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Management of dead bodies as a component of psychosocial interventions after the tsunami: A view from Sri Lanka

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Summary

Even if predicted, disasters may not be completely averted due to reasons beyond human control. There is always likely to be a degree of loss, human as well as material. Therefore, the correct strategy is to limit the damage and minimize the harm. Such damage control exercises should be mindful about the psychological costs of the disaster. Identification of dead bodies and the missing, as well as providing a dignified burial, is a crucial part of the overall management of a disaster. It will alleviate the long-term psychological as well as legal consequences. Hence, a comprehensive forensic service including modern genetic capabilities is a must for disaster response. Development of a comprehensive and efficient psychosocial intervention at community level after a disaster should recognise the importance of dead body management as an integral part of it. The guiding principles of psychosocial interventions are: to be multi-sectoral and multi-level; to include immediate, mid-term and long-term interventions; to be socially and culturally sensitive; to recognize the functionality of existing social and healthcare systems; to adopt a public mental health approach; and to be informed by evidence-based planning and implementation proven to be locally effective.

Background

Tsunami

On 26 December 2004, an earthquake with a moment magnitude of 9.3 occurred along Northern Sumatra and the Nicobar and Andaman Islands that resulted in the catastrophic tsunami which affected 12 countries. A second earthquake took place on March 28 close to the Island Nias with a moment magnitude of 8.6 (Kruger & Ohrnberger, 2005; Lay et al., 2005). The human impact of the December 26th tsunami was enormous in terms of families affected, displaced or dead. More than 175,000 people were killed. The majority of the Asians who died were buried or cremated without being identified. However, most developed countries did their utmost to identify their citizens selectively that died during the tragedy (Centre for Disease Control and Prevention, 2005). Almost two million lost their homes and had to find shelter with family, friends or in temporary settlements. Four countries—Indonesia, Sri Lanka, India and Thailand—were worst hit.

The psychological impact could not be quantified immediately after the tsunami. Although varying estimates have been offered by different schools of therapists and ideologies, everyone would agree that there will be some degree of long-term impact on mental health of tsunami affected populations (Norris, 2005; Ommeren, Saxena, & Saraceneo, 2005a). However, most of the counties affected by the tsunami did not even have a mental health policy at that time (WHO, 2005a).

There was help from a multitude of international non-governmental organizations, United Nations organizations, and the public, with massive funds being raised for the victims of the disaster (Lee, 2005). This huge influx of foreign organizations and individuals offering humanitarian aid, including counselling to survivors, without adequate familiarity of local customs or culture, created concerns among informed public and mental health professionals (Sumathipala & Siribaddana, 2005). Although noble and well meaning, the public 'goodwill' was not without its drawbacks (Lee, 2005).

Natural disasters cause a large number of deaths within a short period, placing overwhelming stress on individuals and society and presenting health officials with an uncommon challenge of handling large numbers of cadavers. According to the International Federation of Red Cross and Red Crescent Societies (using data drawn from the

EM-DAT database maintained by the Centre for Research on the Epidemiology of Disasters [CRED], Belgium), in the 10-year period of 1993 through 2002, 531,159 persons were killed by natural disasters in the world (International Federation of Red Cross and Red Crescent Societies, 2003). Two recent earthquakes in Asia, one in the deep ocean and the other in the Hindukush Mountains, dwarfed these numbers. In most of these disasters, emergency mass burials, or incineration, have been carried out under public and political pressure.

The aim of this review is to evaluate the place of culturally sensitive and appropriate dead body management and to identify its place within the realm of psychosocial interventions.

Tsunami and normal trauma reaction

Stress reactions are a normal and recognized feature following disasters. These can be behavioural, cognitive, emotional and physical. Bereavement and grief can complicate the emotional reaction to a disaster.

Bereavement is defined as an objective state of having experienced the loss of a loved person through death, while grief is a subjective state of psychological and physiological reaction to that loss (Marwit, 1991). It is to be expected after the death of one or more loved ones that sadness, suffering, and grief will arise. Grief is an extension of the natural human response to separation (Bowlby, 1980; Parkes, 1986). Just as physical trauma to the body evokes the inflammatory response—redness, swelling, heat and pain—so the psychological trauma of loss leads to a sequence of natural experiences, as detailed below:

Phases of normal grief reaction (Clark, 2004).

