



# Mortuary operations in the aftermath of the 2009 Victorian bushfires<sup>☆</sup>

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## ABSTRACT

On the day of the 2009 Victorian bushfires the Victorian Institute of Forensic Medicine activated its emergency plan. Within 48 h a temporary body storage facility was constructed adjacent to the existing mortuary. This temporary facility had the capacity to store up to 300 deceased persons. Pathologists, anthropologists, odontologists, police and mortuary assistants responded from all around Australia, New Zealand and Indonesia. The existing forensic mortuary and staff were divided into two areas: DVI (disaster victim identification) and "routine operations". A high priority for the mortuary was to ensure the casework of the "routine" deceased persons (those cases which were not related to the bushfires) was handled concurrently and in a timely manner. On admission each set of victim remains was given both a Coroner's case number in addition to the DVI number allocated at the scene. The case was CT scanned, examined by a pathologist, an anthropologist, and odontologist and in some instances a fingerprint expert. Where possible a DNA sample was taken. All processes, samples, labels and paperwork underwent a quality assurance check prior to the case completion. Regular audits were conducted. All of post mortem examinations were completed within 20 days of admission. Occupational health and safety issues of the staff were a high priority; this included correct manual handling, infection control and psychological debriefings. During the operation it was found that some remains were contaminated with asbestos. Procedures were set in place to manage these cases individually and each was isolated to reduce the risk of exposure by staff to asbestos. This overall mortuary operation identified a number of significant challenges, in particular the management of multiple parts of human remains for one individual. A new procedure was developed to ensure that all human remains, where possible, were reconciled with identified deceased persons prior to the release to the funeral director. It also highlighted the need to have well documented plans in place including plans for temporary mortuary facilities.

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## 1. Introduction

The environment surrounding the response to any mass disaster is one of constant change. While the response to any mass disaster needs to be, and can be, well planned, anticipating everything is not possible, as is predicting the specific size, location, and cause of the disaster itself. Plans therefore need to accommodate flexibility. Previous experience should be built on to improve preparedness. Internationally, responses to the management of the dead in a mass disaster range from bulldozers digging holes, rapid mass graves and burials without identification or any records of the human remains; to fully operational temporary

mortuaries equipped with pre-purchased structures and equipment which can be sourced from warehouses within hours of reported disasters, leading to identification of the deceased human remains following internationally recognised disaster victim identification (DVI) protocols [1–10].

On February 7th, 2009 the State of Victoria suffered its most deadly bushfire in documented history. This disaster triggered the activation of many emergency services and the implementation of disaster management plans, including the Victorian State disaster victim identification (DVI) plan.

Within the Victorian DVI plan, and indeed within the Australian plan, there are written protocols for the mortuary operation and a contingency plan for the construction of a temporary, fully operational mortuary. In Victoria the existing mortuary situated at the Victorian Institute of Forensic Medicine (VIFM) has the capacity to store 100 deceased persons; on any one day 80 deceased persons are stored. Therefore this facility does not have the space for any significant disaster. This paper details the plans and specifications of the temporary mortuary for the 2009 Victorian bushfires disaster.

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## 2. Management of mortuary operations

At the time of the 2009 Victorian bushfires, the body storage facilities at the VIFM were already fully utilized due to a marked increase in deaths associated with the heatwave experienced in the previous two weeks [11]. Initial reports of bushfire fatalities indicated that additional mortuary storage facilities would be required for possibly up to about 300 bodies.

### 2.1. The temporary body storage facility

A temporary body storage facility to house the bushfire victims was established adjacent to the existing forensic mortuary in Melbourne. The existing forensic mortuary was utilised for the post-mortem examinations. The reasons for this were:

- Melbourne was central to the location of deaths associated with the bushfires which were spread across the state of Victoria.
- VIFM has a well established mortuary with areas that can be divided into two distinct regions to perform DVI and non-DVI/routine work.
- The Multi-Detector Computed Tomography (MDCT) scanner at the VIFM was integral to the DVI response but was not mobile, and therefore could not be re-located.

