

The Killing Field of Khao Lak Disaster Victim Identification in Tsunami-struck Phuket

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In response to the Thai Government's request for forensic assistance, the Singapore Government sent a 20-man disaster victim identification (DVI) team to Phuket on 31 December 2004. The team comprised forensic pathologists, DNA scientists, dentists and fingerprint officers from the Police's Criminal Investigation Department. On arrival the Singapore DVI team was assigned to the worst hit area of Khao Lak, 120 km north of Phuket Island. LTC (Dr) Tan Peng Hui, an SAF forensic dentist with the team, shares his experience as follows.

What we saw

Despite bracing ourselves for what was to come, we were unprepared for what greeted us. The scale of the toll on human lives at Khao Lak was staggering. The grounds of Wat Yan Yao, a local temple converted to a makeshift mortuary, contained so many bodies that there was barely walking room. Rows of bodies stretched out for as far as the eye could see. The scene called to mind the killing fields of Cambodia.

In the days before refrigerated containers arrived, solid carbon dioxide (dry ice) was used to preserve the decomposing bodies. So much of this was used that a blanket of mist covered the grounds of the temple. It was almost surreal, like in a dreamland, except that this was a living nightmare.

All the human remains examined at Wat Yan Yao mortuary had undergone advanced decomposition, rendering visual recognition impossible. Some of the deceased had suffered head injuries and lacerations, whereas others had been buried in mud. Most of the bodies presented with pink-coloured teeth, which are often associated with drowning.

We admire our Thai forensic colleagues for their



Fig. 1. The temple of Wat Yan Yao in Khao Lak Takua Pa district became a makeshift mortuary.



Fig. 2. The temple grounds blanketed in condensation from dry ice.

courage and grit. Although faced with a huge number of bodies, they carried out forensic examinations outdoors under difficult field conditions, without adequate lighting or a piped water supply. The Australian DVI team, which had arrived two days before the Singapore contingent, began constructing

a makeshift mortuary at Wat Yan Yao. It was completed within days.

What we did

The Singapore DVI team quickly became part of the coordinated disaster victim identification effort, which eventually involved forensic teams from more than 30 countries. Almost round the clock, in three shifts, the forensic teams processed the bodies in accordance with Interpol protocol at three makeshift mortuaries (two in Khao Lak and one in Krabi).

Each body was number-tagged and photographed. Fingerprints, if available, were lifted and recorded. Forensic pathologists then examined the bodies for distinguishing characteristics such as birthmarks, tattoos, and scars, or for personal effects that could assist in identification. The dentition was then photographed, documented, and X-rayed by forensic dentists. From each body two intact molar teeth (if available) and samples obtained from the femur, were removed for DNA profiling.

The Singapore DVI team forwarded all the post mortem information gathered at the mortuary to the Thai Tsunami Victim Identification Information Management Centre (TTVI-IMC) in Phuket Island, where it was entered into a computer database. Meanwhile, the police from various countries were, in tandem, also gathering the fingerprints, dental records, and DNA data of their missing nationals. Their information was also sent to the TTVI-IMC, where a software program, known as PLASDATA, was used to search for possible matches between the two databases.

Whilst at Khao Lak, the Singapore DVI team collated the fingerprints, dental records and DNA profiles of all the 13 missing Singaporeans, and entered them into the IMC database. To date, the system has identified about 700 bodies, including a Singapore doctor by his dental records. The work is still ongoing and is expected to last for some months.

What we learned

The Phuket mission has gained the Singapore DVI team invaluable experience in mass disaster management. My colleagues and I saw at first hand the real-world challenges and difficulties in disaster



Fig. 3. The Singapore DVI Team (yellow attire) in the Wat Yan Yao mortuary in Phuket, Thailand.



Fig. 4. The dentitions of each recovered body were systematically documented, photographed and x-rayed. Visible images of the cadaver in background are not those of any specific individual.

victim identification, which requires a multi-disciplinary effort and extensive coordination. God forbid, but if a mass casualty disaster occurred in Singapore, we are now a bit wiser and better prepared.

The most difficult part of the mission was seeing the massive loss of human lives. It was heart-wrenching to see the many young children and babies in the mortuary. They had little chance against the giant tsunami waves. We think of their parents and about what they must be going through. At all times, we handled their little bodies with extra tender care.