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Forensic aspects of the 2009 Victorian Bushfires Disaster☆

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ABSTRACT

The 2009 Victorian Bushfires Disaster started on a record hot day in February 2009 and resulted in over 300 separate fires with a death toll of 173 and over 400 presentations to hospital emergency departments. This occurred a little over a week after a heat wave in which over 400 people were thought to have died prematurely in southeastern Australia. The Victorian Institute of Forensic Medicine in collaboration with the police force and the State Coroner's Office and over 100 colleagues from all over Australia, Indonesia, New Zealand and Japan implemented a DVI process based on Interpol guidelines to identify the deceased persons. CT scanning was conducted on all remains collected and played a pivotal role in the identification processes in conjunction with experts in pathology, anthropology, forensic odontology and molecular biology. This paper outlines the scale of the disaster and the work, from a forensic medical perspective, to identify the deceased.

1. Introduction

Saturday, February 7, 2009, was the hottest day ever recorded in the state of Victoria, Australia, the temperatures reaching 46.4 °C in Melbourne [1]. In many areas northwest storm force winds approached and even exceeded 90 kph, whilst over the rest of the state, winds were from 40 to 60 kph [2]. Fire Danger Indices were well into the extreme category in nearly all of the State. The previous hottest day in Victoria was 45.6 °C on January 13, 1939, the day of the Black Friday bushfires when 71 people died.

The 2009 Victorian Bushfires Disaster, better known as the Black Saturday bushfires, was a conglomerate of over 300 grass, scrub or forest fires extending over much of Victoria during early February (summer in Australia). The final death toll from this tragedy was 173 deaths, 164 of whom were included in the resultant DVI operation, the remaining 9 individuals being those who died fighting the fires or were victims who died in hospital. The fires started in a variety of ways: a number are thought to be the result of faulty overhead power lines, others are thought to be the work of arsonists, the remainder being due to lightning strike. Many fires were initiated by spotting from existing fires, burning embers being carried by high winds and creating new fire fronts kilometers ahead of the original fire. During the afternoon, a dry, southerly change swept across the State, which simply fanned the flames in different directions. Whilst the fires were not completely extinguished for six weeks, virtually all the deaths occurred on February 7.

This paper outlines the scale of the disaster and the responses to it from the perspective of the Victorian Institute of Forensic Medicine, the organization responsible for the scientific aspects of the Interpol Disaster Victim Identification process.

2. Outline of the heat wave and bushfire disasters

The fires involved 4500 km^2, destroyed 2000 houses and a further 3500 structures. 78 towns were directly affected by the fires and 7500 people were rendered homeless. A total of 173 people died, 24 patients were admitted to burns units, 95 other patients admitted to hospital and 295 people were treated for burns in emergency departments and discharged [3].

Table 1 shows the number of deaths from Australia's nine worst natural disasters. Five of these nine disasters were bushfires involving south eastern Australia. In the two weeks before the Black Saturday bushfires, Victoria (and South Australia) suffered from an even worse natural disaster as measured by lives lost: a heat wave.

The current estimate from Victoria's Chief Health Officer is that there were 374 excess deaths in Victoria as a result of the heat wave [4]. This is likely to be an under-estimate because it is based only on deaths in the period January 26–February 1, the actual days of the heat wave. These deaths involved the most vulnerable in the population: the elderly, the isolated and those who were cognitively impaired, especially where there were other underlying illnesses. These individuals were exposed because of the

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Table 1
Number of deaths from Australia's nine worst natural disasters.

Year	Natural disaster/disaster	Location	Deaths
2009	Heatwave	VIC and SA	374 in VIC [4] and 58 in SA [5]
1899	Cyclone Mahina	Cape York, Qld	>400
2009	Victorian Bushfires	VIC	173
1852	Gundagai floods	NSW	89
1983	Ash Wednesday bushfires	VIC and SA	75
1939	Black Friday bushfires	VIC	71
1974	Cyclone Tracy	NT	71
1967	Tasmania Bushfires	TAS	62
1926	Bushfire	VIC	60

Adapted from [3].
VIC, Victoria; TAS, Tasmania; NT, Northern Territory; NSW, New South Wales; Qld, Queensland; SA, South Australia.