- VIFM had previously installed three-phase power supply to the external wall of the building abutting the existing staff car park in preparation for a disaster, to allow for the installation of refrigerated containers.
- To establish the temporary body storage facility the equipment and services listed in Table 1 were sourced (Table 1; Figs. 1–3).
- In addition a recreational and catering tent was established with tables, chairs, food heating equipment, fridges and food was supplied by a catering company for breakfast, lunch and dinner for all staff working on the operation.
- The final set-up of the facility was completely covered from view from the public and media and secured by fencing, supported by a roaming police and security guards (Fig. 4).

### 2.2. Mortuary operations

#### 2.2.1. Roles within the mortuary operation

During the response to a disaster, it is imperative that the 'routine' workload continues in tandem with the DVI work. To ensure adequate co-ordination of routine and DVI work in the aftermath of the bushfires, the following roles were allocated to senior experienced mortuary staff:

- *DVI Senior Forensic Technician*: Responsible for the daily co-ordination of DVI examinations in the mortuary.

**Table 1**

Essential logistics and resources to be considered when setting up a temporary body storage facility.

Service/equipment supplied in the aftermath of the bushfires	Issues considered when planning
<p><i>Refrigerated containers</i>: Within 18 h of notification of the disaster, six 40 foot refrigerated storage containers were delivered and installed in the staff car park. These were connected to the existing three phase power points</p> <p><i>Racks for containers</i>: Local builders were briefed as to the size and type of racking required within the refrigerated storage containers similar to that in the existing mortuary fridges</p> <p><i>Tentage</i>: A project officer was assigned to the site from a local catering hire company. Instructions included that the area containing the refrigeration units together with a large admission and triage area, was to be completely covered to maintain security and privacy. It was to include an undercover secure walk way leading to a side entrance of the mortuary</p> <p><i>IT support</i>: Computers with bar-coding equipment were established in the temporary storage facility. The network was linked to existing system in the mortuary</p> <p><i>Lighting and plumbing</i>: These were networked with the main building and enabled admission and release systems from the mortuary to be duplicated in the temporary body storage area</p> <p><i>Signage</i>: Biohazard signs and authorised personnel signs were erected at entrance to the temporary mortuary</p> <p><i>Mortuary equipment</i>: Additional mortuary equipment such as Mortuary trolley, body lifts, cameras, personal protective clothing, hand sterilising gels, labelling equipment, body bag were supplied</p>	<p>Size: Two choices – either 40 ft (fits racking for approx 30 deceased) or 20 ft (fits racking for approx 15 deceased). Source of power: Three phase power points installed on the outside of existing mortuary or Mobile generators which may be hired Type: Sturdy and washable</p> <p>Design: Central aisle (greater number of bodies can be stored however they are difficult to manoeuvre in and out) or side aisle (less number stored however, bodies are easier to access) Height of racking: Needs to be consistent with local occupational safety standards which often dictates that the racking should not be above the average shoulder height of a mortuary worker [12] Use of body lift: Racking should accommodate a mortuary trolley or a body lift system Ramp: May be constructed by carpenters to assist with a access in and out containers Source. Local catering/hire companies, defence departments or the major disaster management companies</p> <p>Design. Ensure: –All aspects of operation are undercover, including containers and area to receive funeral vans/vehicles. –Ability to be extended as changing demands. –Consistent with building regulations e.g. includes fire exit Networked or stand alone system is required. The ideal situation will mimic existing systems already in place in the existing mortuary facilities 24 h lighting needs to be installed in all areas of temporary facility</p> <p>Guttering is required to prevent flooding when it rains Source from local printing or safety company</p> <p>Source of equipment may be from hospitals universities or major mass disaster management companies</p>



Fig. 1. The racking in the temporary storage containers.



Fig. 3. Signage leading to the temporary storage facility.

- **Routine Senior Forensic Technician:** Responsible for the daily co-ordination of non-DVI examinations in the mortuary.
- **Quality Officer:** Responsible for the quality checks of all documentation and labelling within the mortuary DVI operation.
- **Body Movement Controller:** Responsible for recording the movement of bodies within the mortuary and temporary mortuary facility, and performing regular audits of the storage refrigeration units.
- **Pathology Review Co-ordinator:** Responsible for co-ordinating daily meetings of pathology, anthropology and odontology staff to review final identification reports prior to submitting to the DVI Identification Board chaired by the State Coroner.