- Phase I: Shock and protest—includes numbness, disbelief and acute dysphoria.
- Phase II: Preoccupation—includes yearning, searching and anger.
- Phase III: Disorganization—includes despair and acceptance of loss.
- Phase IV: Resolution.

The grieving period is when a person assimilates what has happened, understands it, overcomes it, and rebuilds his or her life. This is a normal process that should not be hurried or discouraged; nor should it be regarded as an illness (Pan American Health Organization, 2004).

In Asian cultures, there is a practice to remember the loved ones and to commemorate their life and death as a way of expressing that they 'will not be forgotten', while dealing with one's own feelings of sadness. The grave, a headstone, a photograph, or flowers in the home are common ways of expressing this. Performing rituals established by one's culture and community forms an important part of the recovery process for the survivors (Pan American Health Organization, 2004).

In all societies there are rituals, norms, and forms of expressing grief that are derived from different conceptions about life and death. In different cultures different rituals have evolved; different forms of burial and performing religious ceremonies after the burial and observing anniversaries of the death (Pan American Health Organization, 2004). Grief may be avoided or it may be exaggerated and prolonged. Similarly, people may need permission and encouragement to grieve (Parkes, 1998).

Therefore, to go through the grief process one has to be certain that the loved one is no more. Otherwise, searching may go on for the missing, alleging that they are out there somewhere. As explained before, it can be a part of phase II preoccupation. This was witnessed during the tsunami, when newspaper advertisements appeared months afterwards requesting to hand over children if they were with someone, and also asking for a report if they knew the whereabouts of the missing.

The process of unresolved grief

When there are massive fatalities, missing persons, and unidentified corpses, this grieving process is changed and the different facets of grieving cannot be observed. In many cases, the corpse is not recovered, producing a feeling of emptiness, of 'frustrated or unresolved grief'. Ambiguity of thoughts and emotions arise and there is additional concern about how the death occurred and what happened to the corpse (Pan American Health Organization, 2004). Disappearances, inability to recognize corpses and collective burials make the grieving process more difficult to face (Human Rights Office of the Archdiocese, 1998; Rodríguez & Ruiz, 2001). Therefore, in the case of the tsunami, with relatives missing, homes swept away and familiar neighbourhoods turned into wastelands, it is not surprising that many victims are likely to have complicated grief (Ng, 2005). Such unresolved grief can lead to the appearance of psychiatric disorders that require more specialized interventions (Desjarlais, 1995). As discussed by Parkes (1998), after a major loss such as the death of a spouse or child, up to a third of the adults directly affected will suffer detrimental effects on their physical or mental health, or both (Jacobs, 1993). Such bereavements increase the risk of death from heart disease and suicide as well as causing or contributing to a variety of psychosomatic and psychiatric disorders. About a quarter of widows and widowers

will experience clinical depression and anxiety during the first year of bereavement; the risk drops to about 17% by the end of the first year and continues to decline thereafter (Jacobs, 1993). Clegg (1988) found that 31% of 71 patients admitted to a psychiatric unit for the elderly had recently been bereaved.

A variety of psychiatric disorders can also be caused by bereavement, the commonest being clinical depression, anxiety states, panic syndromes, and post-traumatic stress disorder. These often coexist and overlap with each other, as they do with the more specific morbid grief reactions. These last disorders are of special interest for the light that they shed on why some people come through bereavement unscathed or strengthened by the experience while others 'break down' (Clark, 2004; Parkes, 1998).

When the complex cultural features that surround funeral rituals and their meaning for the social group are ignored in a major disaster situation, the community seeks alternate ways to express their grief; these are not always fruitful, inevitably are more difficult, and have far-reaching and unpredictable repercussions (Rodríguez & Ruiz, 2001).

