

**Thai Tsunami Victim Identification  
Role of the Department of Forensic Medicine  
Chiang Mai University**

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**ABSTRACT**

*On December 26, 2004, after a 9.0 Richter scale earthquake occurred north of Sumatra Island, there was a huge tsunami which later struck many countries on the coast of the Indian Ocean, causing nearly 217,000 deaths including 5,395 victims killed in southern Thailand. This devastation exceeded the capability of national mass fatality response resources. The members of Forensic Medicine Department, Chiang Mai University (CMU) had joined this unprecedented operation during the early period of the incident. The CMU forensic team was mobilized to the affected area on the third day of the disaster and set up a temporary morgue for body examinations at Khao Lak. The team examined about 193 corpses during December 29-30, 2004. More than half of the victims were female. About one-third of the bodies were identified as Caucasians and another one-third as Mongoloids. The rest of the victims were could not be identified ethnically. Most of the bodies recovered at this point were already decomposed, making identification more difficult. Only 14 cases were released to their families during these two days and the other 12 cases were released later. The examination site was then closed due to unsecured work place at Khao Lak. From this experience, it is clear that the country as well as the local authorities need a national mass fatality response plan. As the leading university in this region, Chiang Mai University can play an important role to cooperate with the local authorities in creating this plan and facilitating the preparedness for this region.*

**Key words:** Tsunami, Dead, Victim Identification

**INTRODUCTION**

On December 26, 2004, after a 9.0 Richter scale earthquake occurred north of Sumatra Island (Indian Ocean Earthquake, 2004), there was a huge tsunami which later struck many countries on the coast of the Indian Ocean, causing nearly 217,000 deaths and an estimated 125,000 injured (Tsunami Death Toll, 2005). The tsunami hit six provinces in southern Thailand. The height of the waves was about 4–10 meters (Earthquake and Tsunami, 2005). In Thailand, an estimated 8,500 victims were injured and 5,395 killed by the tsunami (Table 1) (News After Shock, 2004). The tsunami caused the largest number of deaths from a single

incident in modern Thai history. It came without warning and was beyond the scope of existing mass disaster plans. Being part of the leading university, the Department of Forensic Medicine, Chiang Mai University (CMU) had joined this unprecedented operation. This article summarizes the tasks conducted by the forensic team, CMU during the early phase of tsunami devastation in Thailand.

**Table 1** Number of deaths in each province reported by the Thai authorities

Province	No. of Thai death	No. of foreign death	Undetermined nationality	Total
Phang Nga	1,266	1,633	1,325	<b>4,224</b>
Krabi	357	203	161	<b>721</b>
Phuket	151	111	17	<b>279</b>
Ranong	156	4	0	<b>160</b>
Trang	3	2	0	<b>5</b>
Satun	6	0	0	<b>6</b>
<b>Total</b>	<b>1,939</b>	<b>1,953</b>	<b>1,503</b>	<b>5,395</b>

*Source: Department of Disaster Prevention and Mitigation, Ministry of Interior.*

### **Involvement of forensic team from Chiang Mai University**

Under the Thai legislation, a forensic investigation is required for these types of deaths. In general, the purpose of an investigation is to identify the victim, to determine the time and place of death along with the cause and manner of death. In the case of the tsunami disaster, the main purpose of the forensic investigation is to identify the victims. Without forensic team in the affected areas, forensic experts and other relevant professionals from other regions of the country then self-report to the disaster sites assisting body examinations.

The Department of Forensic Medicine, CMU, one of the leading forensic institutes in Thailand, was contacted by the Ministry of Public Health on December 28, 2004, requesting for a forensic team to the south. Within 3 hours after that emergency call, the department set up a forensic team which comprised of 2 staff, 5-residency training doctors and 1 assistant, ready to go to the south of Thailand. With kind support from the Nok Airline Company, the first batch of forensic team from CMU departed Chiang Mai airport at 3.00 pm. and arrived at Phuket airport about 8.30 pm. The team visited the Vachira Phuket general hospital for initial assessment and was informed that hundreds of bodies were recovered in Phang-Nga province, the team then decided to move to Phang-Nga.

Early morning of December 29, the team from CMU travelled to Takuapa district in Phang-Nga. The provincial authorities were setting up another relief center at Khao Lak which was the worst area hit by tsunami with a number of deaths. The local authorities requested a forensic team to set up a temporary morgue at the same site. The forensic team from CMU then was appointed to work at Khao Lak.