#### 2.2.2. Admission of the remains

On admission of the human remains, each case was:

- Labelled with a unique barcoded Coroners case number (in addition to the DVI number which was placed on the human remains at the scene).
- Photographed.
- Entered onto the internal computerised case management system.

The remains were labelled with two unique numbers, as detailed above, to ensure each set of human remains had two identifying features as is consistent with quality standards. This also proved very useful when on the one occasion the wrong DVI number was transcribed at the scene and only detected at the post-

mortem examination. The error could easily be traced using the Coroners case numbering system.

#### 2.2.3. MDCT scanning of remains

All remains were scanned as soon as possible after admission, using a MDCT. This ensured there was a permanent record taken of the remains prior to the body bag being opened and prior to examination by a medical specialist. The images were assessed by a radiologist before the pathology examination, and a standardised form created containing age and gender determination, personal effects and distinguishing features. This form was handed to the pathologist at the time of the pathology examination.

#### 2.2.4. Post-mortem examination

Prior to any post-mortem examination of disaster victims a protocol was established with the Coroner regarding the extent of the examination. The agreed approach was based on the reasonable, but rebuttable, view that the cause of death in each case would be the effects of fire. The extent of the examination was to be at the discretion of the pathologist. In the relatively small number of intact bodies incisions were minimal, and designed to establish that the deceased was alive during the fire, and to elicit important information related to identity. If at any time during the examination the pathologist formed a suspicion that the death was due to anything other than effects of fire, the Coroner was to be informed and the extent of the examination reviewed.

To ensure streamlined workflow of both DVI and non-DVI examinations, the existing VIFM mortuary was divided into two areas:

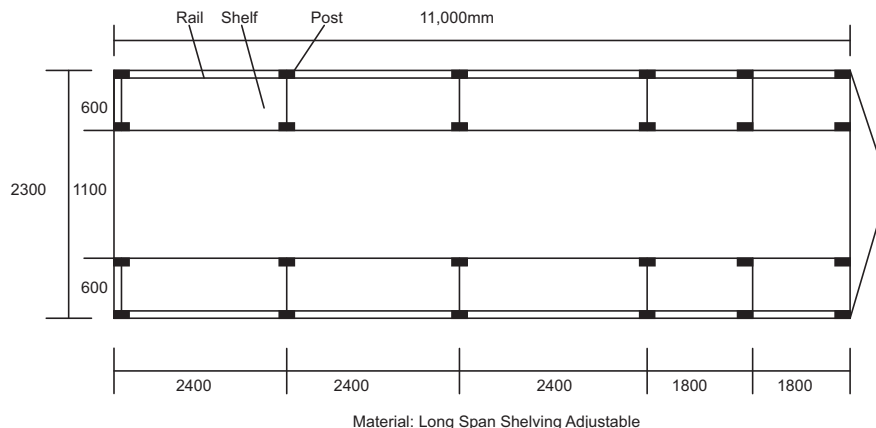


Fig. 2. The temporary racking plans in a 40 ft refrigerated container (approx).

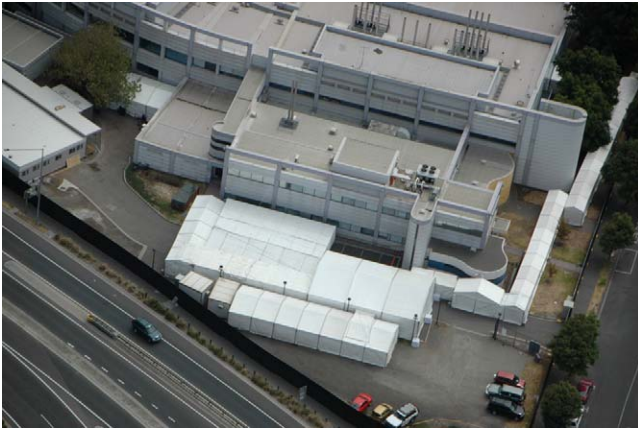


Fig. 4. The temporary mortuary facility adjacent to the existing mortuary.

