

From Dust to Dust: Ethical and Practical Issues Involved in the Location, Exhumation, and Identification of Bodies from Mass Graves

Erin D. Williams, John D. Crews

Foundation for Genetic Medicine, Inc., Reston, Virginia, USA

There are many potential purposes served by the investigation of human remains: criminal fact-finding, archaeological exploration, forensic research, and others. This paper focuses on the identification of remains from mass graves to find missing persons. The primary goal of such efforts is to honor the memory of the dead by bringing closure to living family members, thus supporting the human rights of both the living and the deceased. Cultures, customs, political, and interpersonal specifics will vary, but that singular goal should remain the central guiding principle. This article presents ethical and practical issues resulting from efforts to locate, exhume, and identify the remains of mass fatalities.

Key words: death; DNA; DNA fingerprinting; ethics; forensic anthropology; forensic medicine; human rights; jurisprudence.

Excerpts from the Personal Journal of Erin Williams:

My God. Oh my God. I feel shock? Isolation? Grief? Alone. A few hours ago a hijacked plane crashed into one World Trade Center building in New York City. Soon after, a second crashed into the other tower. Then another crashed into the Pentagon and a fourth crashed outside of Pittsburgh. My God.

As I watched on live television, first one, and then the other World Trade Center towers collapsed. Apparently people tried to flee by jumping out of windows. My God. I can't imagine. The irony is not lost on me. My friends were worried about my safety traveling here [to Croatia and Bosnia]. And in my absence, what United States government officials are calling an "act of war" was committed in the US – one in my home state of Virginia.

[September 11, 2001: Dubrovnik, Croatia]

It is estimated that about 40,000 bodies remain unidentified in mass graves from the breakup of the former Yugoslavia. Less than 4,000 are presumed dead in the US from the 9-11 attacks. Unlike here, the US attacks had no rape or concentration camps, no years of bombing and war. And the number dead are such a tiny percentage of the U.S. population compared with the percentage of the local population killed by the wars in the Balkans. I am grieving for myself, and yet my personal losses seem almost insignificant compared with those of the people around me.

[September 20, 2001: Tuzla, Bosnia]

The September 11, 2001, attacks on the United States' World Trade Center and Pentagon were sudden, dramatic, well recorded, and heavily publicized. That day is indelibly marked in the minds of the US people. Though unpleasant to consider, the consequences of these attacks are not unique. Mass killings have taken place around the world in a variety of venues for centuries (1). Exploration of the events that cause mass casualties, and the scientific, ethical, and humanitarian lessons learned from the identification efforts that follow, may assist those whose families are still dealing with grief, no matter their location or circumstances.

Without direct experience, it is impossible to grasp fully the effects of any tragedy on a population. More specifically, within any population, individuals' reactions to dealing with human remains will vary according to an assortment of factors. For instance, people may characterize the remains themselves as relatives, specimens (2), body, body parts, tissue, corpses, property (3), heritage (4), evidence, objects (5), worthless materials (6), and eventually as archeological artifacts (7). Recognizing this variation, the authors believe that the best outsiders can do to assist survivors of mass casualties is to approach them with humility, a willingness to listen, and a desire to help.

The liberalization, democratization, and capitalization of countries in the 20th century opened the doors for those advocating strict adherence to human rights (8). Unfortunately, many societies that are the beneficiaries of newly implemented human rights within their countries have had to suffer the severe injustice of intense human rights violations before such

reforms could take place. A number of humanitarian organizations have been created to help bring justice to the families of the missing, and also to bring some level of respect to victims themselves (9,10). Physicians for Human Rights and the Truth and Reconciliation Commission are two such organizations. These and other similarly oriented organizations face a spectrum of problems in gathering information on missing persons (11). There are a great many reasons why a government, population, or society would not want to uncover its past (11).

In creating this article, we have drawn from a wide array of sources. Many are specific to the situation in the former Yugoslavia because of our direct experience with the identification efforts there. The authors hope that the exploration of issues, no matter their origin, will generate a resource of value to those involved in identification efforts around the globe.

