

Developing standards in international forensic work to identify missing persons

STEPHEN CORDNER AND HELEN MCKELVIE*

“Forensic expertise in human rights investigations serves four purposes. On a humanitarian level, the aim is to help families uncover the fate of their loved ones. The investigation also serves as documentation to set the historical record straight. The purpose is furthermore to uncover legally admissible evidence that will result in the conviction of those responsible for the crime. Ultimately it is hoped that such investigations will deter future violations by demonstrating through forensic documentation and litigation that those responsible will be held accountable for their actions.”¹

The structures to protect the neutrality and impartiality that forensic scientists take for granted in their domestic contexts do not exist in the context of identifying missing persons. Furthermore, biomedical ethics, despite the explosion in its literature in recent decades, has generally had little to say about rights and obligations with regard to human remains. Finally, technical standards which could be applied to the context of missing persons either do not exist, or need to be adapted. This article traces the background of the role of forensic science in identifying missing persons and outlines some recommendations for developing standards and best practice guidelines with a view to fulfilling the objectives both of families of the missing and the evidentiary needs of tribunals.

Evolution of international forensic work

It is 55 years since the first systematic medical investigation of human rights abuses was used as evidence in an internationally recognized tribunal — the testimony of British Army pathologists (amongst others) in the trial held in Nuremberg for war crimes involving “medical experimentation” by

* Stephen Cordner is Professor of Forensic Medicine, Monash University, Melbourne, Australia and Director of the Victorian Institute of Forensic Medicine, Melbourne, Australia. Helen McKelvie is Manager, Medico-Legal Policy and Programs, Victorian Institute of Forensic Medicine.

twenty Nazi doctors (and three others). After this contribution to international efforts to prosecute war crimes, there was a hiatus in the involvement of medical science in documenting human rights abuses for evidentiary purposes until the mid-1980s. At that time there were a number of developments. Notably the National Commission on Disappeared Persons was established by President Alfonsín in Argentina, after thousands of citizens had been arrested, detained, tortured and killed by agents of the reigning military junta between 1976 and 1983. During 1984 and 1985, under the auspices of the American Association for the Advancement of Science (AAAS), a team of forensic practitioners was able to provide crucial evidence to the Commission based on their investigation of the causes of death and injuries sustained by victims, to contribute to the case against members of the deposed junta.²

The actions of the forensic team in Argentina were not an isolated undertaking, as similar efforts were occurring at other locations in South America and elsewhere. In the early 1980s US human rights groups received requests for assistance from medical action groups in Chile, the Philippines and El Salvador “to help document abuses, expose official complicity and break down the walls of impunity”.³ Missions of inquiry were set up under the auspices of a number of organizations, including the (US) National Academy of Sciences, the International League for Human Rights and the American Public Health Association, as well as the AAAS. Back in the US, dissemination of their findings via congressional committee hearings and at professional conferences created a groundswell of awareness amongst health professionals. “Interest in the public health consequences of human rights abuses and the application of public health and medical skills to curtailing these abuses was beginning.”⁴

It was in this context that Physicians for Human Rights (PHR) was formed in 1986.⁵ PHR’s ongoing campaign is underpinned by a dual philosophy. First, many human rights violations have significant health consequen-

1 R. Kirschner and K. Hannibal, “The application of forensic sciences to human rights investigations”, *Medicine Science and Law*, Vol. 13, 1994, p. 453.

2 Kirschner and Hannibal, *op. cit.* (note 1), p. 451.

3 K. Hannibal and R. Lawrence, “The health professional as human rights promoter: Ten years of physicians for human rights (USA)”, *Health and Human Rights*, Vol. 2, No. 1, p. 112.

4 *Ibid.*, p. 113.