- (a) *Non-DVI/routine examination area*: Two smaller operating suites—the homicide and special autopsy suite, were allocated to the non-DVI operational work. In total these rooms have three autopsy work stations. Pathologists were allocated set times to work in these rooms which enabled a maximum of 12 autopsy examinations to be performed daily, which was adequate to maintain the routine case work.
- (b) *DVI examination area*: The main mortuary was allocated to the DVI operation. The main mortuary has eight work stations; four work stations were allocated to pathology examinations, three work stations were allocated to odontology examinations, and one for fingerprint examinations. The work flow within the mortuary is described in Fig. 6.

#### 2.2.5. Asbestos contamination of remains

A number of the buildings destroyed during the bushfires were assessed by DVI scene personnel as containing asbestos. Due to the nature of the incident, a large amount of debris was recovered with the human remains, and subsequently transferred to the VIFM. These cases were highlighted as possible ‘asbestos risk’ and the mortuary staff informed. A risk management system of these cases was established whereby a pink “**Caution: Asbestos Risk**” label was tagged to the outside of the body bag, and the cases were isolated for later, grouped examinations.

Following notification of the possibility of asbestos contamination, VIFM obtained advice in relation to the occupational health and safety risks of asbestos exposure. On this advice, standard operating procedures (SOPs) for the decontamination of asbestos at autopsy were developed. This included examination of the contaminated remains in an isolated room and decontamination of staff leaving the area. The steps of the developed procedure performed in an isolated room were:

- Dampen outside of body bag and body with spray bottle.
- Perform the examination within the body bag, where possible avoid using the saw.
- On completion wipe all external containers used for sampling with alcohol wipes.
- Close body bag and dampen thoroughly.
- Spray the entire disposable overall lightly and flush around the footwear area.
- Wipe the goggles thoroughly with a wipe.
- Un-zip disposable overall and remove their arms and then remove gloves.
- Roll the disposable overall down towards the feet to trap any fibres within the suit. When rolled down sufficiently (ankle area), cut the overalls off and place into biohazard bag.
- Remove mask in biohazard bag, and spray underneath footwear.

Furthermore, body movement and re-examination of these cases was kept to a minimum.

#### 2.2.6. Quality review

The following quality systems were established:

- A centralized log of all cases documenting procedures from admission through to examination and storage.
- Systematic audits checking:
  - Consistency in examinations.
  - Consistency in completion of Pink Interpol Phase Two forms.
  - Numbering in all areas of work, including numbering found on body tags, paperwork, computer systems, sampling etc.
- A centralized log documenting the handover of case files and property.
- A final complete check of all paperwork and specimens labeled before the examination of a body was deemed complete.
- Daily audits of the body storage system.

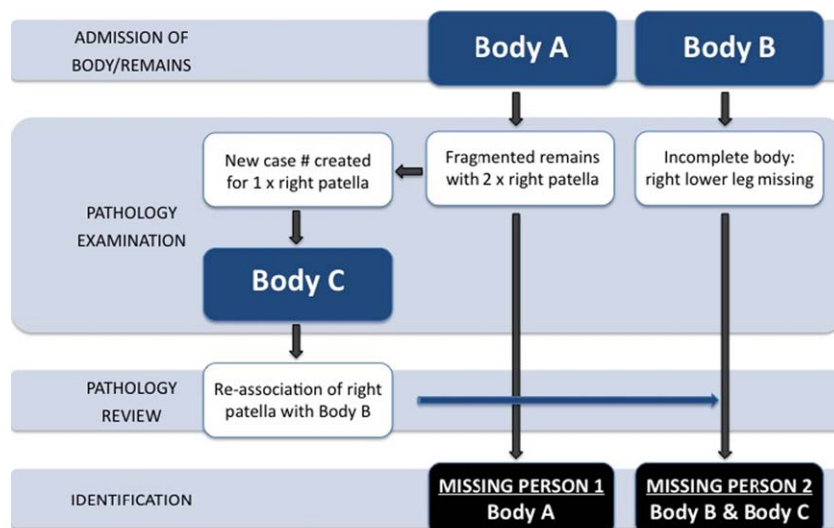


Fig. 5. Management of body parts.



