

Australian Society of Forensic Odontology Inc

Disaster Victim Identification Forensic Odontology Guide

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1. INTRODUCTION

Disaster Victim Identification (DVI) is the term given to procedures used to identify deceased victims of a multiple fatality event.

Forensic odontology is one of the specialist disciplines used to facilitate identification. Post-mortem data and ante-mortem dental information is compared to provide an opinion regarding identity. Observation, experimentation, studies and research support the hypothesis that teeth are highly individual. Identity is established by finding agreement of corresponding individual characteristics of such number or significance as to preclude the possibility (or probability) of their having occurred by mere coincidence, and establishing that there are no differences which cannot be accounted for.

2. THE AUSTRALIAN SOCIETY OF FORENSIC ODONTOLOGY

The Australian Society of Forensic Odontology (AuSFO) was established in 1983, as the Australian Society of Forensic Dentistry. Its objectives include:

- to advance the study of forensic odontology and its application to the law;
- to maintain a roster of forensic odontologists who are available to deploy to mass disasters as required by relevant authorities;
- to act as a conduit for forensic odontology deployments in mass disasters;
- to advance the science of Forensic Odontology

The AuSFO is a society open to any dental professional of good standing with an interest in forensic odontology. It has no legislative or administrative function, but aims to represent forensic odontologists in their interactions with stakeholders. In this context it is the overarching body facilitating the involvement of member forensic odontologists in DVI, both nationally and internationally.

3. MISSION STATEMENT

AuSFO is committed to providing a high quality and timely service to the Australian and international communities in the event of a state, national or international multiple fatality incident.

4. SCOPE

The practices used by AuSFO members comply with Interpol Guidelines and internationally accepted practice.

Forensic odontology has a role in each of the phases of DVI. The level of involvement and responsibility in each of these phases will vary according to the nature and locale of the incident.

This document recommends protocols for the deployment of AuSFO members both nationally and internationally and provides a comprehensive best practice model of protocols and procedures for the management of the odontology components of DVI. This document may also be used to outline the practices and protocols to be followed by international forensic odontologists should they be deployed in Australia.

This document is to be read and used in conjunction with:

- The Interpol Disaster Victim Identification Guide;
- The Australasian DVI Standards Manual;
- Any existing State or Territory DVI Plan;
- The Interpol Quality Management Guidelines for Disaster Victim Identification – (ISO/IEC 17205 Application);

- The EMA OSMASPLAN;
- The Australian DVI Activation and Response Plan.

5. TERMS AND DEFINITIONS

Forensic Odontology: The branch of dentistry that is involved with the examination and evaluation of dental evidence, which may be presented in the interests of justice.

Forensic Odontologist: Registered Specialist in Forensic Odontology (e.g. with the Dental Board of Australia).

State/Territory Odontology Co-ordinator: The odontologist recognised by the State or Territory DVI lead agency as the responsible DVI Odontology Co-ordinator in that State or Territory DVI Plan.

Odontology Co-ordinator: Overall Australian manager of forensic odontology in an International DVI event. Internationally this position will become the responsibility of the President of the AuSFO (or nominee) and nationally the responsibility of the State or Territory Odontology Co-ordinator in consultation with the AuSFO President, as required by the lead DVI agency.

Odontology Team: A forensic identification group(s) under the leadership of a dental co-ordinator.

Jurisdiction: The Australian Federal Police or a state or territory police force, providing DVI.

Lead Agency: The organisation responsible for the investigation of the DVI incident.

Phase: DVI activities comprise a number of separate but related phases; the scene, ante-mortem information collection and family liaison, post-mortem data collection, reconciliation and operational debrief.

6. AuSFO REPRESENTATION

The AuSFO representative on the Australasian DVI Committee shall be the President or a nominee. Any representative shall not hold this office consecutively for longer than two years.

7. ROLE, ORGANISATION AND MANAGEMENT

7.1 Role

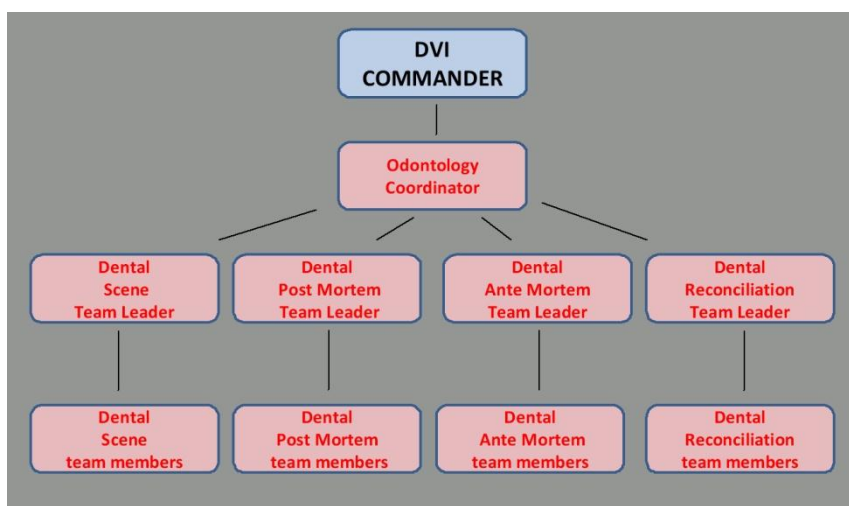
AuSFO members will be able to participate in national or international incidents at the Initial Response, Co-ordinator, Team Leader, or Practitioner level. Responsibilities of, and standard operating procedures for, each of these positions are described in Sections 12 and 13.

7.2 Organisation

The AuSFO acknowledges the need for management structures within their own group, and the need to interact with other practitioners according to the Chain of Command outlined in the Australasian DVI standards or as promulgated by the lead DVI agency.

Management of each odontological phase in the DVI process requires supervision by a suitably qualified forensic odontologist meeting AuSFO standards.

The Odontology team will have the following organisational structure:



7.3 Management

The Odontology Co-ordinator reports directly to, and is answerable to, the DVI Commander. Each member of the odontology team will be accountable to only one immediate supervisor.