5 Over the last 16 years PHR, based in Boston, has sent more than 75 medical and forensic teams to dozens of countries to carry out forensic investigations, including exhumations and autopsies of deceased victims of alleged torture and extrajudicial executions in Brazil, Israel, Czechoslovakia, Guatemala, Honduras, El Salvador, Iraqi Kurdistan, Kuwait, Mexico, Panama, Rwanda, Thailand, the former Yugoslavia and very recently, Afghanistan. <<http://phrusa.org/research/forensic/croatia/forvuk3.html>>.

ces for entire communities, and not just for direct victims. Secondly, health professionals are uniquely situated to collect the medical documentation that provides concrete evidence of human rights violations. This documentation is more credible and less vulnerable to challenge than traditional methods of case-reporting and is far more difficult to refute than oral or written testimonies of abuse, no matter how well corroborated by witnesses.⁶

Other instances in which forensic scientists have been called upon to investigate human rights violations, outside the context in which PHR has been working, relate back to the Second World War. In the late 1980s and early 1990s various countries, believing themselves to be harbouring alleged Nazi war criminals, enacted laws to deal with the possible violations of human rights. In the case of Australia, investigations associated with these laws resulted in the exhumation of three mass graves in the Ukraine, involving respectively 800 (approximately), 123 and 102 victims. Forensic scientists from Sydney travelled to the Ukraine to perform the exhumations and examine the remains. The experience gained in this context proved very useful for those who subsequently took responsibility for investigations carried out for the purposes of the International Criminal Tribunal for the former Yugoslavia (ICTY).⁷

The primary emphasis for the international forensic work described here has been on making evidence available to enable prosecution of those accused of perpetrating human rights violations. This emphasis is highlighted by some text from the PHR website:

“PHR believes that the dead have powerful stories to tell and that accountability provides the most secure foundation for future respect for human rights and humanitarian law, assigning individual accountability for what is often seen as collective guilt. By giving voice to the voiceless, PHR hopes to ensure that the innocent victims do not die in vain. That their stories are heard and their killers brought to justice.”⁸

Over the last decade, while the need for evidence for prosecutorial purposes has not diminished, the needs of the victims’ families have gained increased recognition. This is described most eloquently in the report of the Commission for Historical Clarification in Guatemala. Following many

6 <<http://www.phrusa.org/research/forensics/index/html>>.

7 G. Blewitt, “The role of forensic investigations in genocide prosecutions before an international tribunal”, *Medical Science Law*, Vol. 37, No. 4, 1997, pp. 286-7.

8 <<http://www.phrusa.org/research/forensics/index/html>>.

years of human rights violations and acts of violence connected with armed confrontations in that country, one of its primary recommendations is for a national reparation programme, including an active policy of exhumation:

“The Commission believes that exhumation of the remains of the victims(...) is in itself an act of justice and reparation and an important step on the path to reconciliation(...) because it constitutes part of the right to know the truth and it contributes to the knowledge of the whereabouts of the disappeared(...) it dignifies the victims because the right to bury the dead and to carry out ceremonies for them according to each culture is inherent in all human beings.”⁹

In the context of international forensic work, the rights of families to have remains properly identified should be appropriately recognized.

The branches of medicine and science involved

Table 1 lists those who may be involved in the forensic investigation of international human rights violations.

Forensic scientists: a collective term

Table 1

Medicine/Health Care	Science	Other Professionals
Forensic pathology	Anthropology/osteology	Crime scene examiners
Clinical forensic medicine	Molecular biology (DNA)	Evidence handlers
Forensic odontology	Radiography	Photographers
Medical epidemiology	Archaeology	Interviewers
	Ballistics	Liaison
	Firearms and toolmark examiners	Police
	Entomology	Ordinance experts
		Mortuary technicians
		Logistics & administration
		Fingerprints experts

Table 1 emphasizes the reality that there is no such individual as a “forensic scientist”. For the purposes of this paper, the term denotes a class or group of areas spanning medicine, science and technical fields. The composition of any

9 <<http://hrdata.aaas.org/ceh/report/english/recs3.html>>.

investigatory team will be determined by many factors — logistics availability, the task to be performed (size, location, etc). Depending on the context, the team might be a unit spread across a number of different authorities.