Table 2
Temperatures in Melbourne from January 26 to February 1, 2009.

Day	Max. temperature (°C)	Min. temperature (°C)	Mean temperature (°C)
MON 26	25.5	14.4	19.9
TUES 27	36.4	16.6	26.5
WED 28	43.4	18.8	31.1
THU 29	44.3	25.7	35.0
FRI 30	45.1[a]	25.7	35.4[b]
SAT 31	30.5	22.5	26.5
SUN 1	33.8	20.3	27.0

[a] At the time, second hottest Victorian day ever.
[b] Highest mean ever recorded in Victoria in over 100 years.

relentlessness of the heat wave, as seen in Table 2. The daily mean temperature provides a better estimate of heat exposure than the daily highest temperature, leading to increased mortality.

The heat wave was a major disaster in its own right, but one which has been overtaken in the public consciousness by the bushfires. It also affected the response by the VIFM to the bushfires. Table 3 shows the admissions of deceased persons to the mortuary of the Institute in the fortnight leading up to the bushfires compared with the same fortnight 12 and three months previously.

The number of admissions from the heat wave exceeded VIFM's body storage capacity and autopsy/case management capability. Early in the week prior to February 7, contingency plans for body storage were activated so that, for the first time in VIFM's 21 year history, numbers of deceased were being housed off-site. 30 deceased from the heat wave were still awaiting examination on February 7. Thus, when the bushfires struck, the mortuary at the VIFM was full (with additional bodies stored off-site) and there was a significant backlog of cases awaiting the initial steps of the medico-legal death investigation.

No mass disaster is homogeneous in nature and this was certainly true of the bushfires. This heterogeneity has important implications for the forensic pathology management of such an incident. Whilst the primary imperative of a DVI operation is one of the accurate victim identification, the diverse range of legitimately interested parties are likely to have other imperatives, e.g. criminal prosecution of any arsonists; speedy results for families.

Other aspects of the heterogeneity of the bushfire disaster challenged the forensic investigators: the large number of geographically dispersed scenes (145), many with difficult fire affected access; different types of scene (indoors, outdoors, in motor vehicles); destruction of buildings; co-mingling of remains (including with animals); variability in the preservation and integrity of the remains, and the different means by which the fires where thought to have started. Whilst 'acts of God' such as lightning strike were considered responsible for many of the fires, police suspected arson in some, and later investigations highlighted possible irregularities in the maintenance of high-voltage power lines. Additionally, unlike disasters involving closed populations with finite numbers of victims, the number of fatalities could only be estimated at the outset, with numbers ranging from 150 to over 300 deceased persons, the final number remaining unclear for some weeks.

The legislative responsibility for the overall investigation of deaths in circumstances such as the bushfires resides with the Victorian State Coroner. This responsibility co-exists with the operational responsibility of the State DVI Commander, an Assistant Commissioner of Victoria Police. The DVI operation exists to assist the Coroner to make the ultimate judicial finding about the identity of the deceased. Within this framework sits the Victorian Institute of Forensic Medicine, an independent statutory medical and scientific organization with responsibility to provide forensic pathology and related scientific services for Victoria. This includes undertaking the medico-legal death investigation for all deaths reported to the coroner (which may well include autopsy). This paper does not deal with the State Coroner or Victoria Police's direct responsibilities. Suffice to say that these were substantial, and that a high degree of co-ordination was required by all three organizations to produce the successful outcome.

3. Human identification processes

Understanding the forensic aspects of the Black Saturday bushfires requires an understanding of the Interpol DVI process. (This paper does not include any consideration of aspects related to arson investigations.)

Human identification is the attribution of the correct name to human remains. The core of human identification is the comparison of ante-mortem data, gathered from friends, family and health care providers of the missing person, with post-mortem information gleaned from a thorough examination of the remains of the deceased. The usual comparisons involve: visual identification, fingerprints, dental information and/or DNA testing.