All representations for, and on behalf of, the odontology team will be made only through the Odontology Co-ordinator. The Odontology Co-ordinator will only relay information through the DVI Commander or their delegate, never directly to external agencies or persons.

Established performance criteria and expectations will be documented and understood by all odontology team members.

8. PERSONNEL

Dentists wishing to be recognised by the AuSFO as forensic odontologists capable of working outside their home state or territory must meet the following criteria:

- 8.1 For working within Australia they must:
- be registered as a specialist in forensic odontology or a dentist in Australia, and
 - have undertaken, or be undertaking graduate training, or have equivalent experience in forensic odontology, which must include training in DVI, and
 - demonstrate evidence of relevant recent experience in the practice of forensic odontology.
- 8.2 For international deployment they must:
- be registered as a specialist in forensic odontology or a dentist in Australia, and
 - have undertaken graduate training or equivalent experience in forensic odontology, which must include training in DVI, and
 - demonstrate evidence of relevant recent experience in the practice of forensic odontology, and
 - provide evidence of experience in disaster victim identification (not necessarily international).
- 8.3 For deployment as an Initial Response Odontologist and/or Odontology Co-ordinator in an overseas DVI incident;
- all of the above (8.2) plus,
 - be recognised as a state/territory Odontology Co-ordinator or have experience as an Odontology Co-ordinator in a major incident (not necessarily international), and/or

- have participated in a DVI Co-ordinators workshop run by the Australasian DVI Committee or equivalent.

9. DEPLOYMENT REGISTER

- 9.1 A register of appropriately qualified odontologists available for deployment will be kept and managed by the AuSFO under the direction of the President (or deputy). The register will be updated annually, and failure by an odontologist to provide the required information in a timely manner will be taken as indication of a desire to be removed from the register. Listing in this register of those willing to be deployed overseas is voluntary.
- 9.2 Listing in this register does not guarantee deployment in any or every incident. The register will be used to establish availability and generate a roster of odontologists to be deployed for any given incident.

10. REQUESTS FOR ODONTOLOGY ASSISTANCE

- 10.1 The AuSFO President (or their nominee) will be the contact person for all requests for national or international deployment of AuSFO members.
- 10.2 The AuSFO President will manage deployment of Initial Response Odontologists for international incidents via an internal roster system of the states and territories. While on roster (see Appendix 1), each State/Territory (or combination) agrees to have two odontologists available for immediate deployment.
- 10.3 Upon receiving a request from the Lead DVI Agency and advice from the Initial Response Odontology team and for additional odontology services, the Initial Response Odontologist, or the President (or nominee) will assume the responsibilities of Odontology Co-ordinator at the international incident. The Vice President (or nominee) will assume the position of Australian based Liaison Odontologist and commence compilation of a deployment roster. The AuSFO Executive will nominate a co-ordination group to assist the Vice President.

11. CODE OF CONDUCT

- 11.1 AuSFO members recognise and acknowledge the requirement for adherence to these protocols and the principles of teamwork when interacting with DVI practitioners of this or another discipline and at any level. Such interaction must be professional at all times.
- 11.2 All persons included in the deployment register agree to abide by the principles embodied in this document.
- 11.3 All AuSFO members recognise the confidential nature of DVI work, and will respect this confidentiality and undertake that no complaints or grievances will be aired outside this confidential environment.

12. RESPONSIBILITIES

12.1 AUSFO President

On receiving advice of an international incident the AuSFO President will:

- 12.1.1 Contact the National DVI Chair for clarification of any role;
- 12.1.2 Liaise with the lead DVI agency;
- 12.1.3 Confirm odontology terms of deployment;

- 12.1.4 Contact On Call Odontologist and advise if Initial Response Odontologists required;
- 12.1.5 Contact AuSFO Executive and advise what assistance required;
- 12.1.6 Contact the State and Territory Odontology Co-ordinators to advise that an incident has occurred or that a request for assistance has been received, and to request advice of available assets: the number of persons available for deployment, the equipment available and capacity to collate ante-mortem information;
- 12.1.7 Ensure smooth hand over to Vice President and co-ordination group.

12.2 Initial Response Odontologists (International Incident only)

Initial Response Odontologists are provided by the State/Territory on call at the time of the incident, in consultation with the AuSFO President. There will always be two initial response odontologists for each and every deployment. On arrival at the international site they will:

- 12.2.1 Liaise with local odontologist/DVI team and provide support and advice where appropriate;
- 12.2.2 In conjunction with local odontologist/DVI Co-ordinator assess odontology personnel and equipment resources required;
- 12.2.3 If assistance requested, in conjunction with DVI Commander, lead DVI agency and Australian based Liaison Odontologist, facilitate deployment of required odontologists and equipment;
- 12.2.4 Ensure smooth hand over to Odontology Co-ordinator.

12.3 Odontology Co-ordinator (State and International, at site of Incident)

The Odontology Co-ordinator will:

- 12.3.1 Establish an odontology plan and standard operating procedures (SOP);
- 12.3.2 Liaise with the DVI Commander regarding the specific protocols of relevance to odontology – eg use of teeth for DNA sampling;
- 12.3.3 Appoint Team Leaders;
- 12.3.4 Ensure agreed practices and procedures are followed;
- 12.3.5 Monitor odontology personnel and equipment requirements;
- 12.3.6 During an overseas incident, maintain daily contact with the Australian-based Liaison Odontologist regarding deployment rotations, ante-mortem collation etc;
- 12.3.7 Monitor register of attendance of odontologists;
- 12.3.8 Conduct daily liaison with DVI Commander;
- 12.3.9 Conduct daily (end of day) meeting with Team Leaders;
- 12.3.10 Liaise with Team Leaders regarding daily rotations of members and any needed amendments to SOP;
- 12.3.11 Ensure all incoming odontologists are met on arrival and briefed on accommodation, transport arrangements, DVI situation, phase allocation, SOP and OHS&W issues;
- 12.3.12 Appoint a review committee to investigate all internal complaints;
- 12.3.13 Facilitate transport as required;
- 12.3.14 Ensure quality control procedures are utilised in the odontology identification process;
- 12.3.15 If requested, sit on Identification Board.