International guidelines and protocols

Part of the collaborative efforts of human rights activists and medical personnel since the 1980s has been to establish requirements for sound documentation that can be relied upon in litigation. Again, the emphasis has not explicitly been on the families' rights to know the truth about the disappearance of their loved ones and to be able to lay their remains to rest. Between 1984 and 1988 a human rights group in the US, the Minnesota Advocates for Human Rights, consulted with forensic experts from a number of countries and drew up the "Protocol for Preventing Arbitrary Killings through Adequate Death Investigation and Autopsy" (the "Minnesota Protocol"). When the United Nations (UN) became more active in the area, the Minnesota Protocol was incorporated into general principles for the prevention of deaths and adequate medico-legal investigations that were drafted and then adopted by the United Nations Economic and Social Council (Resolution 65) and the General Assembly in 1989. In 1991 the UN published the *Manual on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions*, which includes the principles and a number of protocols to provide States with technical guidance for the conduct of investigations, plus a model autopsy protocol and one for the disinterment and analysis of skeletal remains. The appendices contain charts and diagrams to assist with post-mortem detection of torture and the reporting of injuries consistent with torture.

As far as missing persons are concerned, the *Manual* deals with identification of human remains as a part of the investigation process, rather than as an end in itself. It provides for families to make heard their complaints about the inadequacy of initial investigations, and to be entitled to any information arising out of any subsequent inquiry, including being represented at an autopsy. (This presupposes that the family have some knowledge of the whereabouts of their relative's remains, which is not always the case.) The *Manual* also sets out the right of families to fair compensation if their family member has been a victim of extrajudicial execution. Overall, there is only an implied, not explicit, right to know the fate of loved ones.

As the need for UN involvement in investigating serious human rights violations increased, responsibility for this was taken on by the UN Commission

for Human Rights (UNCHR). In 1992 a resolution was passed that created a standing team of forensic experts and other professionals to support their work in investigating massacres and other human rights violations (1992/24). Each year the UNCHR requests that the UN Secretary-General consult with governments around the world to extend the list of experts able to join the Standing Team. (In reality this “Standing Team” is just a list, without the resources and logistical support required to provide it with the wherewithal to act as its name implies.) Resolution 1992/24 establishing the Standing Team does not mention the right of families to have remains identified, and does not appear to have been part of the motivation for the creation of the team.

UN resolutions that followed the creation of the Standing Team aimed to facilitate the implementation of the *Manual* and the establishment of training opportunities to ensure the availability of forensic expertise in countries where these needs were not being met. The rights of families were recognized with regard to ensuring the continuation of the family unit. In Resolution 1993/33, the UNCHR focused on the need to help reunite “children of disappeared persons forcefully separated from their parents with their surviving relatives”.¹⁰ Resolution 1994/31 also stressed that the mandate of the Standing Team of experts was to facilitate the reunification of families.¹¹ In the early 1990s reports of the UN Secretary-General made indirect reference to the effects on families of summary executions and enforced disappearances.¹² It was not until 1998 that the Secretary-General referred directly to a “right” in relation to identification of human remains — his report described the programme established in the former Yugoslavia for “the excavation of mass graves and exhumation of mortal remains for the purpose of identifying deceased missing persons, returning the remains to the families concerned and thereby responding to the right of families to know the truth about the fate of their loved ones”.¹³

Forensic investigations for the International Criminal Tribunal for the former Yugoslavia and in East Timor

In February 1993 and November 1994 the international community, through the United Nations, established two international criminal tribunals

¹⁰ E/CN.4/RES/1993/33 Preamble and para. 3.

¹¹ E/CN.4/RES/1993/31, para. 3.

¹² See E/CN.4/1993/20, 5 February 1993, para. 3 and E/CN.4/1993/20 para. 18.

¹³ E/CN.4/1998/32, 5 January 1998, I, D, 3.

to prosecute individuals responsible for certain international crimes committed in the former Yugoslavia and Rwanda. The tribunals were not established under a convention, but as a measure adopted by the Security Council acting under Chapter VII of the UN Charter. This means that all member States of the UN (including Rwanda and the States that make up the former Yugoslavia) are bound to comply with the requests, warrants and orders issued by the tribunals. This may be contrasted with the Statute of the International Criminal Court (described below), which States may choose to ratify or not. The tribunals are the international community's first attempt since Nuremberg and Tokyo to apply the rule of law to serious violations of international law occurring during war or ethnic violence.