The different areas of comparison relied upon to identify human remains can be set out diagrammatically as in Fig. 1. Human

Table 3
Admissions to the VIFM in the fortnight to February 8, 2009, compared with two other fortnights.

	January 26–February 8, 2009	January 26–February 8, 2008	October 26–November 8, 2008
Total admissions	268	136	129
Average per day	19	10	9

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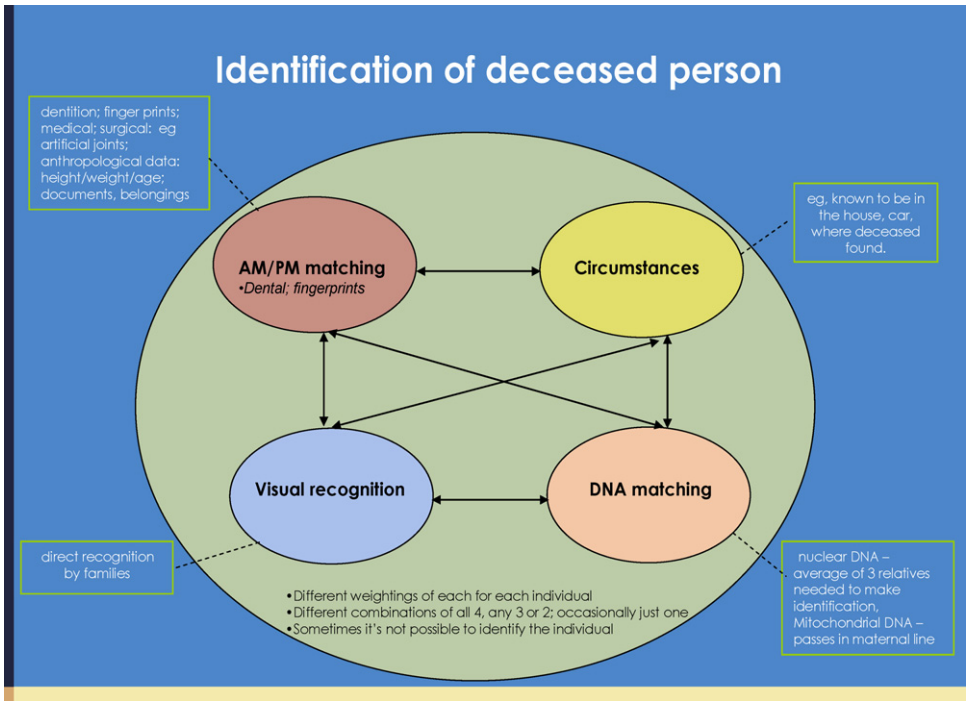

Fig. 1. Diagrammatic representation of the elements relied upon in human identification. Visual recognition does not form part of the formal Interpol DVI process. (Based on a diagram provided courtesy of Dr M. Tidball-Binz, Forensic Co-ordinator, International Committee of the Red Cross, Geneva, Switzerland.)

identification involves any combination of one or more of the above modalities adding up to the identification of the human remains to the satisfaction of the decision maker. The above diagram does not give due weight to the significant role of forensic odontology, which is crucial (see below). Also, it is insufficiently appreciated that circumstances can quite properly play a role in identification.

The conduct of this DVI operation was aided by the implementation of the computer DVI matching program DVI Sys® (Plassdata), which utilizes the Interpol forms in a digital format. This program serves to act as a repository of all ante-mortem and post-mortem information, and has the ability to provide matches between the two data sets based on several different characteristics, for example, dental restorations.