12.4 Australian Based Liaison Odontologist (International Incident Only)

Unless being deployed as an Initial Response Odontologist this person is likely to be the AuSFO Vice President in the first instance. The Australian-based Liaison Odontologist for an overseas incident will (For an Australian incident these duties will be assumed by the state or territory Odontology Co-ordinator):

- 12.4.1 Maintain contact with Incident-based Odontology Co-ordinator;
- 12.4.2 Liaise with Lead DVI agency;
- 12.4.3 Manage deployment roster, in conjunction with co-ordination group;
- 12.4.4 Ensure all deploying odontologists are briefed on travel and accommodation, and requirements of deployment;

- 12.4.5 Ensure regular and detailed information exchange with the membership of the AuSFO,
- 12.4.6 If being deployed, fully brief replacement.

12.5 Scene Odontology Team Member

An odontologist working at the scene will:

- 12.5.1 Work as part of a DVI scene team as requested by the DVI Scene Coordinator and the Odontology Co-ordinator;
- 12.5.2 Assess the condition of the dental remains and the complexity of the required tasks;
- 12.5.3 Locate dental and facial remains of victims;
- 12.5.4 Advise the DVI Scene Coordinator on stabilisation and preservation techniques of dental and facial remains;
- 12.5.5 Conduct stabilisation and preservation of remains where required;
- 12.5.6 Advise on the removal from the site of remains and the need for any records (e.g. photographs) prior to removal;
- 12.5.7 Comply with OHS&W and infection control requirements as defined by the Lead DVI Agency Health and Safety Officer.

12.6 Post-mortem Odontology Team Leader

The post-mortem odontology team leader will:

- 12.6.1 Oversee the general running and practice standards of the post-mortem odontology team and consult with the Post-mortem Coordinator on workflow and other operational issues;
- 12.6.2 Daily, report to the Odontology Co-ordinator on progress by the post-mortem odontology team and team management and any other matters that might involve the team;
- 12.6.3 Supervise the workflow in the post-mortem odontology examination area;
- 12.6.4 Ensure all the documentation for all procedures is correctly and completely recorded;
- 12.6.5 Daily, supervise the internal rostering of staff within the post-mortem odontology team;
- 12.6.6 Ensure post-mortem odontology team members have been briefed on SOP and are familiar with radiographic and any other equipment;
- 12.6.7 Ensure radiographic and photographic equipment is correctly maintained;
- 12.6.8 Ensure no DNA contamination between cases;
- 12.6.9 Supervise requests from other DVI sections regarding dental information and reviews;
- 12.6.10 Ensure all members understand and observe OHS&W protocol within the post-mortem area and notify the Odontology Co-ordinator of any lapses or possible concerns. Keep detailed records of any events that are notified and the actions taken;
- 12.6.11 Supervise quality control and assurance of odontology examinations as required by the DVI agency protocol, AuSFO guidelines and internationally accepted practice standards;
- 12.6.12 Nominate a deputy prior to leaving the post-mortem odontology area during working hours;
- 12.6.13 Daily, backup data and retain on the post-mortem odontology team leader's computer hard drive.

12.7 Post-mortem Odontology Examination Team Member

A post-mortem odontology examination team member will:

- 12.7.1 Examine the victim's dentition and record dental status on pink Interpol F1 and F2 forms using standard Interpol and AuSFO recording practices, as directed in SOP and in a format suitable for the reconciliation phase as required by the Lead DVI agency;

- 12.7.2 Ensure all pages of Interpol form requiring dental information are completed;
- 12.7.3 Take photographs as required;
- 12.7.4 Take dental radiographs (unless a dedicated radiography team is being employed);
- 12.7.5 Take impressions of arches, as required;
- 12.7.6 Extract teeth for DNA sampling, as required;
- 12.7.7 Ensure clear separation of clean and contaminated staff, work areas and equipment is maintained;
- 12.7.8 Maintain sound OHS&W practices and notify the post-mortem odontology team leader of any lapses or possible concerns.

12.8 Post-mortem Odontology Radiography Team Member

A post-mortem odontology radiography team member will:

- 12.8.1 Take dental radiographs of each body, as directed in SOP;
- 12.8.2 Ensure digital file is correctly archived according to SOP or analogue films correctly developed, mounted and labelled;
- 12.8.3 Ensure clear separation of clean and contaminated staff, work areas and equipment is maintained;
- 12.8.4 Maintain sound OHS&W practices and notify the post-mortem odontology team leader of any lapses or possible concerns.

12.9 Ante-mortem Odontology Team Leader

The ante-mortem odontology team leader will:

- 12.9.1 Oversee the general running and practice standards of the ante-mortem odontology team and consult with the Odontology Co-ordinator daily on team management and any other matters that might involve the team;
- 12.9.2 Daily, report to the Odontology Co-ordinator on progress by the ante-mortem odontology team;
- 12.9.3 Supervise delivery and release of dental records and non-written data (models, appliances etc) to and from the ante-mortem area and maintain the *AM Dental Records Register* of file (and parts thereof) movements to and from the ante-mortem odontology area;
- 12.9.4 Daily, supervise the internal rostering of staff within the ante-mortem odontology team area;
- 12.9.5 Brief incoming odontologists on SOP;
- 12.9.6 Ensure all members understand and maintain OHS&W protocol within the ante-mortem odontology area and notify the Odontology Co-ordinator of any lapses or possible concerns. Keep detailed records of any events that are notified and the actions taken;
- 12.9.7 Supervise quality control and assurance of dental records management as required by the DVI agency protocol, AuSFO guidelines and internationally accepted standards of practice;
- 12.9.8 Liaise with the Ante-mortem Co-ordinator on matters relating to file management procedure and protocol outside the ante-mortem odontology team area. This includes requests for data from ante-mortem interview teams, international data requests and collection of available dental data;
- 12.9.9 Provide support advice to ante-mortem interview teams and other DVI personnel on dental data requirements;
- 12.9.10 Supervise requests from other DVI sections regarding dental record information and reviews;
- 12.9.11 Nominate a deputy prior to leaving the ante-mortem odontology area during working hours or when the area is not secured;
- 12.9.12 Daily, backup data, retain on the ante-mortem odontology team leader's computer hard drive.