### 2.2.7. Management of body parts and the pathology review of all remains

The pathology examination process proved to be very complex and challenging given the intensity of the bushfires and the destruction of the remains. Very few intact bodies were recovered, multiple deceased persons were found at the one address, the remains were highly fragmented and calcined, and there was co-mingling of human and animal remains.

Although police at the scene attempted to ensure that only one individual was in each body bag, due to the high degree of fragmentation this was not always achieved. In some instances, during the pathology examination, a pathologist or anthropologist discovered evidence of two individuals in one body bag. When this occurred procedures were established as follows:

1. The pathologist would isolate the body parts that appeared to be duplicated and not associated with the primary case.
2. The pathologist requested the Quality Officer to allocate a new DVI number. Contact was made with the DVI Scene Co-ordinator to inform them of the new number.
3. The Coroners office was contacted in order to allocate a new Coroners number.
4. New DVI Pink forms would be created for the new case number and on the pink form clearly noted that these remains were discovered in the body bag of XXXX. These details were also clearly noted on the internal computerised case management system.

Once the examination of all bushfire remains was completed, it was evident that many were associated with one another and could possibly be re-united. A pathology/medical review was held for all of the bushfire remains, prior to the final DVI identification board. For each case a group of medical specialists reviewed the following material: scene and mortuary photographs, CT images

and radiology report, draft autopsy report, and the circumstances surrounding the death. In addition all remains that were discovered at the same location were examined concurrently to determine whether they were able to be reunited. This pathology review process ensured that a consistent identification report was provided to the Coroner, and enabled reconciliation of fragmented remains with the primary case prior to release.

E.g. two body bags were admitted to the mortuary from the same location, Body A and Body B. In body bag containing Body A, there were two right patellas. One of the patellas was separated and given a new case number, Body C. During the pathology review it was noted that:

- Police reports detailed there were two people believed to be missing from this house. The police found the remains of what was believed to be two deceased persons at the house.
- The CT images showed that Body B was missing a lower leg including a patella. Amongst the remains for Body A, B and C there was no evidence of greater than two deceased persons and there were only two people missing from that house.

Therefore it was recommended to the DVI Identification board that Body C (the extra right patella) be reunited with Body B (Fig. 5).

### 2.2.8. Release of identified remains

Once a statement of identification was completed by an Identification Board, the final stage in the identification process was the responsibility of the mortuary. This involved the correct labelling of the human remains with the name of the victim, and the release of the remains to the family via a nominated funeral director. This was conducted with two independent staff members, preferably one within the mortuary and an external person such as a Coroners Office staff member. Once these remains were labelled,