Therefore, it is imperative, difficult as it may be, to plan to identify as well as to give a dignified burial to the dead during a disaster. Although identification of dead bodies is an important component, it poses a huge challenge in disasters as dead bodies are not easily identifiable. This is where modern technology becomes not a privilege but a necessity. People involved in a major accident or disaster have different immediate, short- and long-term needs, depending on the type and circumstances of the emergency. Given the urgency and the relative shortage of available resources in these situations, there does exist—from the perspective of those involved—a hierarchy of needs. Even though they all add up and are necessarily linked with each other, a differentiated response is required, priorities must be set and choices need to be made (Eynaeve, 2001). A study examining developing countries has shown that at times of disaster, community mental health services tend to be either non-existent or sparse and disorganized (Munir, Ergene, Tunaligil, & Erol, 2004). Thus, in Turkey, the post-disaster period was characterized by voluntary and uncoordinated mobile units of professionals who worked in collaboration with national and international NGOs, representatives of professional guilds, and university departments. They provided a range of interventions: debriefing, short-term crisis intervention, individual and group counselling, psycho-education, cognitive-behavioural therapy, psychopharmacology, and even eye movement desensitization and reprocessing therapy (Munir et al., 2004). It was no different

with the Asian tsunami (Ommeren, Saxena, & Saraceneo, 2005a, 2005b). Another common phrase heard during the tsunami was 'psychosocial intervention', although it was ill defined. Psychosocial processes obviously have an important influence on the outcome in a disaster, and we urgently need to learn how to incorporate them into community preparedness (Baxter, 1995).

Definitions of psychosocial interventions

Although the term 'psychosocial interventions' was used more frequently and became popular after the tsunami, it appears to have had different meanings to different groups and individuals (Eyanave, 2001; The Psychosocial Working Group, 2003; WHO, 2005b). Psychosocial interventions for trauma-exposed populations are a new, developing field (Weine et al., 2002). The Oxford English Dictionary defines 'psychosocial interventions' as 'pertaining to the influence of social factors on an individuals mind and behaviours'. This is also interpreted as 'social intervention that has secondary psychological effects and psychological interventions that have secondary social effects'.

The term 'social intervention' is used for interventions that primarily aim to have social effects, and the term 'psychological intervention' is used for interventions that primarily aim to have psychological effects. It is acknowledged that social interventions have secondary psychological effects and that psychological interventions have secondary social effects as the term psychosocial suggests. The term 'psychosocial interventions', in the context of disaster management, does not refer only to highly specialized interventions by mental health experts. In fact, most psychosocial interventions for disaster-affected people can be carried out effectively by community level relief workers, if they are trained and supervised to do so (WHO, 2005b).

In almost every Member State of the European Union some kind of psychosocial intervention is initiated after mass emergencies. During recent years, different professional and voluntary workers, agencies and organizations have provided a range of services in the immediate aftermath of a mass emergency. However, there is a striking variety in activities, methods and approaches to the provision of psychosocial support, depending upon prevailing theories, economic resources, culture, and situational characteristics. Gradually the idea has emerged that psychosocial interventions need to be prepared in advance and must be effectively coordinated and structured during the different phases (Eyanave, 2001).

It would, however, be unrealistic to expect that psychosocial intervention, however well organized, would lead to a rapid and more or less total relief of suffering. It should also be emphasized that the most important psychosocial support for those involved in mass emergencies, results from the helping, healing and emancipating social mechanisms involved in interpersonal relationships and social networks (Eyanave, 2001).

Management of dead bodies as a part of psychosocial interventions

To our knowledge, only a very few organizations stressed the importance of identifying of dead bodies as an essential part of the 'psychosocial interventions'; especially as a public health intervention to prevent long-term consequences. The International Committee of the Red Cross (ICRC) was one of them. At the Missing Conference organized by the ICRC in Geneva, in 2003, one of the panels discussed the psychological impact of the uncertainty about the fate of a missing relative and the related socio-economic consequences (ICRC, The Missing Conference, 2003). The WHO (2005c) has also discouraged the unceremonious disposal of corpses 'to control communicable diseases'. Dead bodies carry no or extremely limited risk for communicable diseases. The bereaved need to have the possibility to conduct ceremonious funerals and—assuming it is not mutilated or decomposed—to see the body to say goodbye. In any case, death certificates need to be organized to avoid unnecessary financial and legal consequences for relatives (WHO, 2003).