4. The Victorian framework of the disaster response

In Australia, management of the fatalities in a mass disaster is a multi-disciplinary undertaking involving police, specialist forensic personnel and the office of each State Coroner. In the Victorian coronial system, the Coroner – a non-medical, legally trained judicial officer – is legislatively required to find the answers to four questions: who the deceased was, the cause of death, how death occurred (often construed as the manner of death and necessitating an examination of the circumstances surrounding a death) and the particulars necessary for the formal registration of the death. The Victorian Institute of Forensic Medicine (VIFM) is an independent statutory authority operating from a purpose built facility providing medico-legal death investigation services to the Victorian State Coroner. For this purpose, the Institute is staffed by forensic pathologists and other specialist forensic personnel (including odontologists, anthropologists, molecular biologists and toxicologists) who examine bodies and specimens, prepare reports and opinions, and provide evidence in subsequent coronial and other legal proceedings. Under the Coroners Act (Vic) 1985 [6], the Institute is charged with conducting investigations to provide advice to the coroner about the four questions set out above.

Under legislation existing at the time [6] coronial authorization for medico-legal investigation of a death was required before examination of bodies could proceed. Thus, at the outset, a meeting was held with the coroner and agreement reached over what the medical and scientific examination of the remains should entail. The approach ultimately adopted was predicated upon the reasonable (but potentially falsifiable) inference that the cause of death in all cases could be assumed to be, ultimately, the 'effects of fire'. This phraseology was specifically chosen to capture deaths resulting directly from fire (i.e. from smoke inhalation or radiant heat) as well as indirect effects (possible myocardial infarction whilst fleeing fire, or death/severe injury caused by building damage). Thus the decision was taken to treat the medico-legal death investigation primarily as a process of identification with additional investigation and dissection as appropriate to confirm identity, and the *mechanism* of death. For example, in relatively intact bodies, examination of the abdomen was conducted to determine the presence of gall bladder and appendix, the trachea was opened to look for the presence of soot, and samples were taken for toxicological analysis. Further dissection was undertaken in a small number of bodies if pre-autopsy CT scanning revealed injuries possibly inconsistent with the circumstances. The utilization of a restricted or partial autopsy approach was heavily informed by the availability of CT scan data which enabled, amongst other things, the ability to identify prostheses, ascertain the degree of commingling of remains (both human and animal), identify some items of personal property, and exclude significant ante-mortem trauma such as head or chest injuries.

Implicit in the approach outlined above was an acknowledgement by all interested parties that some issues might arise at a later date which could remain unresolved. For example, families seeking information about the precise cause and mechanism of death, estimations of survival times, and the contribution of factors such as natural disease or motor vehicular trauma to the death. These issues were subordinated to the main aims of pursuing accurate and timely identification of the remains and reasonable conclusions about the cause and mechanism of death.

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5. The Interpol DVI process

At what point the Interpol DVI process should be initiated is a subjective assessment. From experience, it is actually quite easy for two individuals who have died in one event to be presented from the scene to the mortuary in such a way that they are confused and misidentified. This, plus the importance of institutions being well trained in the DVI response, means that the process should be initiated often. The Interpol DVI process is a systematic approach to human identification which formalizes the outline in Section 3 above. It separates the process of human identification into five phases:

1. Scene
2. Mortuary
3. Ante-mortem information
4. Reconciliation
5. Debrief

This process is set out in an internationally accepted way with agreed reporting formats [7]. This has the distinct advantage of all the relevant agencies within, and between, jurisdictions working with the same set of procedures and associated forms. This was of considerable practical benefit as agencies from other jurisdictions assisted. Table 4 shows the large number of external organizations who became involved in this operation, highlighting the necessity for standard operating protocols.

Operationally, in the Black Saturday bushfires, the five phases were coordinated in the first instance by daily briefings/meetings involving the three main agencies involved: State Coroners Office, Victoria Police and the Victorian Institute of Forensic Medicine. By week two, these meetings were reduced to three times a week with all Phase Coordinators, and coordinators of the different aspects within the phases. So that, for example, attending from the VIFM were the coordinators of: Pathology; Mortuary; Anthropology; Odontology; Scientific Services; Administration; Building Services; and the overall VIFM Coordinator.