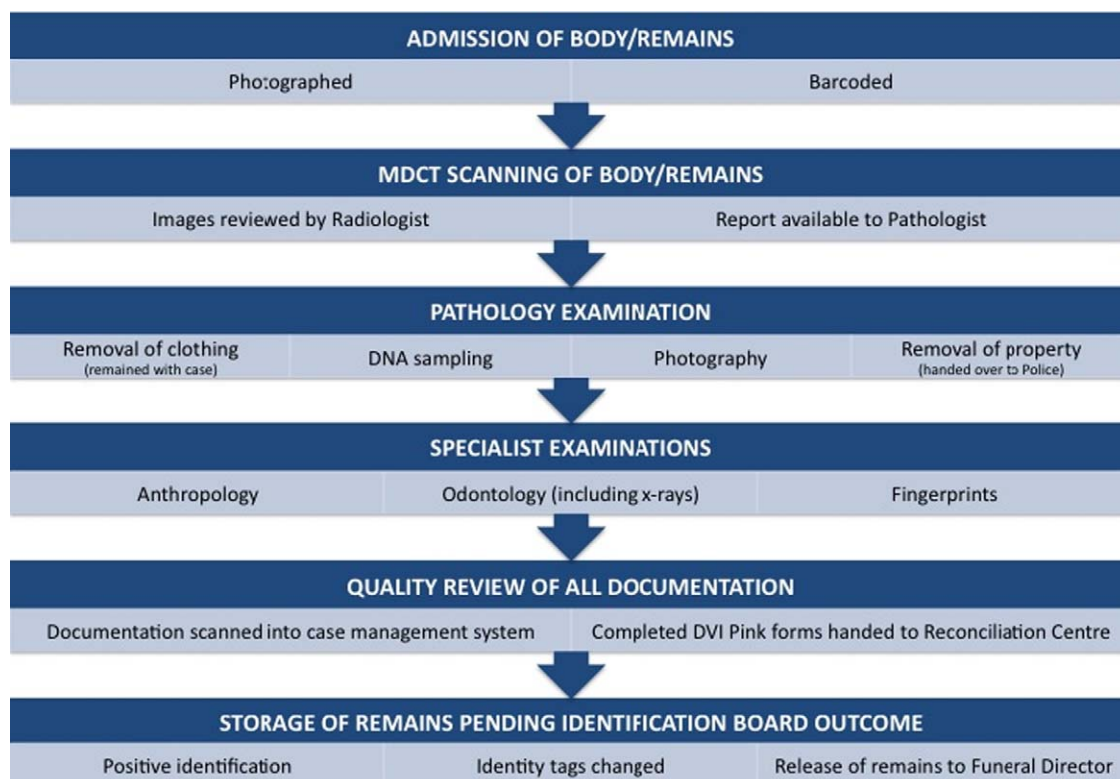


Fig. 6. Mortuary processes.

a senior mortuary staff member released the body from the care of the mortuary to the funeral director (Fig. 6).

### 3. Discussion

The mortuary operation is an integral link between the scene of the disaster and the final release of the victim's bodies to families. The organised and efficient manner in which this operation is conducted will directly impact the accuracy and the timeliness of the identification. The mortuary operations usually begin within 24 h of a disaster occurring. However, if a new temporary mortuary facility is required, the setting-up of this facility will start immediately. A facility being erected within 24 h requires a co-operative and co-ordinated approach by many different personnel from the private and public sector. In many parts of the world there are well resourced co-ordinated disaster management teams such as DMORT and DMART [4,5]. However in many countries including Australia, organisations are reliant on local organisations, companies and resources to establish and manage local facilities. Establishing contacts within this community during the planning stages is essential for the successful management of an operation as it involves the contribution of representatives from many agencies.

Contact details should be listed as part of a plan including plumbers, electricians, builders, suppliers of tentage and equipment. These organisations need an understanding of mortuary needs prior to a disaster so that when the urgency arises, these personnel will have clearly defined roles and responsibilities and a basic understanding of what is required. Using local tradespersons and companies which mortuaries use for daily maintenance within the building also ensures they have an understanding of the environment, including occupational health and safety requirements, and knowledge of the personnel they assist. Those companies that are not involved with day-to-day work are contacted on a regular basis so a relationship is developed and again ensures smooth communication during the initial stages of the operation. Establishing Memoranda of Understandings can also be helpful; however, these should be continually followed up by regular communication with the companies involved.

Following a disaster involving multiple fatalities, one of the first decisions made by emergency management personnel is where the bodies will be stored and managed. Depending on resources and infrastructure, existing facilities are utilised, and a temporary mortuary or temporary body storage facility is established [10].

When considering building a temporary mortuary, body storage facility or using the existing facilities some of the issues which arise are:

Are existing facilities capable of storing the fatalities and still maintaining their routine service?

Funeral homes, hospitals or university anatomy departments may be utilised to support the existing facilities. These locations may be used to store and manage deceased persons routinely examined at the existing forensic mortuary, therefore freeing the forensic mortuary for the DVI operation. However, one of the disadvantages of using multiple locations will be the dilution of human resources: forensic specialists, forensic pathologists and mortuary scientists and technical personnel are often limited in number and may thus be spread thinly. In addition, storing bodies at multiple locations will increase the risk of misplacing or confusing the location of a deceased person, especially at a time when all staff are under considerable stress due to the increase in workload.