The role of DNA techniques in the identification of dead

Current technology makes it possible to identify decomposed or fragmented corpses with a very high degree of certainty so that families can confirm the death of a relative and discard the belief that because the body has not been seen, there is a chance that 'he/she is still alive'. Technology confronts the person who is grasping at the hope that someone has survived (because 'not seeing does not believe') with reality (Pan American Health Organization, 2004). This manual, published by the Pan American Health Organisation and the WHO, emphasizes three aspects of the management of dead bodies in disaster situations. They are:

1. Rapid disposal of dead bodies owing to the myth that corpses pose a high risk for epidemics.
2. Crucial importance of identifying dead bodies from a psychological point of view.
3. Mass graves in the context of cultural norms and its impact on survivors.

Looking at it from a psychological point of view, the identification of dead bodies is crucial to end the uncertainty associated with missing persons. Even though identifying a cadaver of a close person may be distressing, it will help the surviving family members and other loved ones to go through the process of grief. Firstly, families will be able to confront (willingly or unwillingly) the reality of the situation. Families can begin to accept that their family member is dead, thereby starting the grief process. Identification of the body and the normal process of grieving are essential for facilitating individual recovery from the severe stress caused by sudden natural disasters and personal losses. Secondly, religious practices or other cultural rites can be held because there is a sense of finality. Thirdly, from a legal perspective, the documentation process of death can also begin. This is important in order for families to obtain financial compensation and other social rights. The lack of identity of the dead also implies that family members cannot bury the body according to valued rituals, or to cry for their loss in order to move ahead with the closure that comes from honouring the corpse.

On the contrary, the missing person is remembered as if he or she were still alive; there is no definite confirmation of the events surrounding the death, leaving a void that causes painful and unending speculation. The inability to mourn a close relative, the lingering doubt on the whereabouts of the disappeared, and the legal limbo of the surviving spouse or child all contribute to the many potential mental health problems associated with disasters and the difficult rehabilitation process that follows. Denying the right to identify the deceased or suppressing the means to track the body for proper grieving adds to the mental health risks facing the affected population (de Ville de Goyet, 2004).

Would dead bodies cause infections?

Communicable disease outbreaks, which have a devastating potential in emergency situations, were foreseen in the aftermath of the disaster. The large number of dead bodies gave rise to widespread fear of diseases and epidemics of malaria, cholera and dengue mainly in Banda Aceh, Northern Sumatra (Crammer, 2005; Drazen & Klempner, 2005; Zipperer, 2005).

Fears about the dangers that dead bodies pose to the survivors of natural disasters are mistaken. Using the PubMed online databases of the US National Library of Medicine, Dr Oliver Morgan of the Public and Environmental Health Research Unit

at the London School of Hygiene and Tropical Medicine, UK searched for relevant literature on the infection risks for public safety workers and funeral workers as well as for guidelines for the management of the dead and prevention of infection (Morgan, 2004). He found that in natural disasters people usually die from trauma and are unlikely to have infections, and that the risk that dead bodies pose is extremely small. There is little evidence of microbiological contamination of groundwater from the cadavers. Historically, epidemics resulting in large numbers of deaths have occurred for diseases like influenza, plague, cholera, typhoid, tuberculosis, anthrax, and smallpox. However, such infections are more likely to be present among the general population. In addition, although these diseases are highly contagious, they are unable to survive for long in the human body after death (except for HIV). It is therefore unlikely that such epidemics will result from contact with a cadaver.

In an accompanying editorial in the journal (de Ville de Goyet, 2004), an international disaster risk management consultant in Chevy Chase, Maryland, USA writes that respect for death which is ingrained in all cultures and deep fear of death itself common to all humans is very difficult to separate. These ingrained fears and insecurity drive people to dispose of dead bodies rather than reason or scientific evidence.