5.1. Phase 1 (scene)

Scenes were attended by police teams, some of whom were trained in specific DVI protocols, whose function was to determine if human remains were present and if so, to collect them in a manner which preserved continuity of those remains to a precise location within the scene. This required mapping the scene, recording it, securing and labeling the remains for the purposes of evidential continuity so there was no confusion with any other remains. 14 scenes were in the open and human remains were found in 8 motor vehicles. There were 145 scenes from which 300 DVI cases were generated. (A DVI case number is allocated to all remains which are possibly human and from one person, retrieved and secured at the scene). The public urgency attached to retrieving as many and as much of the remains as soon as possible was recognized and acted upon, which meant that many of the scenes were not attended by VIFM scene specialists. It turned out, as was to be expected, that it was necessary to revisit some 86 scenes with experts (pathologists, odontologists, anthropologists and/or mortuary scientists) to ensure that no human remains were overlooked. Protocols arising out of the debrief process conducted following the completion of this DVI operation concerning recovery of remains are discussed in the paper by Bassed and Leditchske [9].

At the time of writing, over one year later, no human remains relating to the bushfires have been found other than through the formal Phase 1 DVI process. That is, it would appear that obvious human remains have not been overlooked. Given the necessary heavy reliance on non-medical and non-scientific police personnel in Phase 1, this would appear to be a considerable achievement.

Table 4
Organizations which contributed services and/or personnel during the DVI operation.

ACT Health	ACT Pathology
Alzheimer's Australian (QLD) Inc.	Austin Hospital
Australian Federal Police (AFP)	Australian Navy
Australian Society of Forensic Odontology	Ballarat Health Services
Bendigo Hospital Pathology Services	Department of Forensic Medicine (Sydney)
Dental Health Services Victoria (DHSV)	Forensic Science SA
Griffith University	Hunter New England Health Department of Medicine
Merit Consulting	NSW Health
NZ Defence Force	Pathwest Laboratory Medicine WA
Peter Mac Callum Cancer Institute	Queensland Health
Queensland Health Forensic & Scientific Services	Royal Melbourne Dental Hospital
St. John of God Pathology	Sydney Dental Hospital
University of Melbourne	University of Newcastle
University of Otago (on behalf of NZ Police)	Victoria Police Forensic Services Department
Westmead Hospital	

5.2. Phase 2 (mortuary)

Although VIFM staff were involved in all DVI phases, Phase 2 was the direct responsibility of the Institute with considerable assistance of external personnel.

On the night of February 7, notification of a possible 12 deceased persons was made, activating the DVI plan. (In fact, by this time, most of the 173 deaths had already occurred). This resulted in a meeting the next morning of the various coordinators (Mortuary, Scientific Services, Odontology, Administration, Pathology and Facilities Management) to begin implementing the response. All available pathologists and mortuary staff were called in to clear the backlog of "routine" cases (including those deceased from the heat wave).

At this stage about 40 deceased had been discovered, however many more deaths were anticipated. Plans were implemented to cater for up to 300 deceased persons. Contingencies were activated to obtain additional mortuary storage space to handle up to this number. These facilities required water connections, electricity, and a good quality marquee including a passageway into the mortuary proper. This was complete by the Monday evening, February 9. At the same time security fencing was erected, with related access arrangements managed by police.

Already by this time, massive support was being offered from all quarters, including numerous colleagues and the Department of Justice to which the Institute is administratively responsible. From the outset there was a major extra burden placed on administrative staff to keep track of staff and volunteer movements, arrange their travel and accommodation, ensure their adequate induction, obtain undertakings and other information from contractors and volunteers, obtain supplies, arrange catering on site for the duration of the exercise, amongst other things. The importance of good performance in this domain for the overall success of the operation is often under-estimated.

IT staff under the control of the Institute were required to arrange additional cabling, including network hubs, and the installation of 26 additional computers with access to DVI Sys®. VIFM coordinators began equipping and staffing up for their specific components of the Phase 2 response. This included additional pathologists, odontologists, mortuary technicians,

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anthropologists and molecular biologists. In consultation with Victoria Police, existing arrangements for the necessary other components of mortuary based teams were activated, such as photographers, note-takers, exhibits officers and finger print officers.