This paper focuses on efforts to find missing persons through the identification of remains from mass graves. It begins by painting a contextual picture, with some of the psychological effects that mass casualties have both on a population and on those seeking to assist survivors. The next sections of the article introduce topics surrounding the identification process and issues related to each topic. The final section returns to the central guiding principle that may serve as the foundation for future work.

Psychological Effects of Mass Human Tragedy on Survivors and Recovery Teams

Many of the ethical and pragmatic issues that arise around the identification of human remains stem from interactions between or involving surviving family members and humanitarian organizations' recovery teams. Both of these groups are intimately involved in numerous aspects of the identification processes. However, both are also comprised of individuals in uniquely stressful situations. The following exploration of some typical characteristics and concerns of survivors and workers dealing with human remains is intended to engender understanding in order to enhance opportunities for collaborative approaches to issue resolution.

Survivor Characteristics

Without a body to bury, without assurance of death, real grieving cannot even begin, because it is viewed as disloyal. This is not denial, but reality. Without the certainty of death, the status of family members remains unclear. The women are not even widows, but widows waiting to happen, an agonizing role.

The families cannot "get over it," nor should we. When we push toward what is unattainable closure, the anger and conflict result not because of their denial, but because of ours. A healthier goal is to learn to live with grief and the legacy of unanswered questions. This is possible.

[A widow of the September 11, 2001, attacks in the USA] (12).

One major factor that undermines exhumation and identification efforts is "poor communication with the relatives of the missing" (13). Understanding the survivor population is important, yet difficult because the effects of mass casualties on a population are varied and complex. Violence can cause people to lose not only their loved ones, but also their means of income (14). It can deprive children of their parents as well as their roots. Survivors may feel tremendous guilt, not only for having lived while others perished, but also for having taken measures, both through action and inaction, necessary to stay alive (15).

Survivors may have suffered not only the deaths of those close to them, but also a series of other traumas. For instance in Bosnia, beginning in February 1992, the Serbian war machine initiated a campaign to rid the province of its pro-independence Muslim majority by, for example, subjecting women and young girls to torture and rape (16). Men were held in concentration camps, were starved, beaten, and often murdered (8). Mosques were destroyed (16). The shelling of hospitals and medical relief facilities by the Bosnian Serb army compounded the population's injuries (8). Many well-educated Muslims were executed by the Bosnian Serb army (16), or fled to escape the atrocities (17), often finding their way to other European countries or North America where they settled as refugees (18).

For survivors of such traumas, even after the killing subsides, the effects may still multiply. Some opportunists may spread disinformation and conduct scams "played out on desperate families, with meaningless but costly information peddled to them on the whereabouts of the missing" (19). Those wishing to obscure the past may seek to intimidate or undermine not only survivors, but also those seeking to assist them (20).

Some survivors in the former Yugoslavia believe that thousands of the missing could still be "hidden by the former warring parties in secret camps or places of detention" (21). Not knowing the whereabouts of a loved one creates what has been described as "tormenting uncertainty" (22) and a "painful limbo" (14).

Stress related to mass casualties can manifest itself physically with somatic presentations, such as headaches, non-specific body pain, dizziness, weakness, and fatigue (15). Victims may also experience psychiatric and social dysfunction (15). A major protective factor against the all of these effects is the presence of a community able to "provide mutual support and nurture problem-solving strategies." (15). In the case of war, opposing forces routinely target these aspects of a community, leaving the population less able to heal itself (23).

Post-war transition governments may pose another set of difficulties for survivors. They may seek to "obliterate history and those who have been killed in the past. In this situation, relatives have a new goal: to struggle against oblivion and disinformation" (24).

Families of the missing may form support groups and associations that encourage discussions and expressions about the past as well as enable collective action and empowerment. However, in the case of

Croatia and Bosnia, many of these associations, like the individuals themselves, "suffer from some of the direct effects of recent conflict – poor economic resources, communication difficulties (e.g., poor telephone lines or trouble traveling to entities under the influence of opposing groups), recent exposure to trauma, great uncertainty about their futures, and a society influenced by a confusing mixture of international organizations with different mandates" (21).