Mass graves: Psychological, ethical, legal and social consequences

The families of the deceased suffer additional harm because of the inadequate way that the bodies of the dead are handled. Regrettably, we continue to witness the use of common graves and mass cremations for the rapid disposal of dead bodies owing to the myths and beliefs that corpses pose a high risk for epidemics (Pan American Health Organization, 2004). Mass burials are carried out without respecting identification processes or preserving the individuality of the deceased. Not only do these actions go against the cultural and religious practices of a population, but also they have social, psychological, emotional, economic, and legal repercussions regarding the legacy of the deceased, which exacerbate the damage caused by the disaster. Any form of mass burial always has a very negative psychosocial impact at the individual and community level since it is contrary to the very understandable desire that everyone has of giving a worthy farewell to their family members and friends. Another problem resulting from mass burial is that corpses are not identified, which increases grief and uncertainty, and complicates the mourning process for the

survivors. In Sri Lanka, during the conflict in the North and East and during the civil war in the South, victims of the 'other side' were mainly killed and buried in mass graves. The alleged Chemmini mass graves in the Jaffna peninsula were exhumed and bodies identified using DNA technology and perpetrators of the crime were prosecuted. Unfortunately, another mass grave in Sooriyakanda in the South was exhumed under massive publicity but proper forensic work was not done. Due to these negative historical phenomena, mass graves create a violent distressful mental image among the Sri Lankan populace.

Legal consequences of mass burial have been discussed in detail by Perera (2005). The rapid disposal of the deceased into mass graves without any sort of documentation had serious effects on issuing death certificates subsequently. Many mass burial sites were not planned or well documented.

However, one may argue that when the logistics of management pertaining to disaster situations in developing countries are considered, it may be difficult to avoid burials in mass graves. Even if that is the case, the concept of mass burials could be used very cautiously in a more organized and conservative way in order to dispose of identified or non-identified corpses. The mass burial sites should be carefully selected and their extent should be demarcated permanently. All the deceased should be covered with whatever available material and should possess permanent identification tags. They should be placed in an extended position adjacent to each other. Unnecessary overlaying or reburials in the same mass grave are not to be recommended. All mass graves should be mapped and their contents should be well documented, including photography by the police and other legal authorities. These sites should never be used for any other purpose. The relatives of the dead should have access to the burial site at any moment and the essential details of the grave should be displayed publicly. If mass burials and mass graves are unavoidable, the grief of relatives could be minimized if burials are conducted in a well scrutinized systematic multi-stage process by the safe hands of medico-legal experts. It doesn't require importation of luxurious resources nor weeks to complete such a task.

What happened in the region?

The estimated death toll in Sri Lanka was more than 30,000; many more thousands of people were missing and displaced. Although Sri Lanka has experienced different forms of disasters before, it had not experienced a natural disaster of such magnitude in its 2000 years of recorded history. The administrative, health, and judicial services were

simply not able to respond rapidly to the workload demands created by the disaster (Perera, 2005). Although the disputed identity of a baby lost and found following the tsunami was resolved through DNA technology, it is available only in the private sector.

In contrast, in Thailand, disaster victim identification (DVI) was initiated, with approximately 1800 persons identified among the 5395 persons confirmed dead; 50% were not citizens of Thailand (Centre for Disease Control and Prevention, 2005). Although the tsunami created unprecedented challenges for forensic identification of dead bodies, equally unprecedented collaboration of forensic scientists from more than 29 countries working together helped speed up the process. Although 60% of bodies have been identified in Thailand, 2000 bodies are still awaiting. The process has been slowed by the lack of information from relatives, many of whom may not have survived the tsunami (WHO, 2005d).

Disaster victim identification teams totalling at least 600 persons, from Thailand and approximately 30 other countries, converted temples and other buildings in the provinces of Phangna, Phuket, and Krabi into four temporary morgues. To store and preserve bodies, which were initially cooled with dry ice, refrigerated containers were procured later. Approximately 30 DVI teams at the four morgue sites initially used different forensic protocols, including various numbering systems and methods for obtaining DNA specimens. These factors and the long travel times between the morgue sites delayed data sharing between morgues and, consequently, victim identification. As a result, the multinational Thailand Tsunami Victim Identification committee (TTVI) was formed on 12 January 2005, to create specific, standardized protocols and procedures for DVI, based on the Interpol Disaster Victim Identification Guide and subsidiary procedures for pathology, odontology, photography, fingerprinting, re-examination, moving of bodies, chain of custody, and DNA testing of ante-mortem and post-mortem samples (targeting 16 genetic loci). Post-mortem data were recorded on Interpol forms and matched with ante-mortem data (e.g., primary data such as dental, fingerprint, or DNA data and secondary data such as age, race, sex, hair colour, and jewellery) compiled regarding missing persons at an information centre in Phuket. Ante-mortem data often were provided by relatives or friends. Post-mortem and ante-mortem data were matched and positives were confirmed by a review board, identification was authenticated, and the body released with a death certificate. An estimated 700 bodies were identified and released by using varying protocols in place at the temporary morgues before establishment of