Radiology assumed a major role in the triage process whilst remains were still in body bags, and subsequently in the formal identification processes used in the mortuary. Post-graduate fellows from Malaysia and Japan, assisted the Institute radiologist [9].

The role of the CT scanner was pivotal in our response to this disaster, although the degree to which it could help was very much dependent on the type and scale of the disaster and the nature of the remains being examined. The CT scanner was purchased as part of Victoria's response to preparing for possible terrorist events ahead of the 2006 Commonwealth Games in Melbourne. This, in turn, was a response to the Bali bombings. In the five years of operation until the bushfire disaster it became a integral part of everyday casework and had been used in smaller scale disasters, such as light plane crashes [8]. On a daily basis it contributes to the quality of our medico-legal death investigations and provides valuable information on parts of the body which are not routinely or easily examined in detail during autopsy (e.g. skeleton of the spine, limbs, scapulae, face). In some cases, it may provide sufficient information to answer the questions in particular cases such that the necessity for autopsy from a coronial point of view is by-passed.

The specific function of the CT scanner in this disaster was to triage all DVI cases prior to formal physical examination. This triage enabled VIFM medical and scientific staff to know what was present in the body bags prior to opening them. In many cases information such as age (dentition), gender (anthropology), presence of medical prostheses (pathology), and the presence of both human and non-human commingling of remains, was able to be provided as a result of CT scanning. Further details regarding the contribution of the CT scanner can be seen in O'Donnell et al. [10], and Bassed and Hill [11] in this journal.

Table 5 sets out the contribution of the CT scanner during the response to the bushfires.

There were 300 DVI cases submitted from the scenes representing ultimately 163 individuals, no remains being located for one individual. The large number of commingled and fragmented remains created difficulties not only for forensic medical investigators, but also for the Coroner, in terms of how to treat these remains. Some of these remains could be re-associated back to a particular individual, but more often than not, because of the degree of incineration, they were unable to be assigned. Human remains which were determined by examination to be anatomically identifiable as a defined body part underwent extensive investigation by molecular biologists, anthropologists, and pathologists in an attempt to assign them to an individual during the pathology review process. This review process included perusal of all scene images, all autopsy images, all CT images, and careful reading of the completed Interpol forms. Those remains which were unable to be anatomically classified, such as fragments of long bones, and which could not be linked by location and/or compelling circumstance to a particular individual, were classified as unknown human remains.

In the case of commingled remains which were unable to be separated into discrete individuals, and where circumstances indicated the individuals involved belonged to the one family, next of kin were consulted about their wishes in relation to the remains being released in this commingled fashion. In cases where unrelated individuals were commingled, body parts which could be definitely identified were separated out, and the remaining fragmentary remains were labeled as "unidentified".

5.3. Phase 3 (ante-mortem)

Phase 3 involves the collection of ante-mortem data. This is the information that ultimately was compared with the data collected in Phase 2 (and Phase 1) to enable specific identifications to be recommended to the Coroner. This phase involved the collection of medical records, dental records, "Guthrie" cards (being the drop of blood that is taken at birth from almost all those born in Victoria for the purposes of testing for inborn errors of metabolism, e.g. phenylketonuria). The card is retained and stored and the DNA profile of the blood can be directly compared with the DNA profile of deceased remains for the purposes of identification. Phase 3 also involved the structured interview of next of kin in order to gather information about the missing person who is feared to be dead. This information included matters such as the height, weight, hair length and color, particular distinguishing marks such as skin blemishes or tattoos, any jewellery and the clothing being worn when last seen. These are obviously very difficult interviews for families; they were conducted by a team of 130 police detectives, accompanied by grief counselors.

Forensic odontologists were involved in helping to obtain dental records. In some cases this included obtaining the assistance

Table 5
The contribution of the CT scanner to identification.