An array of activities is necessary to heal survivors. "The International Commission of the Red Cross (ICRC) has identified three principal categories of family needs and priorities: information, accountability, and acknowledgement" (25). Individuals must begin the healing process by recognizing their own suffering, as this is the first step toward reconciliation (23). This may be difficult while loved ones remain missing, and while coming to grips with the fact that many criminals will remain unpunished (26).

The identification of human remains and prompt access to information about the missing can put a stop to the ongoing pain of not knowing the whereabouts of loved ones. It can enable relatives to provide funeral services (22). It can facilitate mourning and acceptance that a loved one is deceased, and can provide evidence for prosecution and justice. At the same time, continued searches for the missing can "serve as an active reminder to the families that the crimes committed against them have not been forgotten" (15). Seeing progress made to address the concerns expressed by the family groups may further help to cement their empowerment.

It has been suggested that "social reform is the best medicine for victims of war and atrocity, this means public recognition and justice" (23). Adherence to humanitarian treaties and the establishment of a "lasting legal order" (27) can, in our view, help to bring justice and the restoration of rights to a disempowered populace, and to prevent future human rights abuses. In this way, a community can both heal itself, and create a sustainable future.

Recovery Team Characteristics

One consequence of humanitarian and recovery operations is coming into contact with bodies of people that have died under tragic or horrible circumstances. You may be assigned the mission of recovering, processing, and perhaps burying human remains. The victims may include women, elderly people, or small children and infants for whom we feel an innate empathy. Being exposed to children who have died can be especially distressing, particularly for individuals who have children of their own (5).

Individuals tasked with assisting families and handling human remains face many of the same feelings and obstacles as the survivors. Staff members are likely to experience a range of emotions – from sorrow, regret, and repulsion to disgust, anger and guilt, to overwhelming feelings of anxiety, to futility (5). The staff may also be stressed by obfuscation and intimidation by belligerent forces (14). To combat the effects of intimidation, an organization can publicize its activities and the barriers it faces, creating a buffer

of public pressure and awareness (14). To reduce staff stress associated with handling human bodies, organizations can limit exposure to stimuli from the bodies by using screens, masks, gloves, covers, and the like (5).

For individual staff members, programs should be established to prepare them ahead of time for the types of sights, smells, situations, and emotions they are likely to encounter (5). During the operation, staff members should be regularly reminded of the value of what each is contributing (5). Staff should also be encouraged to take care of one another, sharing feelings and experiences, bonding, grieving, and laughing together (5).

Organizations should make mental health resources available to staff members as well as to the survivor community (28). Each organization should require its staff members to rest and tend to their own needs; otherwise they may neglect themselves or feel guilty for taking personal time while others are still suffering (5). Staff members should, for example, have time to exercise, eat healthy and regular meals, spend quality time with loved ones, and engage in other activities that reduce their overall stress and anxiety levels. At the conclusion of the operations or employment, staff members should be made aware that they may continue to experience a range of emotions rooted in their work. They should be instructed to seek a place to express themselves and receive support (5).

The authors believe that organizations should make every reasonable effort to address to staff members' needs, recognizing both the difficulty and the importance of their tasks. Stress embodied in a staff is likely to manifest itself in the organization as a whole. For an organization to ensure that it is fulfilling its humanitarian purpose, it must care for and nurture those doing its work.

Questions and Issues Involved in Exhuming and Identifying Bodies from Mass Graves

Even in situations in which survivors and recovery teams are ideally cared for, numerous issues may arise around the exhumation and identification process. These may be technical, pragmatic, ethical, social, and/or legal in nature. This section of the article describes many of these issues, and proposes resulting questions. Answers to those questions, while outside the scope of this paper, warrant future attention.

Locating and Exhuming Bodies

Examples and Issues. According to the Geneva Convention of 1949, Articles 130 and 136, States are required to help with the location process: "the Detaining Power shall forward lists of graves of deceased internees to the Powers on whom the deceased internees depended. ... Such lists shall include all particulars necessary for the identification of the deceased internees, as well as the exact location of their graves" (29). These provisions are buttressed by those of Article 32, which states that families have the right to "know the fate of their relatives" (30).

