nov 9] Available from <http://www.interpol.int/INTERPOL-expertise/Forensics/DVI>
10. Astrid FP, Suhartono K, Soup. *MUI Fatwa for Aceh Tsunami Victims Funeral*. *Indosiar.com*. Friday Dec 31 2004 [internet] [cited 18 December 2011] Available from: http://www.indosiar.com/fokus/fatwa-mui-soal-jenazah-korban_29681.html
11. Umi. *MUI Fatwa*. *detikNews*. Friday Dec 31 2004. [internet] [cited 18 December 2011] Available from: <http://preview.detik.com/detiknews/read/2004/12/31/121357/265387/10/mui-korban-tsunami-aceh-boleh-dikubur-di-mana-saja>
12. Ministry of Health of Indonesia. *Standard Nasional Rekam Medik Kedokteran Gigi*. Jakarta, Indonesia; 2007 [In Indonesian]
13. Sanglah Hospital. *Technical Report Lessons Learnt from the Bali Bomb Blast*. Denpasar, Indonesia; 2003

knowledge. *Forensic Sci Med Pathol*. 2011 Jun 21.