12.10 Ante-mortem Odontology Phone Team Member

An ante-mortem odontology phone team member will:

- 12.10.1 Manage phone communications with the providers of dental data;
- 12.10.2 Manage ante-mortem data collection from those sources;
- 12.10.3 Keep accurate running sheets of all events, as required by Lead DVI Agency;
- 12.10.4 Maintain the ante-mortem working register issued to that member, recording all files handled, instruction given and by whom, action taken and current progress status;
- 12.10.5 Maintain sound OHS&W practices and notify the ante-mortem odontology team leader of any lapses or possible concerns.

12.11 Ante-mortem Odontology Data Input Team Member

The ante-mortem dental data is to be compiled by odontologists working in pairs. An ante-mortem odontology data input team member will:

- 12.11.1 Receive and transcribe dental records of case files allocated by the ante-mortem odontology team leader in to yellow Interpol F1 and F2 forms using standard Interpol and AuSFO recording practices as directed in SOP and in a format suitable for the reconciliation phase as required by the Lead DVI agency;
- 12.11.2 Input data into the computer DVI data base (if one is used) using format as instructed;
- 12.11.3 Maintain accurate running sheets of each case, as required by Lead DVI Agency;
- 12.11.4 Notify the ante-mortem odontology team leader of any other dental data that might be available elsewhere for further action;
- 12.11.5 Maintain sound OHS&W practices and notify the ante-mortem odontology team leader of any lapses or possible concerns.

12.12 Reconciliation Odontology Team Leader

The reconciliation odontology team leader will:

- 12.12.1 Oversee the general running and practice standards of the reconciliation odontology team (including search procedures, comparison management and reviews) and consult with the Odontology Co-ordinator daily on team management and any other matters that might involve the team;
- 12.12.2 Daily, report to the Odontology Co-ordinator on the progress of the reconciliation dental team;
- 12.12.3 Supervise delivery and release of dental records to and from the reconciliation dental area and maintain a Reconciliation Dental Register of files (and parts thereof) movements to and from the reconciliation dental area;
- 12.12.4 Daily, supervise the internal rostering of staff within the reconciliation odontology team area;
- 12.12.5 Brief incoming odontologists on SOP;
- 12.12.6 Ensure all members understand and maintain OHS&W protocols within the reconciliation odontology area and notify the Odontology Co-ordinator of any lapses or possible concerns. Keep detailed records of any events that are notified and the actions taken;
- 12.12.7 Supervise quality control and quality assurance of dental records management as required by the DVI agency protocols, AuSFO guidelines and internationally accepted standards of practice;
- 12.12.8 Liaise with the Reconciliation Co-ordinator on matters relating to file management procedure and protocol outside the reconciliation dental team area;
- 12.12.9 Review all odontology reconciliation recommendations prior to submission to the Reconciliation Coordinator;

- 12.12.10 Supervise requests from other DVI sections regarding dental reconciliation and reviews;
- 12.12.11 Nominate a deputy prior to leaving the reconciliation odontology area during working hours or when the area is not secured;
- 12.12.12 Daily, backup data, and retain on the reconciliation odontology team leader's computer hard drive.

12.13 Reconciliation Odontology Team Member

A reconciliation odontology team member will:

- 12.13.1 Review potentially matching ante-mortem and post-mortem files as directed by SOP;
- 12.13.2 Keep accurate running sheets of all events, as required by lead DVI agency;
- 12.13.3 Maintain the Dental Reconciliation Working Register issued to that member, recording all files handled, instruction given and by whom, action taken and current progress status;
- 12.13.4 Maintain sound OHS&W practices and notify the reconciliation odontology team leader of any lapses or possible concerns.

12.14 AUSFO Quality Manager

The Quality Manager for the Australian Society of Forensic Odontology will:

- 12.14.1 Develop and promulgate quality control systems suitable for use in all phases of a dental DVI operation;
- 12.14.2 Maintain the quality manual and associated documentation;
- 12.14.3 Review the quality manual and associated documentation annually;
- 12.14.4 Ensure validation of any new techniques;
- 12.14.5 Facilitate the conduct and evaluation of internal audits;
- 12.14.6 Coordinate quality system audits;
- 12.14.7 Make training recommendations to improve the skills of DVI personnel;
- 12.14.8 Review any feedback;
- 12.14.9 Recommend changes and improvements to the DVI quality system;
- 12.14.10 Maintain any archival material and facilitate its use in training.

The highest standards of information gathering, data recording and data entry are necessary in a DVI incident. Team Leaders will assume the role of Quality Manager at most incidents and provide quality assurance.

The Quality Manager(s) at a DVI incident will:

- 12.14.11 Monitor operations to verify compliance with procedures and practices;
- 12.14.12 Investigate reasons for poor data and information collection and recording, and recommend remedial action(s);
- 12.14.13 Daily, liaise with Odontology Co-ordinator;
- 12.14.14 In the mortuary, verify pink Interpol F documentation;
- 12.14.15 In the ante-mortem information section, verify yellow Interpol F documentation;
- 12.14.16 Manage any transfer of data to computerised records management program;
- 12.14.17 In reconciliation, participate in final review of identification documentation;
- 12.14.18 Ensure 100% peer review of all positive identifications;
- 12.14.19 Ensure 10% of non-identifications are peer reviewed;
- 12.14.20 Compile daily Odontology situation reports for Odontology Co-ordinator.

13. RECOMMENDED STANDARD OPERATING PROCEDURES

13.1 Phase 1 Activities, The Scene

At the request of the DVI Commander, the Odontology Co-ordinator may second a forensic odontologist (or odontologists) to advise on the recovery of remains which may

have odontological significance, or which may require specific methods of preservation to ensure maximum benefit is gained from the body recovery process.