Other sections of the Convention spell out an associated range of rights and obligations. "Each Party to the conflict shall search for the persons who have been reported missing" and "all relevant information" concerning missing persons should be released to facilitate such searches (Article 33). "Relevant information" means records of "persons who have been detained, imprisoned or otherwise held in captivity for more than two weeks... or who have died during any period of detention" (Section 2 of Article 32). The Detaining Party also has an obligation to "facilitate and, if needed, carry out the search for and the recording of information" on persons who may have died while in captivity. All parties will endeavor to facilitate the recovery and identification of remains from battlefield areas (Section 4).

A government in whose territory mass graves exist may assist with the location efforts even if it is not a "Detaining Power" as described in the Geneva Convention. One example of this was provided by the actions of the Croatian government following Serbian forces' egregious actions in September 1991. Serbian forces had made an agreement to release patients and civilians from a hospital in Vukovar, a city in the eastern Slavonia, a Croatian province (31). However, instead they transported the Croats to Ovčara, a large farm in the vicinity of Vukovar, where they beat, tortured, and summarily executed them (31). Though Croatia was neither the aggressor nor the Detaining Power, Croat officials took it upon themselves to assist families of the missing by exhuming and identifying some of these remains in the summer of 1998 (31).

Despite international legal requirements to the contrary, "Detaining Powers" and others may not always be forthcoming with locations of mass gravesites. One example of this followed the infamous 1995 incident in Bosnia and Herzegovina (BiH): the Srebrenica massacre. Serbian forces took control of the Dutch-held United Nations enclave of Srebrenica, and during the four days that followed Serbian forces killed approximately 8,000 men and boys (19).

After the massacre, the Serbian government, and the Serbian-held enclave of BiH, Republika Srpska (RS), was not helpful in efforts to locate the mass gravesites of the Srebrenica victims (19). The Human Rights Chamber, Bosnia and Herzegovina (HRC-BiH), established under Annex 6 to the 1995 Dayton Peace Agreement between Bosnia, Croatia, and Serbia, officially expressed its disappointment in a decision released on March 7, 2003:

...the Chamber concluded that the Republika Srpska's failure to make accessible and disclose information requested by the applicants about their missing loved ones, last seen in the Srebrenica in July 1995, constitutes a violation of its positive obligations to secure respect for the rights to private and family life, as guaranteed by Article 8 of the Convention. In addition, the Republika Srpska's failure to inform the applicants about the truth of the fate and whereabouts of their missing loved ones, including conducting a meaningful and effective investigation into the massacre at Srebrenica in July 1995, violates

their rights to be free from inhuman and degrading treatment, as guaranteed by Article 3 of the Convention. Lastly, the Chamber concluded that the Republika Srpska discriminated against the applicants due to their Bosniak origin. The Chamber stated that 'in the context for the Srebrenica cases, these violations are particularly egregious since this event resulted in the largest and most horrific mass execution of civilians in Europe in the second half of the twentieth century. Moreover, the violations reflect a total indifference by the authorities of the Republika Srpska to the suffering of the Bosniak Community (32).

Through the pioneering work of the International Commission on Missing Persons, created at the G-7 summit in Lyon, France, held on June 27-29, 1996 (33), and other international organizations, such as the ICRC, local entities, and scientists, over 1,200 DNA matches of the victims of Srebrenica have been made as of 11 April 2003 (personal communication, Director of Forensic Science Program, International Commission on Missing Persons). Despite these successes, the task at hand in the former Yugoslavia is enormous with an estimated 40,000 missing region-wide (5,25,34-38).

Both States and individuals may be reluctant to come forward with gravesite location information for fear of self-incrimination. This fear may be well founded given that article 18 of the 1995 United Nations Congress on the Prevention of Crime and the Treatment of Offenders specifies that, "Persons who have or are alleged to have committed [acts of enforced disappearance] shall not benefit from any special amnesty law or similar measures that might have the effect of exempting them from any criminal proceedings or sanction."

It is speculated that military and surveillance sources may refuse to release gravesite location information because it would mean revealing classified capabilities such as, for example, satellite technology and counterintelligence. Those seeking their missing relatives may also be hesitant to make inquiries for fear of retribution (39).