The ICTY has the power to prosecute four types of crimes — grave breaches of the Geneva Conventions, violations of the laws and customs of war, crimes against humanity, and genocide, while the International Criminal Tribunal for Rwanda (ICTR) has jurisdiction over serious violations of common Article 3 of the Geneva Conventions and Additional Protocol II, crimes against humanity, and genocide. The Prosecutor in both tribunals has a dual role: to investigate the commission of crimes, and to prosecute those alleged to be responsible for perpetrating them. The investigation necessarily involves gathering enough evidence from all available sources to establish the accused's guilt "beyond a reasonable doubt". The Deputy Prosecutor of the ICTY, Graham Blewitt, affirms PHR's stance on the role of forensic evidence: "[it] often provides unequivocal corroboration of what could otherwise be suspect or dubious evidence".¹⁴

The involvement of forensic experts in the investigation process is by way of invitation from the Prosecutor's Office. PHR was called upon to collaborate in conducting the first exhumations of human remains from four sites in Bosnia. These exhumations provided cogent evidence and corroborated allegations that serious violations of international humanitarian law had occurred. The findings of the forensic practitioners corroborated witness testimony regarding the execution of hundreds of men who had surrendered to Bosnian Serb soldiers after attempting to flee following the Bosnian Serb takeover of Srebrenica in the summer of 1995. Ligatures around the wrists of many of the bodies, the presence of blindfolds and the close-range bullet wounds contradicted the claims of Bosnian Serbs that the mass graves contained bodies of soldiers killed in the course of legitimate military activities.¹⁵

¹⁴ Blewitt, *op. cit.* (note 7), p. 284.

¹⁵ *Ibid.*, p. 288.

Even with the UN Standing Team of experts and the advent of the International Criminal Tribunals for the former Yugoslavia and Rwanda, arrangements for engaging forensic expertise to investigate allegations of war crimes and other human rights abuses are less than ideal. For example, different contracting bodies have been involved in organizing forensic teams to investigate allegations in the former Yugoslavia. During the armed ethnic conflict in Kosovo in December 1998 the Federal Republic of Yugoslavia and the European Union had some discretion to intervene. One measure in this intervention was to deploy a team of Finnish forensic experts to investigate allegations of mass graves near the capital, Pristina, on the basis of a protocol of cooperation between the Institute of Forensic Medicine of Belgrade University and the Department of Forensic Medicine of Helsinki University.¹⁶ Later, in 1999, the forensic investigations in Kosovo were conducted under the auspices of the ICTY when the Chief Prosecutor requested the aid of the international community and received positive responses from Austria, Belgium, Canada, Denmark, Spain, Sweden, the UK, Australia and the USA. Forensic experts from these countries took part in investigations in the summer and autumn of 1999.¹⁷

In East Timor, forensic investigations into the alleged massacre of East Timorese following the independence vote in 1999 were complicated by the failure to establish an international tribunal. The UN arrangements for governing East Timor included efforts to investigate deaths, but there was not the same level of coordinated activity and resources brought to bear as in the former Yugoslavia. The paucity of the pre-existing infrastructure complicated matters severely and a comparison with the organization of investigations in the former Yugoslavia is probably therefore not warranted. Responsibility for the investigations was divided between the police and the Human Rights Unit, which had a wide remit extending well beyond forensic investigations.

International Criminal Court

The Rome Statute, which establishes a permanent international court to prosecute those accused of international crimes, came into force on 1 July 2002.

¹⁶ J. Rainio, K. Lalu and A. Penttila, "Independent forensic autopsies in an armed conflict: Investigation of the victims from Racak, Kosovo", *Forensic Science International*, Vol. 116, 2001, p. 166.

¹⁷ S. Sprogøe-Jakobsen *et al.*, "Mobile autopsy teams in the investigation of war crimes in Kosovo 1999", *Journal of Forensic Science*, Vol. 46, No. 6, 2001, p. 1392.

This significant event in world humanitarian affairs means there will now be a permanent forum, as opposed to the *ad hoc* tribunals established to deal with the occurrences in the former Yugoslavia and Rwanda, to hear cases against individuals accused of committing genocide, crimes against humanity, war crimes and the crime of aggression (once a definition of the latter offence has been agreed).¹⁸ These crimes represent some of the most serious possible offences against the person. As in domestic practice and in the international tribunals, there is likely to be a strong medico-scientific evidential base for many of the matters dealt with by the court. This will include the evidence of doctors who have been working in the field in regions of the world where there has been major civil and military conflict. Many of these medical practitioners will have been engaged in the provision of clinical medical services to civilians displaced by armed conflict or indeed targeted by political, civilian or military groups. Such doctors will be able to provide medical evidence of the effects of torture, rape, and physical and emotional deprivation associated with detention. In addition, medical evidence may be available in regard to such matters as nutrition, public health and infectious disease control. This is in addition to the forensic scientists' role in death investigation.