13.2 Phase 2 Activities, The Mortuary

Odontology processes in the mortuary are time consuming and may prove to be a bottleneck. For timely progress of examinations in an incident involving 50 bodies or more the recommended team is a team leader, mortuary technician, 3 examination teams, 1 radiography team, a dedicated person to process radiographs, and a quality manager. Each examination and radiography team will be composed of 2 odontologists and any available assistants e.g. auxiliaries. It may not always be possible to access this number of suitably qualified odontologists, and as a consequence a slower pace must be allowed for during the dental examination phase.

A progress log (See Appendix 2A) which is a check list of examinations will be retained with each body, and initialled after each procedure is completed. The **team leader** will ensure all procedures are completed before the body is returned to the holding area.

On receipt of human remains each examination team will:

- 13.2.1 Document the chain of evidence;
- 13.2.2 Check that the unique DVI number on the body bag, body tag and documentation are identical;
- 13.2.3 Ensure that any police photographs required have been taken;
- 13.2.4 On initial opening of body bag take full face view and anterior dentition view photographs of the remains. The unique DVI number is to be clearly visible in all photographs and must not obscure any dental information;
- 13.2.5 When appropriate, and following permission from PM odontology coordinator, the mandible may be disarticulated. This may be completed by mortuary technician;
- 13.2.6 Clean the teeth and jaws as necessary;
- 13.2.7 Take full arch occlusal view photographs of the maxilla and mandible, and close-up views of any features of special interest. The unique DVI number is to be clearly visible in all photographs and must not obscure any dental information. Photographs may be digital, analogue or Polaroid. All photographs taken are to be documented on pink Interpol F2 form in section 90;
- 13.2.8 Conduct a detailed dental examination, record on the pink Interpol F2 form, using Interpol recommended charting;
- 13.2.9 The oral examination is to be checked by recorder;
- 13.2.10 Record radiographs. Ideally complete a full mouth survey with periapical, and bitewing views, (minimum 12 films) for each set of human remains. Special features require additional angled views. If the dental structures are incomplete, all teeth present are to be radiographed;
- 13.2.11 Radiographs may be recorded digitally or on analogue film;
- 13.2.12 Digital sensors must be appropriately protected from contamination;
- 13.2.13 Digitally recorded images must be appropriately filed and stored and printed according to predetermined protocol;
- 13.2.14 Remove analogue radiographs from barrier cover in mortuary and place in separate small bag with DVI number attached, carefully avoiding contamination;
- 13.2.15 Place radiographs in the A4 zip lock bag containing all mortuary information for that body, then hand to appropriate person for developing and processing;
- 13.2.16 All radiographs taken are to be documented on pink Interpol F2 form in section 89;
- 13.2.17 Take dental impression if required;
- 13.2.18 Ensure that there is a legible notation in each section of the pink Interpol F1 and F2 forms. This will help to prevent misunderstandings and misinterpretations during the data entry process;
- 13.2.19 Check that the pink Interpol F1 and F2 forms are completed and then sign the F1 and progress log.
- 13.2.20 Complete and sign the pink Interpol F1 form and the progress log.

If teeth are to be used for DNA sampling, and only after completion of all other procedures, an examination team will:

- 13.2.21 Document the chain of evidence;
- 13.2.22 Check that the unique DVI numbers on the body bag, body tag and documentation are identical;
- 13.2.23 Extract the tooth nominated in the SOP, ensuring contamination minimisation procedures are followed (as a minimum these will include clean gloves for this procedure, clean (chemically decontaminated as a minimum) extraction forceps and any other instruments used in this process
- 13.2.24 Process the tooth according to lead DVI agency instructions;
- 13.2.25 Record the tooth extracted (by FDI number) in the progress log and on the pink Interpol F1 form in box 84;
- 13.2.26 Complete and sign the pink Interpol F1 form and the progress log.

As soon as possible after the mortuary team have completed each examination and before the body is returned to the storage area, the processing technician will:

- 13.2.27 Document the chain of evidence;
- 13.2.28 Process radiographs, ensuring no mix-up of films between cases has occurred;
- 13.2.29 Mount and label radiographs with the unique DVI number. Use one full mouth survey mounting sheet per body, except if there are more x-rays than mounting spaces – then use a second mount.

The Quality Manager /Team Leader will:

- 13.2.30 Ensure all the documentation is complete;
- 13.2.31 Check charting from mortuary against radiographs and photographs;
- 13.2.32 Highlight any alterations that were made on pink Interpol F2 and record changes in running sheet;
- 13.2.33 Ensure major discrepancies are peer reviewed, with appropriate documentation, and reported to Mortuary Team Leader;
- 13.2.34 If necessary, ensure body is re-examined or radiographs retaken;
- 13.2.35 Ensure all sections of Interpol form requiring dental information are completed;
- 13.2.36 If a computerised comparison program is being employed, supervise input of data, including digitisation of radiographs.

13.3 Phase 3 Activities, Ante-mortem Record Collation

It is essential for odontologists to be part of the missing persons team(s) involved in the collection and collation of antemortem information. It is important that all ante-mortem team members are aware of what may constitute dental records (eg written records, radiographs, photographs, models, mouthguards and other prostheses) and all the institutions, specialist practices and facilities where dental records may be located. It is appropriate for odontologists to speak directly with treating dentists regarding the content of dental records. Odontologists are not trained to interact directly with the families of victims.

A progress log (See Appendix 2B) will be retained with each record, and initialled after each procedure is completed.

Each ante-mortem odontology team will:

- 13.3.1 Be composed of a minimum of 2 odontologists at any given time;
- 13.3.2 Complete and sign the yellow Interpol F1 form according to Interpol guidelines;
- 13.3.3 Report any uncollected information known to exist (e.g. original radiographs) to ante-mortem odontology team leader (or nominated person) so collection can be arranged. Record the suspected missing information, the date and time of the request for information, and to whom the request was made, in box 79 of yellow Interpol F1 form and in the ante-mortem file running sheet;
- 13.3.4 Identify records obviously inadequate for positive identification by dental means (e.g. incomplete or containing minimal information) to ante-mortem odontology team leader (or nominated person), to facilitate further investigation regarding additional identification information. This report is to be documented in box 79 of the yellow Interpol F1 form and in ante-mortem file running sheet;

- 13.3.5 Document all access to ante-mortem files according to lead DVI agency guidelines;
- 13.3.6 Only access sealed material after authorisation and document such access;
- 13.3.7 Ensure transfer of ante-mortem information to Reconciliation Centre strictly follows Lead Agency guidelines.