Once gravesites are located, the exhumation process may be complicated. For instance, as the authors experienced during their work in Bosnia, some gravesites have been rigged with land mines to prevent the recovery of evidence. Others are located in technically challenging areas, such as one in a 70-meter-deep mineshaft (19).

Despite the range of difficulties, helping families to locate remains is at least as necessary as it is daunting. For example, as the Srebrenica Justice Campaign explained:

The issue of exhumation, identification, and proper reburial of bodies from the forests and mass graves around Srebrenica is of paramount importance to the Srebrenica relatives. Without this they are haunted by the hope that their loved ones may still be alive, imprisoned in Serbia. They also feel the truth of the massacre is in danger of being covered up by politicians of their own and foreign governments (13).

Resulting Questions:

1. In what circumstances, if any, should potential criminals be guaranteed immunity from prosecution if they assist in the location of mass graves, given the ethical implications and the fact that it is not permitted according to Article 18 of the 1995 United Nations Congress on the Prevention of Crime and the Treatment of Offenders?

2. Is there a means other than the granting of immunity that would allow and encourage individuals and/or States with information about the location of mass graves to come forward?

3. In what circumstances, if any, may military and surveillance sources be compelled to release classified information to assist in the location of mass graves?

4. Is there a means other than the disclosure of classified information that would allow and encourage military and surveillance sources with information about the location of mass graves to come forward?

5. What protocols are most effective at reducing the risk of physical injury to those exhuming bodies from mass graves?

6. How can threats of retribution and obfuscation be best avoided and confronted?

Commingling of Remains, Misidentification, and Burial

Examples and Issues. The accurate identification of human remains from mass graves is impossible to guarantee in every case. Some commingling of remains occurs through natural processes, such as down-slope movement accompanied by rainwater (27).

The Geneva Convention of 1949 gives specific instructions on care and handling of human remains:

Article 130: The detaining authorities shall ensure that internees who die while interned are honourably buried, if possible according to the rites of the religion to which they belonged, and that their graves are respected, properly maintained, and marked in such a way that they can always be recognized.

Deceased internees shall be buried in individual graves unless unavoidable circumstances require the use of collective graves (29).

Article 34 provides that once hostilities subside between antagonistic parties, each party should "facilitate access to gravesites by relatives," "maintain such gravesites permanently," and "facilitate the return of remains... to the home country upon request" (29). However, implementing these regulations is not necessarily straight forward, even for a willing party.

In the former Yugoslavia, numerous factors challenge the identification process. In many graves, recovered remains have been stripped of potential leads to their identity, such as personal documents and jewelry (31). Bodies have been recovered with clothing and personal articles that do not match their identities as confirmed by DNA testing (author's unpublished results). In some instances, in order to hide their

crimes, Bosnian Serbs used heavy earthmoving equipment to hurriedly exhume and re-deposit remains from mass graves into secondary graves sites, and further still re-deposited multiple secondary sites into tertiary sites, disarticulating, commingling, mangling, and crushing the remains (19,30).

As the authors experienced in Bosnia and Herzegovina, pieces of remains in these conditions must be matched not only with profiles of missing persons, but also with one another. Protocols for declaring a set of remains "complete" and potentially returning them to families may vary, e.g., depending on whether a body is missing a finger, or whether a finger is missing a body. When the graves are many years old, ante-mortem identification is unreliable. Human faces will have decayed beyond recognition, and relatives may have difficulty saying with certainty what missing loved ones were wearing or holding on a specific day a decade earlier. In a minority of cases, the quality of DNA obtained from recovered remains might not be high enough to support DNA-based identification (40-42). In addition, in our professional experience, testing in populations with low genetic diversity, and/or on highly degraded remains that yield low-quality DNA, can make DNA-based identification possible, but less informative.

Families and states may want to have remains returned and repatriated, or at least buried in accordance with their religious traditions (43). These burial traditions can be quite significant and important to family members (43). Some traditions maintain that rituals involving the dead body are necessary to ensure peace in the afterlife (44). Traditions in Jewish and Muslim faiths require the burial of bodies and body parts (45). To the contrary, those in the Hindu faith, require cremation (45). When only a sampling of remains from a grave can be identified, it is not possible to say with certainty that all, or even the majority of bodies in a particular grave come from a particular State or tradition, raising serious questions about the appropriate way to dispose of commingled remains.