One of the most significant difficulties in establishing an expertise basis within the International Criminal Court will be that there are few international standards for the practice of forensic medicine and science. For example, forensic pathology as a discipline is well recognized in countries whose approach to justice is based on the English legal system, but is less well recognized in countries following European jurisdictional models. Indeed, the individual medical speciality of forensic pathology is not recognized at a registration board level in many European countries, although the specialized area of medico-legal practice is recognized. Such medico-legal practice encompasses both clinical and forensic pathology services, as well as medical examinations performed for civil judicial processes. Different medical speciality structures have implications for standards governing both qualifications and practice in any context where forensic medical or pathology expertise is central to the outcome.

Setting standards for international forensic work

The tension between justice and identification

A core issue is the tension between justice and identification. In discussing "The role of forensic investigation in prosecutions for genocide

¹⁸ Rome Statute of the International Criminal Court of 17 July 1998, Art. 5.

before an international criminal tribunal”,¹⁹ Graham Blewitt, Deputy Prosecutor of the ICTY, wrote of their vital role in corroborating “allegations that serious violations of international humanitarian law, including genocide, had occurred”.²⁰ He also wrote: “following the exhumation in Bosnia and Croatia, all the bodies underwent autopsies by a team of forensic pathologists to determine the cause and manner of death *and the demographic profile of the victims*. Evidence of personal identification was also collected. At the completion of the autopsies, all remains and personal effects were returned to the relevant government officials for the ongoing identification process and the return of the victims’ remains to their families”.²¹

It is no criticism of the ICTY, as Blewitt has pointed out, that individual identification was not a primary aim of the death investigations it initiated.²² Identification was not necessary for the Tribunal’s purposes and the resources required to mount a mass disaster victim identification exercise are of a higher order of magnitude than those required to undertake death investigations for justice purposes. The ICTY had neither the resources nor the time. Notwithstanding that some of the remains, for example from Srebrenica, have been stored (not reburied) pending formal identification by the International Commission on Missing Persons, in many instances where examinations of human remains were performed, the remains were reinterred to be later re-exhumed for identification purposes. There are a number of issues at stake here relating to the dignified handling of the remains, the respect accorded to the surviving family members and the duties of the forensic specialists involved, as well as the obligations to assist the proper course of justice.

A number of conclusions may be made in that regard:

- current human rights documents relating to forensic sciences do not adequately address the rights of families to know the fate of their relatives;
- it must be recognized that a mark of civilization is that dead people are identified. Authorities must ensure that the examination of human remains and their identification are undertaken by qualified and competent people. The former should be the responsibility of a medical practitioner who is a qualified forensic pathologist. (Obviously this may require modification in some contexts.) Such a person, quite apart from

¹⁹ Blewitt, *op. cit.* (note 7), p. 288.

²⁰ *Ibid.*, pp. 277-8.

²¹ *Ibid.*, p. 288. Emphasis added.

²² A Danish-Swedish team of forensic scientists working for the ICTY have also made this observation. Sprogøe-Jakobsen *et al*, *op. cit.* (note 17), p. 1395.

having qualifications, skills and experience, is a professional whose practice exists within an organized ethical framework and who can be held accountable for error or unethical practice;

- during the course of an examination of remains, forensic specialists have an ethical duty to observe and record all information and retain appropriate samples potentially relevant to identification.

This last point resonates strongly with some guidance in the World Health Organization publication *Ethical Practice in Laboratory Medicine and Forensic Pathology*.²³ It is suggested that forensic pathologists owe a duty to the deceased to see that the true cause and circumstances of the death or deaths are revealed. Although not explicitly stated, this duty could be fulfilled only if the true cause and circumstances are revealed to those who matter — the family and the authorities. If this is the case, the family can be informed only if the deceased is identified. The guidance goes on to discuss the content of the duty owed by the pathologist and concludes that it is: “(...) to exercise at least a reasonable degree of care and skill in his or her work (...) [to produce] valid and useful observations and conclusions (...)”.