The temporary morgue site was set up on the open public area, about 1 kilometer from the beach, which was previously an open market before the tsunami waves wiped off everything on this area (Figure 1). Under limited resources, even though supported by a charity

foundation, local authorities and other volunteers, the forensic examinations were conducted under hot and sunny environment.



**Figure 1:** The open public area at Khao Lak before temporary morgue setup

**Dead body examinations by the CMU forensic team**

The bodies recovered on the ground or under rubble and pools of water from Khao Lak area were transferred to this examination site. Approximately 300 cases were brought to this site during December 29–30, 2005. However, within these two days, the CMU forensic team was able to examine only 193 cases (Table 2). More than half of the victims (58%) were female. Two cases of baby with decomposed bodies were not determined for sex. About one-third of the bodies were identified as Caucasians and another one-third as Mongoloids. The rest of the victims were not identified ethnically at that time. Most of the bodies recovered at this point were already decomposed, making examination and identification more difficult. Under hot and humid temperature, lack of proper facilities and workplace and no cool-storage containers, the team had to examine the corpses as quickly as possible before bodies became more deteriorated (Figure 2).

**Table 2** Number of bodies examined by the CMU team

	Male	Female	Undetermined sex	<b>Total</b>
Caucasians	32	30	-	<b>62</b>
Mongoloids	28	42	-	<b>70</b>
Undetermined race	21	38	2	<b>61</b>
<b>Total</b>	<b>81</b>	<b>110</b>	<b>2</b>	<b>193</b>



**Figure 2:** Body examination under constrain resources at Khao Lak temporary morgue

#### **Identification and releasing the bodies**

After examination, all the relevant information was placed in a laptop computer, allowing victims' families to view. If families could recognize the victims mainly from external appearances such as clothing, personal belongings, tattoos, scars, the bodies then were released to their families. The forensic team recorded the name of a relative who claimed the victim. As shown in Table 3, the number of victims identified during this phase was quite low. Only 14 cases were released to their families during these two days and the other 12 cases were released later. Five cases were identified by identification cards on the deceased victims. Six cases were identified by jewelries and personal properties. Seven cases were identified by their cloths and four cases by scars, tattoos or extremity amputation.

**Table 3** Number of victims identified and released by the CMU team

	Male	Female	Total
Foreigners	2	-	<b>2</b>
Mongoloids (Thais)	11	13	<b>24</b>
<b>Total</b>	<b>13</b>	<b>13</b>	<b>26</b>

#### **Closing the temporary morgue at Khao Lak**

On December 30, 2004 about 2 pm. while the CMU forensic team was examining the corpses, all searching teams ran hastily from the beach to the relief center. The CMU forensic team was told that tsunami was coming. The team then ran away together with other rescue and relief teams, including local authorities' personnel. It turned out that there was an after shock at Sumatra, the magnitude was about 6.5 Richter scale but no tsunami. Considering for the forensic team's safety, the chief of CMU forensic team informed the Gover-

nor of Phang-Nga that the temporary morgue should be closed due to unsecured work place. The unidentified bodies were then transferred to Yan Yaw Temple and stored in that area waiting for examination by other teams.

### **Moving the CMU team to Yan Yaw temporary morgue**

After closing the temporary morgue at Khao-Lak, the CMU forensic team was requested to assist victim identification and DNA specimens collection at Yan Yaw Temple in Takuapa district. The team worked at Yan Yaw Temple during January 1–5, 2005 and withdrew from Phang-Nga back to Chiang Mai on the night of January 5, 2005 because all volunteers from the Department of Forensic Medicine had to resume their responsibility at Chiang Mai University.

## **DISCUSSION AND CONCLUSION**

Tsunami disaster which occurred in the south of Asia this time caused huge number of deaths. In recorded modern Thai history, it is the largest number of deaths from a single incident. The severity of the situation apparently exceeded the available resources of the local authorities. Subsequently, many volunteers from other regions came to help. The body examination was a necessary process to identify and return the bodies to their loved ones. As being part of the Chiang Mai University, a leading university of Thailand, the members of Forensic Medicine Department volunteered to work at the disaster site during the New Year holidays. The team was able to examine at least 193 victims' bodies during two days operation and about 26 corpses were released to their families during that time. From this incident, it is clear that the country as well as the local authorities need a national mass fatality response plan. Chiang Mai University, located in the second-largest city of Thailand, can play an important role to cooperate with the local authorities, creating this plan and facilitating the preparedness for this region. Finally, although the tsunami caused mass devastation in Thailand, it had also brought all Thai people and other nationalities to consolidate their minds to help each other as part of social responsibility.

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