Resulting Questions:

1. What level of predicted success for identifications is necessary to justify exhumation and identification procedures?

2. What, if any, is the point at which the identification of remains using DNA technologies is impracticable?

3. What level of error is acceptable in identification procedures?

4. What steps are feasible to reduce the error rate?

5. How should ante-mortem/post-mortem-comparison based identifications and eyewitness accounts be incorporated into the identification processes, given their unreliable nature?

6. Given the complexities of DNA-identification analysis, what information should be released to family members?

7. Are genetic counselors needed to interpret the DNA-identification analysis for family members?

8. What level and types of data are necessary to make an identification and/or to inform family members of results?

9. How much of a body is the minimum that may be considered "complete" and/or returned to a family?

10. What is the correct procedure in the event that a misidentification is discovered after a body has been returned to authorities or family members?

11. What proportion of remains from a mass grave must be identified before all bodies therein are presumed to be from and delivered to a particular State?

12. How should funeral rituals be conducted for commingled mass graves containing or likely to contain remains from more than one religious tradition?

Declaring Death

And every September 19th

(soon it will be four years,

can so many years have gone by?)

I will have to ask her again

If there is any news if they have heard anything

And she will say no, thank you very much,

I appreciate your concern,

But her eyes will keep saying

Wordlessly

What they said the very first time

(soon it will be three years –

how is that possible?)

No, thank you very much,

I appreciate your concern,

But I am not a widow

So stay away from me,

Don't ask me for anything,

I won't marry you,

I am not a widow

I am not a widow

Yet.

[Poem by Ariel Dorfman] (46).

Examples and Issues. In the opinion of at least one commentator, it is in the family's objective interest to accept that nearly all of the missing are dead as early as possible to begin the grieving process (47). However, one could legitimately ask whether it is ever appropriate to impose an external notion of "best interests" on family members against their wishes. Indeed, despite indicators to the contrary, many family members of those missing from the conflicts in the Balkans "believe that thousands of the missing could still be hidden by the former warring parties in secret camps or places of detention" (21).

A legal declaration of death can serve family members in numerous ways. It can help to eliminate some guilt associated with moving on with one's life,

and may also provide information necessary to receive life insurance, wills, pensions, and other benefits (48). However, in some circumstances, issuing a death certificate may not soothe families. For instance, following the Srebrenica massacre, many families refused to accept the "paper death" offered in the form of a legal "death attestation" (19). "Families claimed their missing were being written off, that the search for places of hidden detention was inadequate, and that information was no substitute for bodies" (19).

A declaration of death should not prevent the prosecution or punishment of those who fail to honor their legal obligations to come forward with information on missing persons. According to the 1995 First United Nations Congress on the Prevention of Crime and the Treatment of Offenders, Article 17: "Acts constituting enforced disappearance shall be considered a continuing offence as long as the perpetrators continue to conceal the fate and the whereabouts of persons who have disappeared." Article 19 gives the victims of acts of enforced disappearance and their families the right to "obtain redress" and "have the right to adequate compensation, including the means for as complete rehabilitation as possible. In the event of the death of the victim as a result of an act of enforced disappearance... dependents shall also be entitled to compensation." The liability of those concealing remains may be criminal (Article 4) or civil (Article 5), may stem from any measure taken to curtail or impede an investigation (Article 13), and may be enforced against States (Article 13) or individuals (Article 16). However, none of these legal tools answer the questions of precisely when it is appropriate to declare the death of a missing person.

Resulting Questions:

1. When, if ever, is it appropriate to issue a legal death attestation for a missing person?

2. Should similarly situated families be allowed to select different options regarding the timing of the issuance?

3. When, if ever, should a family be issued a legal death attestation against its wishes?

4. If the wishes of the family members have an effect on the issuance of a legal death attestation, how should disagreement among family members be addressed?

5. Who should have control over the process and timing of the issuance of a legal death attestation or certificate for a missing person?

6. Should the availability of benefits affect the timing and process of the declaration of the death of a missing person?