To understand what this means in practical terms requires an understanding of the basic aims of the forensic autopsy. These are as follows:

- to discover, describe and record all the pathological processes present in the deceased and, where necessary, the identifying characteristics of the deceased;
- to relate these processes to the known medical history of the deceased, to draw conclusions about the cause of symptoms and signs observed in life and then to draw conclusions about the cause of death and other medical and non-medical factors contributing to death;
- to contribute to the reconstruction of the circumstances surrounding the death. Where these circumstances are important or likely to be in dispute, this will require consideration of the scene of the death as well as the relevant autopsy observations, many of which may be of trivial medical consequence; and
- in accordance with good medical practice, to record all the relevant observations and negative findings, and to retain specimens, so that another pathologist at another time is in as good a position as possible to come to his or her own conclusions about the death. This will often involve reliance on good quality, preferably colour, photography.

²³ S. Cordner, M. El Nageh, D. Wells, H. McKelvie and B. Lineham, *Ethical Practice in Laboratory Medicine and Forensic Pathology*, WHO Regional Publication, Eastern Mediterranean Series 20, EMRO, 1999, p. 37.

It is axiomatic that the proper forensic examination of human remains should encompass all those observations and procedures which are necessary and practicable to enable, perhaps at a later time, identification of the human remains. None of the foregoing in any way derogates from the serious justice-related purposes of the examination, it is simply intended to underscore the equivalent importance of identification.

Problems with lack of standardization

Problems could arise from the lack of clearly articulated and universally accepted standards of practice and documentation of the work involved. The Danish-Swedish forensic autopsy teams working in Kosovo from July through to October 1999 describe using a template for autopsy reports modified from one previously used in Bosnia and adapted to the special requirements in Kosovo. "ICTY did not define how the results should be presented: the only instructions given were that the investigations should be performed according to 'national standards'."²⁴ In another instance, the main role of a Finnish team working in Kosovo in January 1999 was to affirm the impartiality of autopsies performed on bodies found in the village of Racak, where there were conflicting stories about the course of events leading to the deaths. The Finns worked with four local Yugoslav forensic pathologists and two from Belarus. For the autopsies they themselves performed, the Finnish authors described using "standard methods of forensic pathology (...) in accordance with the guidelines set by the United Nations and Interpol",²⁵ whereas for those autopsies which they observed for monitoring purposes and which were performed by a Yugoslav professor, they reported that "standard methods of forensic pathology" were employed and that "documentation was similar to that" used by the Finnish pathologists.²⁶ From these descriptions, it is not clear what real differences there may have been in the methods and documentation employed, but anyone who has been aggressively cross-examined about discrepancies in medical evidence can imagine how these differences may be used to discredit otherwise sound evidence, thereby significantly undermining a prosecution case.

Differences in "national standards" and practical and ethical understandings clearly have potential to compromise the utility of evidence for prosecutions. In 1998, a Finnish team working with practitioners from Belgrade

²⁴ Sprogøe-Jakobsen *et al*, *op. cit.* (note 17), pp. 1392-3.

²⁵ Rainio *et al*, *op. cit.* (note 16), p. 173.

²⁶ *Ibid.*, p. 177.

were investigating claims made about Serbs having been killed by ethnic Albanians in Klecka and Volujak. The information received from the presiding District Court was that “several persons” had been killed and buried in Volujak, and that 22 persons, including women and children, had been killed and cremated in Klecka. “By using morphological, anthropological, odontological and DNA analyses, the Volujak remains were shown to contain most likely the bones of five adult males and the Klecka remains, the bones of three adult male victims”.²⁷ When the Finnish team arrived in Kosovo, the remains from Volujak had already been delivered to the university in Pristina, so that they were unable to document and verify the chain of custody of the remains, or that all the remains located in both areas had been submitted for investigation, or even that they were from the area from which they were purported to have been collected.²⁸

Best practice guidelines

Best practice guidelines should facilitate observance of agreed ethical and technical standards, especially where pressures to deviate may be present. They will also serve as objective standards against which individual national standards may be compared, for example, by the International Criminal Court. The guidelines need to be disseminated and promoted within the forensic community and should include reference to the use wherever possible of local skills.