With CT scanner	Aspect	Without CT scanner
Information about contents of DVI case (e.g. commingled remains; animal remains; adult/child/gender; personal belongings; prostheses; dental information) available upon scanning immediately following admission	Early information	Information about contents of DVI case not available until body bag opened under controlled circumstances in the mortuary days or even weeks later
Much identifying information (as above) could be seen, and pathologist could be directed to items of specific importance. This provides valuable information in its own right, and speeds and improves the quality of the post-mortem examination. Each case examined in the mortuary with the benefit of a CT scan report available. Pathologists/anthropologists/dentists started by knowing what they were looking for and where it was	Early information	Pathologist proceeds in complete absence of any such information and must discover and evaluate all the elements *ab initio*. This can be difficult, especially in circumstances of the effects of fire
The CT scan provides a user friendly record of much of the identifying material, both in terms of subsequent review or answering later questions and in terms of showing to lay people including coroners (and even families)	Records	Heavy reliance on photography which is a single two dimensional representation, contains much extraneous material including conveying the reality of the human remains in a way which is avoided by radiological imaging (some photography still very important)
The above elements mean that the mortuary based work could be prioritised and matched more effectively to the skills and resources available	Work flow	Simply approach the work on a one by one case basis in a triaging vacuum

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of medical insurers to provide names and addresses of dentists who had provided care so that records could be obtained. Clinical forensic physicians from the Institute were involved in reading through the medical records looking for anything that might assist with identification, such as previous surgery, insertion of prostheses or illnesses that might be expected to be detected.

All ante-mortem data collected was entered onto DVI Sys® by police, and by members of the odontology and clinical forensic medical teams.

5.4. Phase 4 (reconciliation)

Reconciliation is the process whereby ante-mortem and post-mortem data are matched, thus providing a scientifically robust conclusion concerning the identity of a particular set of human remains. This process involves input by all forensic disciplines, as well as circumstantial evidence gathered in Phase 1 and Phase 3. In order that the inevitable and complex cross-linkage of case numbers and individuals might more easily be comprehended by the coroner, a review of all case numbers was performed by the pathology coordinator along with the mortuary manager, odontologist, anthropologist, police member and molecular biologist. This review process had the additional advantage of a centralised case review prior to release of remains so that any possible discrepancies or inconsistencies might be addressed.

Whilst the medico-legal examination of the remains was directed primarily to issues of identification, the ultimate legal confirmation of identity could only be made following formal judicial, coronial decision. To that end, and at the end of the process of mortuary and ancillary investigations, a series of identification boards were held at which medical and scientific evidence was presented to the Coroner. This process was complicated since there were more DVI case numbers than presumed deceased individuals (300 cases representing 164 individuals).

Phase 4 brings together all the information gathered and synthesizes it to produce the identification brief which is presented to the Coroner at the Identification Board. The Identification Board was not a public hearing, but its proceedings were recorded in the event this was something families wished to hear, or to have transcribed. At the Board, the Victoria Police Officer assisting the Coroner presented the reasons why the remains were thought to be those of a particular named person. The relevant specialists presented the specific aspects of the dental, molecular biological (DNA) or anthropological results that formed the basis of the particular identification. Further details regarding the specifics of each discipline's contribution are presented in other papers in this journal [9–20].

Managing the huge amount of information is a particular challenge. It is beyond the scope of this paper to critique the value of DVI Sys® in the response to this disaster.

5.5. Phase 5 (debrief)

The Institute conducted its own in-house debriefing exercise as well as participating in a comprehensive process, with an external facilitator, involving the State Coroners Office and Victoria Police. This was completed in time for its outcomes to be available and implemented as far as possible prior to the 2009/2010 fire season [9].

6. Conclusion

This is an overview of a highly complex organism that came into existence to respond to the demands of human identification following a mass disaster. It concentrates on the role of the Victorian Institute of Forensic Medicine. It does not do justice to the contribution of well over 100 colleagues from all over Australia, Indonesia, New Zealand, and Japan who came and gave their time to help. It does not cover the role and work of the State Coroners Office and Victoria Police. It does not do justice to the families of those who died, in whose name all this happens, who have gone through a time the rest of us cannot really imagine.

The final identifications were formally made by the State Coroner on May 7, 2009, exactly three months to the day of Black Saturday.

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