Table I. Human impact of the earthquake and tsunami as of June 2005.

Country	Killed	Missing**	Affected*
Indonesia	128,645	37,063	5,32,898
Sri Lanka	31,299	4100	5,16,130
India	10,749	5640	6,47,599
Thailand	5413	2932	58,550
Somalia	298	104	800
Maldives	81	21	25,000
Malaysia	68	12	4296
Myanmar	61	10	12,500
Tanzania	10		
Seychelles	3		4830
Bangladesh	2		
Kenya	1		
Total	176,630	49,778	1,906,603

*Including homeless. **49,778 are now also considered dead.

uniform TTVI process. Since 12 January, a total of 4082 post-mortem, and 2164 ante-mortem data files had been created for matching as of 31 March 2005. From these data files, 1112 bodies were identified, including 1046 on the basis of one type of data (962 dental, 71 fingerprint, 10 physical, and three DNA); 66 others were identified by combinations of data types. Approximately 95% of identifications were of persons aged more than 18 years. Because little ante-mortem dental or fingerprint data are available for children, their identification relied more heavily on DNA matching (Centre for Disease Control and Prevention, 2005).

Lau, Tan and Tan (2005) described the international DVI response mounted in Thailand, with particular reference to Singapore's contribution. Although Singapore was unscathed, over 30 Singaporean visitors were counted amongst the thousands of deceased victims, mostly in Thailand. The systematic application of forensic pathology, forensic dentistry, DNA profiling, and fingerprinting to human identification that were in advanced states of putrefaction was crucial to the entire DVI process. Forward planning, adequate funding and international cooperation are essential to mounting an effective response to any major mass disaster of the future. In Thailand a high proportion of tourist dead may have prompted forensic help it received from all over the world, developed infrastructure (Thailand has the highest GDP of all four severely affected countries) and a manageable number of cadavers also may have contributed to the efficient DVI system. Still, the proportion of missing to death was highest in Thailand (see Table I).

What did we do in Sri Lanka to convert the philosophy into action?

The recent tsunami revealed that Sri Lanka neither had policy nor the capacity to identify dead bodies

using modern molecular biology based DNA techniques. However, the existing medico-legal services were not given priority during the immediate aftermath of the tsunami. The number of qualified forensic pathologists in Sri Lanka is almost equal to that of Australia, although infrastructure facilities are underdeveloped. After the tsunami, the deceased were sent to the nearest hospital morgues during the initial stages, and within hours all available morgues and refrigeration space were filled (Perera, 2005). After the second day, the unceremonious disposal of dead bodies to mass graves began. The Forum for Research & Development (FRD) managed to influence a policy decision that each cadaver should be at least draped in white cloth if a proper casket could not be found due to a sudden upsurge in the demand. We also managed to convince the authorities of the need for collective, if not individual, religious rites for the dead.

The FRD felt that it was important to raise awareness about dignified burials and accurate identification of the dead. Hence we campaigned to establish a local demonstration project to show that such a programme is feasible.

However, such an effort requires the involvement of a diverse team of people, including rescue personnel, forensic medicine experts, prosecutors, police, administrative, psychologists, representatives from NGOs and international organizations. Such a coordinated activity needs prior preparedness. Accepting in principle that identification of dead bodies is a basic right which should be respected even in a disaster situation was the first step. Developing adequate capacity, including human resources and political commitment for implementing such a programme can follow.

