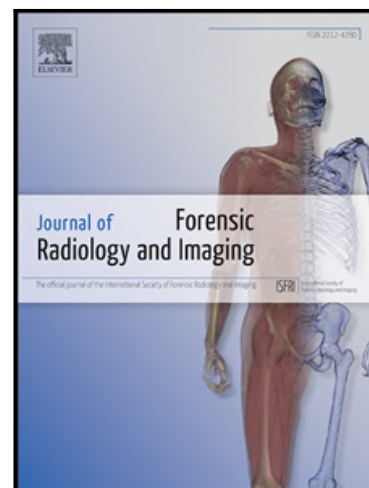


Positional Statement Radiology Disaster Victim Identification
Reporting Forms

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Positional Statement

Radiology Disaster Victim Identification Reporting Forms

Positional statement of the members of the Disaster Victim Identification working group of the *International Society of Forensic Radiology and Imaging*;

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Since the first application of radiology to Disaster Victim Identification (DVI) during the investigation of the SS Noronic ship disaster in 1949 (1) radiology has played an increasingly important role in DVI, particularly with the increasing utilisation of post mortem computed tomography (PMCT). There are now instances in DVI investigations where PMCT has been used as the substantial or even sole form of pathological body examination, i.e. replacing invasive (autopsy) examination.

It is critical that the relevant radiological findings are conveyed accurately to those investigating the deaths irrespective of the radiological modality used. The communication of the findings will usually take the form of two separate reports. The first should be the completion of the newly introduced INTERPOL DVI Radiology Examination Record Form, either in paper or electronic format, to record the findings of the initial radiology examination. This report will inform the *DVI investigation*. In order to inform the *pathological examination*, a second detailed radiological report of the remains can be produced, either at the same time or later, (this will be incident and practitioner dependent) using an appropriate whole-body or partial remains reporting form or similar.

Process pathway

It is recommended that prior to the reporting of any DVI radiology a process pathway should be established which the reporting team must abide by. Working to such a pathway should ensure that all critical stages of the process are completed by all reporting team members. It also provides a documented continuity of evidence pathway which can be used in court proceedings if required. To

ensure consistency the reporting team should use the same image reporting platform for reporting of imaging findings.

The INTERPOL DVI Radiology Examination Record Form

The INTERPOL **Radiology Examination Record** form is a multi-modality Post Mortem (Pink) Appendix 800's form, number 850, designed to record the initial radiological examination findings to guide the DVI teams as to the possible presence of DVI or forensically significant findings.

Figure 1 illustrates the form (2). The form should be completed by, or under the supervision of, a suitably qualified medical or paramedical practitioner who is responsible for the initial assessment of the radiological images.

Post Mortem (pink) INTERPOL DVI Form - Unidentified Human Remains Appendix: 800's

Place of disaster: _____ PM No: _____

Nature of disaster: _____

Date of disaster: Day Month Year Male ☐ Female ☐ Other ☐ Unknown ☐

a = Data not available b = Attachment c = Further info on page Sup. Info. (700's)

850 APPENDIX RADIOLOGICAL EXAMINATION RECORD (for optional use)		a	b	c
852 Modality	X-ray <input type="checkbox"/> CT <input type="checkbox"/> Fluoroscopy <input type="checkbox"/> Other (specify) <input type="checkbox"/>			
854 Technical issues	No <input type="checkbox"/> Yes (specify) <input type="checkbox"/>			
856 Type of remains	Human <input type="checkbox"/> Non-human <input type="checkbox"/> Corrupted <input type="checkbox"/> Unknown <input type="checkbox"/>			
858 State of remains	Intact <input type="checkbox"/> Incomplete <input type="checkbox"/> Individual body parts (specify) <input type="checkbox"/>			
860 Disease processes	No <input type="checkbox"/> Yes (specify below) <input type="checkbox"/>			
862 Dental work	No <input type="checkbox"/> Yes (specify below) <input type="checkbox"/>			
864 Implants	No <input type="checkbox"/> Yes (specify below) <input type="checkbox"/>			
866 Forensically significant findings	No <input type="checkbox"/> Yes (specify below) <input type="checkbox"/>			
868 Hazards	No <input type="checkbox"/> Yes (specify below) <input type="checkbox"/>			
870 Supplementary details				
872 Accompanying images	No <input type="checkbox"/> Yes (specify) <input type="checkbox"/>			

Registered by: Duty Title : _____
Name : _____
Address : _____
Phone / Email : _____

Signature / Date : _____

[850 Version 2018]

Fig 1. The 2018 INTERPOL Radiology Examination Record

The following is a guide to the completion of each subsection of the Radiology Examination Record. This is an expanded version of the INTERPOL users guide. Prior to use it is recommended that an agreed disaster specific agreement is established amongst the radiology reporting team on how the form will be completed and that this agreement be discussed with, and agreed to by those leading the DVI investigation. This will form part of the agreed process pathway.

The first part of the form should be completed as per other Pink forms, recording the place, date and nature of the disaster, and the Post Mortem (PM) number. The sex of the remains should, where possible, be determined and recorded in the top box, from the radiological images. Sex can be determined, for example, from the identification of external genitalia on 2D multi-planar or 3D surface reconstruction views with confirmation of the presence of the correct internal sex organs. In the case where the external genitalia are absent, sex can be determined from the presence of internal sexual reproductive organs (3) or virtual anthropology assessment of the pelvis and skull (4). If sex cannot be determined with certainty, then the term “*unknown*” should be assigned. In the 2018 version of the INTERPOL ante-mortem (Yellow) and post mortem (Pink) forms the additional term “*other*” has been added for transgender patients.