13.4 Phase 4 Activities, Reconciliation

The odontology team in the Reconciliation Centre is to be composed of a team leader and a minimum of 2 odontologists at any given time.

Only original Interpol forms, radiographs and any other dental reference material will be used in odontology reconciliation.

Irrespective of use of a computerised data base program, all identifications must be manually verified by named odontologists appointed to the reconciliation area. All cases regarded as potentially identified and considered suitable for presentation to the Identification Board must be peer reviewed.

Once initial comparison (either manual or computerised) has identified a potential identification, one odontologist (the presenter) becomes responsible for that case. In the event of a change of deployment team prior to presentation to the Identification Board, the newly arrived odontologist taking responsibility for the case, and thus presentation to the Board, should be fully briefed by the original presenter prior to their departure.

The Odontology Co-ordinator may be a member of the Identification Board. If so, to ensure their independence and objectivity, the final review of dental identifications prior to transfer to the Reconciliation Coordinator, should be completed by the reconciliation odontology team leader. If the Odontology Co-ordinator is not a member of the Identification Board they should review all dental identifications before they are submitted to the Identification Board. The last reviewer (Reconciliation Team Leader/Quality Manager or Odontology Co-ordinator) has the final say as to the identification prior to presentation to the Identification Board.

The presenting Odontologist will:

- 13.4.1 Ensure identification is established according to recommended standards for acceptance of identification (Appendix 3);
- 13.4.2 Document reasons for identification;
- 13.4.3 Ensure identification is peer reviewed, and peer review is documented;
- 13.4.4 Complete standard form for reporting identification (Appendix 4);
- 13.4.5 Ensure all paperwork is correctly completed, radiographs and any photographs are correctly indexed and labelled;
- 13.4.6 Present the case, with appropriate documentation, to team leader/Quality Manager/Odontology Co-ordinator prior to transfer to Reconciliation Coordinator for presentation to Identification Board;
- 13.4.7 Present case to the Identification Board.

14. EQUIPMENT

- 14.1 Provision of equipment essential to a DVI service in forensic odontology is the responsibility of the Lead DVI agency.
- 14.2 While it is not possible to prescribe a fully comprehensive equipment list, Appendix 5 lists suggested requirements for a DVI incident of 50 fatalities.
- 14.3 A working group of the AuSFO will maintain and update this list and establish an inventory and the location of large equipment items (e.g. portable x-ray machines) that are available for access in the event of a large mass fatality incident.

15. TRAINING

- 15.1 AuSFO members are committed to providing the most relevant and up to date service possible. To achieve this it is recognised that continued training and upgrading of skills is important.
- 15.2 The AuSFO encourages members to participate in regular professional development with a particular emphasis on forensic odontology, including Disaster Victim Identification.
- 15.3 The AuSFO recognises that continuing professional development (CPD) can occur via formal postgraduate training programs, structured group activities and meetings (e.g. study groups and conferences), and personal informal study. CPD can occur at local, national or international levels.
- 15.4 The AuSFO recommends that members engage in a minimum of 10 hours per year continuing professional development, and encourages members to keep a record of this activity.

16. COMPLAINTS

- 16.1 All internal complaints will initially be directed through the Odontology Co-ordinator. The Odontology Co-ordinator will appoint a review committee to investigate the complaint.
- 16.2 All external complaints will initially be directed through the DVI Commander, who will determine appropriate management.

17. REVIEW

- 17.1 AuSFO members acknowledge the importance and value of review processes to the continual improvement of the service they offer.
- 17.2 There will be an audit and review of the odontological aspects at the completion of the incident. This may occur in conjunction with any review process initiated by the Lead Agency, or separately.
- 17.3 The performance review will be conducted by nominated members of the DVI team and suitable persons who were not members of the DVI team, convened by the AuSFO President.
- 17.4 Outcomes of the audit and performance review will be made available to members of the AuSFO and incorporated into the Disaster Victim Identification Forensic Odontology Guide as appropriate.

18. REMUNERATION

Many Australian forensic odontologists are private dental practitioners, University academics, government employees of a combination of these, who undertake forensic services for little or no remuneration. The time commitment to a major DVI incident will cause considerable loss of income for private practitioners, both in salary and overhead costs of their practice. Members employed by Universities may be asked to take leave without pay by their employer and the University will have to fund replacement staff to cover their responsibilities during this period.

It is appropriate that AuSFO members be remunerated by the lead DVI agency when deployed to work at a DVI incident. The AuSFO President will establish an appropriate deployment

contract including remuneration level, which will be reviewed annually. This contract will be signed prior to deployment. This level needs to be discussed with stakeholders regularly and prior to any deployment.

This remuneration is over and above travel, accommodation and meal costs. It is the responsibility of the lead DVI agency to ensure that appropriate and adequate indemnity, liability, personal accident and sickness insurance is in place for all odontologists. The lead DVI agency is also responsible for provision of post deployment care, debriefing and counselling.

Any additional out of pocket expenses must be logged and justified when claimed.