Other issues at stake for forensic scientists (many of which are familiar in a domestic context) include the importance of the neutrality and independence and therefore impartiality of forensic scientists. The contracting agency consequently must be of a kind which is compatible with these values and which undertakes to respect and support them. The contract should set out clearly the mandate which authorizes the work being contracted. It should also recognize the roles and responsibilities of the forensic scientist and the importance of adherence by him/her to relevant guidelines. The forensic scientist needs to conduct him/herself in ways that do not infringe this impartiality. Secondly, arrangements need to recognize the right of families to information. Subject to the integrity of the investigation and the wishes of families, involvement by families in the processes leading to identification (e.g. exhumation) will generally be beneficial (facilitation of data collection, improved confidence in conclusions, therapeutic

²⁷ *Ibid.*, p. 171.

²⁸ *Ibid.*

psycho-social effects). Thirdly, there needs to be recognition by forensic scientists of the accepted principles of protection of personal information, including genetic information. Before exhuming or identifying remains, forensic scientists will want to be assured:

- that procedures are in place to inform and return remains to families;
- that procedures are in place to inform and, if necessary, return the remains to the authorities;
- about the way in which their findings may be used in the domestic and international criminal justice systems and how their work will affect the political process;
- that they and the families understand the legal framework within which they will be working.

Finally, forensic scientists will need to acknowledge and understand the serious pitfalls associated with involvement in this type of work. Apart from the possibility of physical danger, forensic scientists can wittingly, unwittingly or by virtue of poor practice, participate in violations of human rights.

Identification and the use of DNA analysis

Identification can be made in three ways:

- visually (relatives or acquaintances viewing the remains);
- circumstantially (e.g. matching ante-mortem data with information gathered during the autopsy; other circumstantial information);
- scientifically or objectively (e.g. by dental records, fingerprints or DNA).

There is some overlap between these in practice. They do not necessarily represent an order of priority, but as identification becomes more difficult, the emphasis moves down the list. Whenever possible, a visual identification should be supplemented with one of the other two methods. Obviously, depending on the weight of circumstantial evidence, it may need to be supported by objective evidence.

The use of DNA techniques alone, and early in the process, is superficially an attractive and simple option. There are, however, many considerations before they can be used at all. First of all, public perception must not overwhelm science. Before DNA techniques are given primacy over traditional identification methods, the following criteria should be met:

- the techniques as they will be used in practice must be reliable and valid;
- the associated information technology for analysis and matching must be reliable and valid;
- additional costs must be outweighed by additional social benefit.

Particular issues concerning the handling of sensitive information will arise, for example how to deal with the situation when DNA testing reveals that a man might not be the father of a particular child previously thought to be his. Using DNA as a sole identifying method may put relatives under duress to provide blood samples, may preclude the use of sound, simple means of identification and, like most laboratory processes, is not entirely infallible. For all these reasons, it would be wrong for laws to be passed requiring mandatory DNA testing prior to formal identification. Given the public profile of DNA techniques and their essentially humanitarian purpose when applied to identification in the context of the missing, commercial considerations should be minimized by the laboratory performing the work. The public profile may also raise false hopes of rapid identification of large numbers of deceased soon after the events leading to mass deaths.

The field is developing so rapidly that familiarity with the required techniques is variable. Related issues of cost and logistics, not to mention privacy, add to the complexities. Further work should be carried out on the question of accrediting DNA laboratories engaging in the identification of missing persons.

International forensic science practice in the future

As indicated above, there are at present few formal standards designed for international practice in forensic science including the core disciplines of forensic pathology, anthropology, odontology and the others listed in Table 1. There are no credential or qualifying procedures for forensic pathologists practising internationally. There are some standards covering domestic practice. Probably American pathologists have gone the furthest in setting standards for different types of autopsies.²⁹ A major standard alongside the Minnesota Protocol is the Interpol Disaster Victim Identification Form Set.³⁰