1. Section 852. The radiological modality used to undertake the examination should be recorded. If a modality not listed is used then tick “*Other*” and detail the modality in the space provided.
2. Section 854. If a technical issue is known to have arisen during the examination or can be determined from the image analysis, for example the whole of the remains could not be imaged due to the size, positioning or state of the remains, for example due to the pugilistic attitude of burnt remains, then record this here, detailing the technical issue that arose in the space provided.
3. Section 856. The nature of the remains, using the predefined categories, should be recorded here.
4. Section 858. The state of the remains is recorded here. “*Complete*” remains is taken to mean the presence of head, thorax, abdomen, pelvis and all limbs and digits. If any part is missing that could generate an identifiable fragment or body part which could be realistically retrieved, identified and re-associated then the box “*Incomplete*” should be ticked.

The presence of identifiable *Individual body parts* should be listed. It will assist the DVI team to know about the existence or absence of hands for fingerprints and jaws for dental examination, especially if these individual body parts are not found in their expected anatomical positions. If there is insufficient space then use section 870 to list or summarise the radiological remains, for example in a severely burnt, disrupted body.

Having said this, in the case of multiple body fragments it may not be practical to list every remain present. Under such circumstances, which should be part of the agreed process pathway, it is preferable to simply record that there are “*multiple fragments*”, or possibly commingled skeletal fragments, rather than attempting to itemise every individual bone as this will be undertaken by others, for example a forensic anthropologist.

5. Section 860. The presence or absence of a natural disease involving soft tissues, muscles, organs and bones as identified using the radiological modality should be recorded. This may assist identification through knowledge of the existence of such disease as may be recorded in medical records or on ante-mortem radiology request forms. Access to ante-mortem radiology examinations should be sort for direct comparison to the post mortem imaging. The nature of the disease, for example coronary artery disease, gallstones or an old healed bone fracture should be recorded in section 870.
6. Section 862. The presence or absence of restorative dental work should be indicated here. Reconstruction of a virtual Dental Panoramic Radiograph (Tomograph) may assist with dental eruption aging, the location and analysis of dental restoration and consideration of historical tooth loss, presence of un-erupted teeth, root morphology and pathology analysis and smile configuration (5).
7. Section 864. The presence or absence of medical implants, for example pacemakers, hip or knee replacements, should be recorded. The type and location of such implants should be recorded in section 870.
8. Section 866. The presence or absence of objects or material on the outside or inside of the body that could be of forensic interest, for example a projectile, or that might aid identification, for example jewellery, clothing or personal possessions, should be recorded here. The nature and location should be recorded in section 870.
9. Section 868. The presence or absence of anything that could pose a hazard to those examining the remains, for example nails, needles or unexploded ordinance, should be recorded here. The nature and location should be recorded in section 870.
10. Section 870. For sections 860, 862, 864, 866 and 868 this area should be used to detail what has been identified and where. This can be done as free hand text, an annotated image or both to show the item of interest related to a specific part of the remains or an area of the bag / container in which the remains are presented.
11. Section 872. It is encouraged that an image (or images) is captured, either in 2D or 3D of all positive findings identified on radiological examination as well as a virtual Dental Panoramic Reconstruction (where possible) and appropriate external and internal images to aid the consideration of the sex, age, and stature of the individual as well as the location and nature of any identification or forensic related observation recorded on the form. The fact that images have been captured should be recorded here

The image dataset should be standardised and agreed as part of the process pathway prior to commencing image reporting. Each image should bear the DVI unique number and then be coded with a unique image reference number. An index list of images per case should be produced and kept with the case record.

The images should form part of the DVI record. They should be made available to the relevant teams in the mortuary to aid identification and the location of forensically significant findings. This can be achieved by presenting electronic or printed copies of the images to the DVI team.

The images should be entered in the software, DVI System International – also known as the Plass Data System (Plass Data Software A/S, Holbaek, Denmark).

Finally, the details of the individual completing the form should be recorded, signed and dated at the bottom of the form.

Whole Body and Partial Remains Forms

In addition to the Interpol Radiology Examination Record, it is recommended that a separate formal pathology report be generated based on review of the radiology images to detail both the identification and pathological (natural disease and trauma) findings. As victims of multiple fatality incidents may be disrupted or incinerated, use of the report will assist in the examination of whole or partial remains.

In the case of intact or near-intact bodily remains the structure of the separate report is not mandated but would be expected to include external identification as well as internal system-based natural disease and trauma related findings. Templates used in medico-legal reporting practice work are considered acceptable for this task.

In the case of fragmentary remains, for example bones, soft tissues or organs, a separate form may be required to document specific information related to these types of remains.

Examples of such forms are found in the supplementary on-line resources accompanying this positional statement as well as at the internet open source resource http://www.Swisswuff.ch/wordpress/?page_id=794 (last visited August 2018).

Summary

Prior to embarking on the radiology reporting related to a DVI investigation there should be a formal process pathway developed and agreed by the reporting team and investigators. The use of the INTERPOL DVI Radiology Record Form is encouraged for recording the initial findings of the radiology examination undertaken as part of a DVI investigation. A second formal report using either a whole body or fragmentary remains form is encouraged to inform the pathology investigation related to the remains.

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