19. APPENDICES

Appendix 1

AuSFO Roster for provision of Initial Response Odontologists.

| MONTH | DUTY STATES | Contact person |
|----------------|--------------------|---------------------------------|
| Nov 2011 | Vic/Tas | Tony Hill |
| Dec 2011 | | Paul Taylor |
| Jan 2012 | SA/NT | Giac Cirillo |
| Feb 2012 | | Mark Leedham |
| March 2012 | WA/ACT | Stephen Knott |
| April 2012 | | Sher-Lin Chiam |
| May 2012 | NSW/Qld | Chris Griffiths |
| June 2012 | | Alex Forrest Alain Middleton |
| July 2012 | Vic/Tas | Tony Hill |
| August 2012 | | Paul Taylor |
| September 2012 | SA/NT | Giac Cirillo |
| October 2012 | | Mark Leedham |
| November 2012 | WA/ACT | Stephen Knott |
| December 2012 | | Sher-Lin Chiam |
| Jan 2013 | NSW/Qld | Chris Griffiths |
| Feb 2013 | | Alex Forrest Alain Middleton |
| March 2013 | Vic/Tas | Tony Hill |
| April 2013 | | Paul Taylor |
| May 2013 | SA/NT | Giac Cirillo |
| June 2013 | | Mark Leedham |
| July 2013 | WA/ACT | Stephen Knott |
| August 2013 | | Sher-Lin Chiam |
| September 2013 | NSW/Qld | Chris Griffiths |
| October 2013 | | Alex Forrest Alain Middleton |

Appendix 2

Suggested Progress Logs for Odontology Procedures

ODONTOLOGY MORTUARY PROGRESS LOG

BODY NUMBER

PHOTOGRAPHED BY POLICE

Name of Photographer.....

ODONTOLOGY PHOTOGRAPHS

Name of Photographer.....

DENTAL EXAMINATION

Odontologist 1.....

Odontologist 2.....

RADIOGRAPHS

Radiographer.....

DNA SAMPLE

Tooth number.....

OTHER (e.g. IMPRESSIONS)

Describe.....

VERIFIED COMPLETE BY TEAM LEADER

Signed..... Date.....

ODONTOLOGY AM PROGRESS LOG

NAME OF MISSING PERSON

DENTAL RECORDS OBTAINED

Originals

Number of pages ____

Copies.....

Number of radiographs ____

RECORDS COLLECTED BY

Name.....

DENTIST DETAILS

Name

Address.....

.....

.....

DENTAL TRANSCRIPTION COMPLETE

Odontologist 1...(Name).....

Odontologist 2...(Name).....

ODONTOLOGIST COMMUNICATION WITH DENTIST

Yes

No

VERIFIED COMPLETE BY TEAM LEADER

Signed..... Date.....

Appendix 3

Recommended Standards for Acceptance of Identification

The principle underlying dental comparison is one of elimination. The comparison process must be methodical, and include each tooth as well as all associated dental structures.

No minimum number of concordant points is required. All apparent discrepancies in evidence (e.g. errors in recording, dental treatment subsequent to the available ante-mortem information) must be resolved. No assumptions must be made about missing information or unresolved discrepancies. In all circumstances it is better to err on the side of caution and be conservative in decisions.

The following categories and criteria are to be used in the final identification report:

- **I Identification established:** There is absolute certainty the post-mortem and ante-mortem data are from the same person.
- **Identification probable:** Specific characteristics correspond between post-mortem and ante-mortem data but post-mortem or ante-mortem data--or both--are limited.
- **Identification possible:** there is nothing that excludes the identity but post-mortem or ante-mortem data--or both--are minimal.
- **Identity excluded:** post-mortem and ante-mortem records are from different persons.
- **No comparison can be made:** insufficient data exists to allow comparison.

Appendix 4

Suggested Templates for Standard Forms for Reporting Identification

Information can be added to this template to meet jurisdictional requirements, but cannot be removed.

FORENSIC ODONTOLOGY REPORT

On.....
at
an odontology examination was conducted on the human remains,
Body Number.....

This examination involved photography, radiography and charting of the teeth and associated oral structures.

The information recorded in this examination was compared against information collected from dental and other records in the name of;
.....
of.....
with a date of birth of.....

These records were provided by.....
of.....

This comparison enables the identification of the deceased to be defined as.....on dental grounds.

This opinion is based on the information contained in the attached comparison chart.

Reporting Odontologist: (print name and sign)
.....

Reviewing Odontologist: (print name and sign)
.....

Dental reconciliation team Leader: (print name and sign)
.....

Date:.....



DISASTER:

DATE:

Victim Name:

Body Number:

| TOOTH | ANTEMORTEM | POSTMORTEM | TOOTH |
|-------|------------|------------|-------|
| 18 | | | 18 |
| 17 | | | 17 |
| 16 | | | 16 |
| 15 | | | 15 |
| 14 | | | 14 |
| 13 | | | 13 |
| 12 | | | 12 |
| 11 | | | 11 |
| | | | |
| 21 | | | 21 |
| 22 | | | 22 |
| 23 | | | 23 |
| 24 | | | 24 |
| 25 | | | 25 |
| 26 | | | 26 |
| 27 | | | 27 |
| 28 | | | 28 |
| | | | |
| 38 | | | 38 |
| 37 | | | 37 |
| 36 | | | 36 |
| 35 | | | 35 |
| 34 | | | 34 |
| 33 | | | 33 |
| 32 | | | 32 |
| 31 | | | 31 |
| | | | |
| 41 | | | 41 |
| 42 | | | 42 |
| 43 | | | 43 |
| 44 | | | 44 |
| 45 | | | 45 |
| 46 | | | 46 |
| 47 | | | 47 |
| 48 | | | 48 |

COMMENTS (e.g. Radiographic comparisons of note);

SIGNATURE ODONTOLOGIST 1

SIGNATURE ODONTOLOGIST 2

Date:

Date:

Appendix 5

Odontology Equipment

Odontology specific items

| Item | Quantity | Specifications, if appropriate |
|--|---------------------------------------|---|
| Portable Dental X-ray Unit | 1 mobile minimum 1 Nomad hand held | Must be able to cope with changes in voltage without affecting output |
| X-ray developing equipment or Digital Dental Xray System | 2 | 1 x Durr Periomat Pluss 1 x Procomat or Kodak manual processing box, with hangers Krystal-X WiFi Digital X-ray with sensors, software, Panasonic Toughbook, photo/xray printer, multi voltage rechargers and Pelican transport case. Need 2 x size 2 sensors and 1 x size 1. |
| Developer | 5 litre minimum | To be specified |
| Fixer | 5 litre minimum | To be specified |
| Measuring container | | To be specified |
| Photographic equipment | | Nikon CoolpixS10 Compact digital camera with intraoral capability and dedicated computer and colour printing facilities Nikon EN-EL5 Lithium Ion rechargeable Battery (Extra) Ultima 240vAC/12vDC Charger for Nikon Batteries Sandisk 2GB Ultra II Secure Digital Card Case for S10 Kingston 15 in 1 Speed Card reader Portaflash Mini Slave Flash |
| X-ray film | 6 packets (100/pack) | KODAK DF58C#2 (barrier) |
| X-ray film | Size 2 self developing | Salvin Dental Specialities, Charlotte NC, USA |
| X-ray film | Occlusal | Kodak Ultra Speed Size 4 |
| Disposable scalpels | 1 box | Mortuary grade |
| Disposable Dental Mirrors | 1 box | To be specified |
| Dental mirrors - metal | 10 | To be specified |
| Dental explorer | 6 | To be specified |
| Dental tweezers | 6 | To be specified |
| Large tissue tweezers | 6 | To be specified |
| Disposable dental kit | 6 | Mirror, probe and tweezers |
| Toothbrushes | 1 box | Colgate |
| Extraction Forceps - upper | 3 | AEDG130 |
| Extraction Forceps - lower | 3 | AEDG522 |
| Jaw Openers/Clamps | 3 | Aesculap OM30 |
| Photographic Mouth mirrors | 3 sets | |
| Cheek retractors | 3 pairs | |
| Gauze | 5 packs | To be specified |
| X-ray film holders | 1 box (100) | Trollplast, full mouth survey TR-TR18 |
| X-ray viewers | 2 x desk top 2 x large bench top | Cabin CL-5000L Cabin CL-5000N |
| Pens | 40 | 4 colour BIC |
| Zip lock plastic A4 sleeves | 100 | Marbig Product code 9008099 |
| Dental Impression putty | 2 boxes | Exaflex |
| ABFO No 2 Bite Mark Scales | 5 | American Board of Forensic Odontology |

Other (non-dental)

| Item | Quantity |
|-------------------------------|----------|
| Interpol forms | 75 |
| Interpol Guide Book | |
| Australasian Standards Manual | |

| | |
|--------------------------------------|-----------------------------|
| Interpol elimination charts | |
| Disposable Plastic Aprons | 50 |
| Medical Scrubs | |
| Rubber Boots | 1 pair per operator |
| Face Masks – with and without visors | |
| Safety Glasses | 1 pair per operator |
| Rubber and vinyl disposable gloves | |
| Head lamps | 1 per operator – not LED |
| Portable lighting | |
| Alcohol (isopropyl) | |
| Assorted stationery | |
| Plastic document folders | Marbig Product code 9008099 |

AM Record Collection, Data Entry and Reconciliation

| Item | Quantity | Specifications, if appropriate |
|---------------------------|--------------------------------|---|
| Accommodation | | |
| Area | Minimum area 60 m ² | Secure, with good lighting |
| Workplace tables | 13 | Minimum 900 mm ² |
| Communication | | |
| Telephones | 2 | Landline |
| | 1 | mobile |
| Facsimile | 1 | |
| Broadband internet access | | 200 GB storage and unlimited access |
| Secure postage | | |
| Storage | | |
| Cupboard | 1 | |
| Filing Cabinet | 1 | |
| Stationary Cupboard | 1 | |
| Computing | | |
| Computers | 4 | Networked together, to printers sn to central DVI computer database server. DVD R/W 2 x USB ports |
| Software | | Installed on each computer: <ul style="list-style-type: none"> Operating system Network MS Office Adobe acrobat reader Adobe Photoshop V7 or later DVI database computer workstation program(s) Additionally installed on AM Team Leader computer hard drive: <ul style="list-style-type: none"> AM Records register database Broadband software Individual team member allocated folder, 1 folder per team member, accessible from all AM team computers. For personal storage of information and location of each members <i>Personal Records Register</i> |
| USB Memory stick | 10 | 1 GB minimum |
| X ray scanner | 1 | |
| Printers | 2 | 1 must be colour |
| Office equipment | | |
| Shredder | | |
| Photocopier | | |

| | | |
|--|--|-------------------------------------|
| X-ray viewers | 2 | Large |
| Stationery | | |
| File trays | 21 | |
| Paper | Yellow – 1 ream Pink – 1 ream White - 4 reams Glossy photo –2 pckts | |
| Ink for printer | | |
| Toner | For photocopier For laser printer | |
| Pens | 20 | BIC 4 colour |
| Texta | 6 - narrow permanent black 4 – water soluble narrow black | |
| Envelopes | DL – 500 A4 - 500 | |
| Stapler + staples | 3 | |
| A4 Zip seal Plastic folders | 50 | |
| A4 plastic sleeves | 200 | |
| Archive boxes (for models etc) | 20 | 20mm x 20mm 20mm |
| Adhesive tape + dispensers | 5 | |
| Stanley knife | 2 | |
| Scissors | 5 | |
| Magnifying glass | 2 | |
| Rubbish bins | 4 desk 1 large with liners | |
| Rubber stamp | 1 per team member | With team member ID and details |
| Reference Material | | |
| ADA Glossary of terms | 1 | |
| ADA Dental Index | 1 | |
| State Dental Service contacts | 1 | Appropriate to location of incident |
| AUSFO contact names and numbers | 1 | |
| State Odontology Coordinator contacts | 1 | |
| State DVI Commander contacts | 1 | |
| Hospital (Public and private) contact names numbers | 1 | Appropriate to location of incident |
| Health Commission contact names and numbers | 1 | Appropriate to location of incident |
| Dental Fund contact names and numbers | 1 | Appropriate to location of incident |
| Australian White and Yellow pages | 1 | Telstra CD |
| Dental Register of all states and territories | 1 | |
| Specialist Societies contact names and numbers | | |
| Dental Laboratories contact names and numbers | | |
| DHAA Membership list and contact details | | |
| Documentation | | |
| DVI Correspondence paper with official letterhead | | |
| Standard “request for records” correspondence template | | |
| Standard “receipt of data” correspondence template | | |

| | | |
|--|--|--|
| Standard "request for external information" template | | |
| | | |