- Where is the central disaster located?

If it is located in a remote area a temporary mortuary or body storage facility may need to be established in that area. This could be advantageous if the majority of the deceased come from that

area and therefore their family members reside in the area. Communities often prefer their family members to stay nearby. This preference needs to be weighed against the ability to establish a well equipped operational temporary mortuary in the remote location. It may be possible to establish a temporary body storage facility only and transfer the deceased from the remote area to the existing mortuary when it is ready to receive and examine the deceased person. The preference of local communities may be over-ridden by the logistical calculus.

- Are existing forensic facilities able to house the operation?

The existing facilities may be too small, inadequate, due to the nature of the disaster (e.g. chemical, biological or radiological contamination), or unavailable perhaps because they were involved in the disaster and therefore a temporary mortuary would be required. Many mortuaries around the world have inadequate space to cope with any disaster [13].

Once the mortuary operation is underway quality audits of all procedures are essential and an increasing part of all mortuary operations [14,15]. As with any situation, increased numbers and also increased pressure (whether it be real or perceived) usually results in an increased likelihood of error. In order to reduce this likelihood, all procedures undertaken, where possible, should mimic those used routinely. Systems should be tried and tested and staff should be familiar with and comfortable using all methods on a day-to-day basis. Any deviations from the routine, such as dealing with additional cases through discovery of extra body parts, should be well documented and clearly and repeatedly explained to staff. Robust systems should be implemented to ensure error is detected and rectified, ideally prior to the completion of examinations and before handover of any paperwork.

However, the most important aspect of the mortuary operation is the respect shown for the bodies and human remains. Families have the right to see their relatives' bodies treated with dignity and respect. Although respect is integral to the daily work of mortuary staff, in the event of a disaster the image portrayed in the media of a mortuary can shape the way bereaved families view the management of their missing person. Establishing mortuary facilities that are completely covered, secured and making certain the media or public are not able to view the operation is one way of ensuring that inappropriate images are not made public. By establishing structures that cannot be depicted as 'makeshift' can further promote the professionalism of the operation that lies beneath the structure.

The importance of ensuring body parts are reunited with an identified deceased person was well recognised in the identification of the Vietnam war fatalities. This is not only for providing a timely release to the family of all the parts but also assists in the accurate assessment of the number of fatalities in a disaster [7]. It may also reduce the impact of the coronial process on families. If an identified person is released without smaller body parts, families may have to face the unexpected decision making about disposing of the smaller remains at a later date.

The protocols used in the aftermath of the bushfires were based on standard International DVI protocols [8]. Although some aspects of these protocols are cumbersome, they are universally understood by forensic specialists internationally and across Australia. There are very few disasters of such a scale which can be solely managed by staff from one geographical jurisdiction such as a single State of Australia. Forensic specialists from other jurisdictions are often required to assist in the work. Following the Victorian bushfires, VIFM requested national and international assistance and as a result, pathologists, odontologists and mortuary staff travelled to Victoria to assist in the mortuary operation. All of these staff were well trained in the International

disaster protocol and therefore were able to quickly assist in the operations. However, issues may arise due to differences in individual organisations mortuary SOPs. Establishing an induction procedure for visiting staff should address these differences, including the writing of autopsy reports, standard of personal protective equipment worn, and correct sampling procedures. As mortuary operations are based around small teams working together, having a staff member of the host organisation in each team will enable correct jurisdictional protocols are followed.

Every disaster is also a learning experience. Many of the plans and protocols described above were developed from staff experiences of assisting with or observing other disaster operations. When disaster strikes in a region it is essential that forensic specialists from other jurisdictions are invited to view, learn and advise so that the knowledge is shared and future operations can continually improve.