Incidentally, an international commission was formed in mid-February to identify missing foreigners in Sri Lanka, with the participation of British, German, and French investigators, the officers of the Criminal Investigation Department, judicial medical officers from Colombo and Galle, and a coroner in Colombo. The entire exercise was funded by Japan and European countries with insensitiveness to local poor who could not identify their kith and kin due to lack of resources. This commission continued previous investigations in the search for missing foreigners, including exhumations of mass graves where both rich tourists and poor locals were buried together. The local poor had to suffer the indignity that their loved ones would be exhumed in order to identify a few tourists without proper DVI system *in situ* for Sri Lankans. The distinguishing feature of the commission's involvement was performing complete autopsy examinations and identification procedures on all suspected bodies of missing foreigners. This commission

functioned until April, and many foreigners were positively identified following secondary (specific) investigations such as DNA profiling. The formation of such a commission led local experts to re-evaluate their strategies in disaster management, and many voices were raised demanding urgent attention to establish proper investigative mechanisms in the state sector, including DNA-profiling facilities to identify the deceased in disasters (Perera, 2005). The dedication of local forensic pathologists without sophisticated techniques including DNA technology still managed to do some justice to the cadavers of Sri Lankans who were exhumed to identify the foreigners.

Our proposal was designed to achieve the overall objectives of working towards a national policy on dead bodies' management and a nationwide service development to identify dead bodies in a disaster situation. Therefore our work spanned from awareness-raising, advocacy to carrying out local demonstration projects to show that the work is feasible in Sri Lanka. This included:

1. Raising public awareness on the human rights of deceased and missing persons as spelt out in International Humanitarian Law and Geneva Convention.
2. Establishing a mechanism to coordinate the work for overall capacity building and infrastructure development.
3. Collating existing databases on missing persons if there are any but if not, to develop such a register.
4. Enhancing the capacity of the existing forensic scientists to exhume dead bodies and prepare samples for genetic work.
5. The development of a national legal frame work leading to effective disaster management and disaster victim identification in natural and man-made disasters.
6. Identifying and enhancing the capacity of a group of ethicists to develop ethical guidelines related to exhumation and identification that can be used nationally.
7. Developing capacity in the relevant psychological work, for example a critical mass trained for breaking bad news and supporting grief work.
8. Close coordination with print and electronic media to handle the issue of dead bodies and developing capacity among the journalists about the social, legal, ethical and scientific aspects about this issue.
9. Collaboration with international experts to develop local capacity in all related fields.

In keeping with our philosophy of utilizing the vast pool of human resources available to the mother country as expatriates, the FRD invited a Sri Lankan

born senior forensic scientist from UK Forensic Sciences. With her advice and assistance, the FRD carried out strategically important, networking, advocacy, awareness raising and feasibility on establishing forensic genetic services in Sri Lanka. As a part of it, the FRD held a seminar on the 26th of February 2005, titled 'forensic genetic services, from pre-tsunami luxury to post-tsunami necessity' for which we managed to bring together some of the important stakeholders to voice this need of the day (Forum for Research and Development, 2005). We held several discussions with prosecuting lawyers, criminal investigators, forensic scientists from the government analysts' department and ministers in the cabinet. We also made representation to the Parliamentary Select Committee that was appointed specifically after the tsunami to recommend steps to minimize the damages from natural disaster. We recommended forensic genetic services as an essential component in the disaster management.

It is clearly a priority for every country to have an effective medico-legal scheme to deal with identification of dead in future disasters. It is a collective responsibility of the legal, health, administrative and police services, professional organizations including forensic pathologists and scientists, and all other concerned to ensure it.

Lessons to learn and the way forward

Although it was clear that every effort should be taken to identify bodies, the recent tsunami revealed that Sri Lanka neither had a policy nor the capacity to identify dead bodies. The State has a critical role in standardizing and guiding the tasks of handling dead bodies (recovery, identification, transfer, and final disposal), ensuring that ethical, social and legal norms are followed, and guaranteeing that the dignity of the deceased and their families is respected in accordance with their cultural values and religious beliefs. Developing adequate capacity, including human resources and a political commitment for implementing such a programme, is an important and challenging task.

Acknowledgements

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