²⁹ G. Hutchins, Autopsy Committee of the College of American Pathologists, "Practice guidelines for autopsy pathology: Autopsy performance", *Archives of Pathology and Laboratory Medicine*, Vol. 118, 1994, pp. 19-25, and "Practice guidelines for autopsy pathology: Autopsy reporting", *Archives of Pathology and Laboratory Medicine*, Vol. 119, 1995, pp. 123-130; The Royal College of Pathologists, *Guidelines on Autopsy Practice*, <<http://www.rcpath.org>>; K. Bove, Autopsy Committee of the College of American Pathologists, "Practice guidelines for autopsy performance: The pre-natal and paediatric autopsy", *Archives of Pathology and Laboratory Medicine*, Vol. 121, 1997, pp. 368-376; J. Powers, Autopsy Committee of the College of American Pathologists, "Practice guidelines for autopsy pathology: Autopsy procedures for brain, spinal cord and neuromuscular systems", *Archives of Pathology and Laboratory Medicine*, Vol. 119, 1995, pp. 777-783.

³⁰ Available from the Interpol website <<http://www.interpol.int>>.

Any development of standards for operational practice in the international domain would be advised to pay due regard to these well-established documents. The latter in particular, having been used countless times, has an established infrastructure keeping it under review and is well understood by police forces around the world.

Given the importance attached to the competence of forensic scientists for the task, and the reliability and validity of their observations and conclusions, it is recommended that an international body or network of forensic scientists be established. No such global organization currently exists. The International Association of Forensic Science (IAFS) has the correct name, but its Articles limit it to running an international conference every three years and any change in its constitution takes at least six years, as it must be approved at two subsequent meetings. Other organizations with transnational forensic and/or human rights interests would need to be consulted in establishing such a body or network.³¹ It should have responsibility for:

- drawing together the different disciplines of forensic science;
- disseminating guidelines and standards of practice;
- evaluating ethical issues;
- professional credentials;
- providing advice to contracting bodies and forensic scientists;
- audit and evaluation of field activities;
- language issues (translation and professional lexicon);
- lobbying governments to make forensic expertise and material resources available for international work;
- lobbying for “clearing houses” on national or regional bases for dealing with missing people.

This rather daunting list of responsibilities should be discharged without creating a centralized bureaucratic organization.

One of the consequences of implementing this approach in the international arena will be the realization that in many countries, the standards are such that their practitioners will not be able to operate at the required

³¹ These include World Medical Association; Indo Pacific Association of Law Medicine and Science (INPALMS); World Association of Societies of Pathology; Physicians for Human Rights; European Network of Forensic Science Institutes; American Society of Crime Laboratory Directors (this organization accredits many laboratories outside the US); European Academy of Forensic Sciences; and International Academy of Legal Medicine.

level in an international environment. This imposes a further responsibility on the international forensic community, namely to provide supported, formal, training opportunities for practitioners from the developing world in the full range of forensic disciplines necessary to meet the required standards. Such training is particularly required for the core disciplines of forensic pathology, anthropology and odontology. As far as the authors are aware, there are no organized training programmes for trainees from the developing world funded on a recurrent basis and leading to opportunities to obtain appropriate qualifications. This gap urgently needs to be addressed.

Conclusion

The forensic sciences are widely regarded as the tools of justice. In the context of missing persons they possess profound humanitarian capacities and skills which can help survivors, affected communities and families, assist justice, set straight the historical record and deter future violations. Effective achievement of these outcomes relies upon competent performance producing valid results in particular cases. This requires standards which are established, agreed and adhered to.

Résumé

Élaborer des normes en matière de travail médico-légal pour l'identification des personnes portées disparues

Stephen Cordner et Helen McKelvie

L'identification des personnes décédées revêt une importance humanitaire manifeste. La plupart des pays disposent des systèmes nécessaires pour accomplir cette tâche. Dans les situations de dislocation de la société, fréquentes au lendemain d'une guerre, d'une insurrection et de violations flagrantes des droits de l'homme, les familles ont désespérément besoin de savoir ce qu'il est advenu de leurs proches. Le système pénal international naissant n'a souvent pas besoin de connaître l'identité des personnes décédées pour établir la réalité d'un crime et la culpabilité de l'accusé. En outre, il arrive que ceux qui réalisent l'examen n'aient pas été désignés en fonction de leurs qualifications ou d'une évaluation de leurs compétences. Les valeurs internationales et les normes techniques régissant l'action des experts législatives intervenant dans un contexte international sont relativement peu développées. Elles doivent l'être si l'on veut que des observations fiables conduisent à des conclusions que pourraient reproduire des experts compétents.