#### 4. Conclusion

On a daily basis mortuaries operate around the world facilitating the storage, identification and pathology examination of deceased persons. The underpinning protocols for the daily operations should not change when a disaster strikes, however they are magnified and new challenges are introduced. The main challenges faced by our mortuary in this disaster were:

- (a) The storage of multiple deceased persons overwhelming available capacity.
- (b) The tracking and management of increased numbers of deceased persons who were often fragmented.
- (c) Ensuring consistent protocols and quality procedures were followed.
- (d) Addressing occupational health and safety risks of different scenarios, and finally but most importantly.
- (e) The timely and correct repatriation of identified victims back to their families.

By addressing these major challenges in the planning stages prior to the disaster, and ensuring disaster plans include well tested protocols for the establishment of temporary storage and mortuary facilities the mortuary operation should have confidence that it will be able to respond robustly to a disaster of moderate proportions. Who can say how we would have fared if there had been a thousand deaths, or if, during the response, there had been a second unconnected major disaster.

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#### References

- [1] J.L. Prieto, C. Tortosa, A. Bedate, L. Segura, J.M. Abenza, M.C. Mariscal de Gante, J. Conejero, C. Magana, B. Perea, The 11 March 2004 Madrid terrorist attacks: the importance of the mortuary organisation for identification of victims. A critical review, *Int. J. Legal Med.* 121 (2007) 517–522.
- [2] N. Roy, The Asian Tsunami PAHO disaster guidelines in action in India, *Prehosp. Disaster Med.* 21 (2006) 310–315.
- [3] O.W. Morgan, P. Sribanditmongkol, C. Perera, Y. Sulasm, D. Van Alphen, E. Sondorp, Mass fatality management following the South Asian tsunami disaster: case studies in Thailand, Indonesia, and Sri Lanka, *PLoS Med.* 3 (2006) e195.
- [4] M.H. Labovich, J.B. Duke, K.M. Ingwersen, D.B. Roath, Management of a multinational mass fatality incident in Kaprun Austria: a forensic medical perspective, *Mil. Med.* 168 (2003) 19–23.
- [5] R. Ford, T.F. Maher, Civil Defense Agency plans for the provision of mortuary service in large-scale disaster, *N. Engl. J. Med.* 253 (1955) 1044–1046.
- [6] Pan American Health Organization, Management of dead bodies after disasters: a field manual for first responders, in: O. Morgan, M. Tidball-Binz, D. van Alphen (Eds.), Pan American Health Organization, Washington, DC, 2006.
- [7] W.A. Neep, Procedures used by the US Army to ensure proper identification of the Vietnam war dead and their acceptance by the next-of-kin, in: T.D. Stewart (Ed.), Personal Identification in Mass Disasters, Smithsonian Institution, Washington, DC, 1970.
- [8] INTERPOL, Disaster Victim Identification Guide, <http://www.interpol.int/Public/DisasterVictim/Guide.asp>, 2009.
- [9] R.P. Rohan, M. Hettiarachchi, M. Vidanapathirana, S. Perera, Management of dead and missing: aftermath tsunami in Galle, *Leg. Med. (Tokyo)* 11 (Suppl. 1) (2009) S86–88.
- [10] R.W. Byard, C. Cooke, J. Leditschke, Practical issues involved in setting up temporary mortuaries after mass disasters, *Forensic Sci. Med. Pathol.* 2 (2006) 59–61.
- [11] Services Department of Human, January 2009 Heatwave in Victoria: An Assessment of Health Impacts, Victorian Government, Melbourne, 2009, p. 24.
- [12] Victorian Workcover Authority, Code of Practice for Manual Handling, Victorian Government, April 2000, p. 14.
- [13] H.G. De Cauwer, L.J. Mortelmans, V. d'Orio, Are Belgian hospitals prepared for an H5N1-pandemic? *Eur. J. Emerg. Med.* 14 (2007) 204–206.
- [14] D. Ranson, Coroners' autopsies: quality concerns in the United Kingdom, *J. Law Med.* 14 (2007) 315–318.
- [15] S.I. Kvaal, Collection of post mortem data DVI protocols and quality assurance, *Forensic Sci. Int.* 159 (Suppl. 1) (2006) S12–14.