7. What effect, if any, should the issuance of a death attestation have on efforts to locate a missing person?

Other Topics Merit the Consideration

Several other areas of inquiry bear investigation. Numerous questions and issues are raised by the storage of genetic and familial data concerning how it

should be collected and secured, when it must be released, whether, if ever, it can be used for purposes other than direct identification, and what sort of informed consent is necessary in each case. The presence of multiple parties, such as criminal investigators, family associations, government officials, humanitarian organizations, and other national and international groups also creates a host of issues concerning their rights, responsibilities, and interactions with one another. Furthermore, regardless of the amount of planning and training that goes into an effort to identify human remains, some unexpected issue(s) are bound to arise. Investigation of these issues, while is outside the scope of this paper, are critical to facilitate future identification efforts.

Conclusion

A range of legitimate purposes exists for the exploration of human remains in mass gravesites. The prosecution of war criminals and the capture of potential repeat offenders are two such examples. However, the issues and questions raised by this article are specifically related to exploration for the purpose of identifying missing persons. For those, the main guiding principle is easily stated: to assist the families of the missing. The breadth of this principle suggests that the articulation of specific objectives directed at resolving individual issues is required to generate appropriate protocols. While formulating the specifics is necessary for any organization to navigate successfully, regular reference back to the guiding principle should help to light the way.

Acknowledgment

We thank the following individuals, listed in alphabetical order, for their in-depth review of and assistance with this article:

Lloyd M. Deboer, PhD, Dean Emeritus, School of Business, George Mason University, Fairfax, Virginia, USA; Past Board Chairman, Inova Health System, Falls Church, Virginia, USA.

Daniel D. Garner, PhD, Chief Forensic Services Section, International Criminal Investigative Training Assistance Program, Criminal Division, United States Department of Justice, Washington, DC, USA.

Edwin Huffine, MS, Director of Forensic Science Programs, International Commission on Missing Persons, Sarajevo, Bosnia.

Dragan Primorac, MD, PhD, Associate Professor, Medical School at Split University, Split, Croatia.

References

- University of Sydney Library. Holocaust and genocide history. Available from: <http://www.library.usyd.edu.au/subjects/history/hol.html>. Accessed: May 14, 2003.
- Peoria Tribe of Indians of Oklahoma. Native American Graves Repatriation Act (NAGPRA). Available from: <http://www.peoriatribes.com/programs>. Accessed: March 31, 2003.
- United Nations Development Programme. Question: selling of human remains. Available from: <http://www.undp.org.vn/mlist/envirov/c/042002/post145.htm>. Accessed: April 7, 2003.
- Treanor P. Return and repatriation ethics. Available from: <http://web.inter.nl.net/users/Paul.Treanor/return.art.html>. Accessed: March 31, 2003.
- U.S. Army Center for Health Promotions and Medicine, Directorate of Health Promotion and Wellness. Dealing with the stress of recovering human dead bodies. Available from: <http://chppm-www.apgea.army.mil/dhwp/>. Accessed: April 6, 2003.
- Doole J. Stealing the past from under our feet. The Courier, UNESCO [serial online] 2003 April. Available from: http://www.unesco.org/courier/2001_04/uk/doss12.htm. Accessed: March 31, 2003.
- U.S. Customs Service, Department of Treasury. Archaeological and ethnological material from Peru. Federal Register Notice 1997;62:31713-21.
- Promoting Democratic Governance. Available from: <http://www.usaid.gov>. Accessed: March 15, 2003.
- WTC Families.org. Available from: <http://www.wtcfamilies.org>. Accessed: May 14, 2003.
- International Committee of the Red Cross. International Conference on the Missing: opening statement. Available from: <http://www.icrc.org/Web/eng/siteeng0.nsf/iwpList509/4FB6BAECED67D21BC1256CD20039AA.BE>. Accessed: May 14, 2003.
- Asian Human Rights Commission. Seminar on Democratization and Human Rights, November 18-23 1998. Available from: <http://cambodia.ahrchk.net/mainfile.php/19981118/57?print=yes>. Accessed: May 10, 2003.
- Boss P. Mourning the Missing. The New York Times 2001 Dec 2; Sect. 4:14 (col. 4).
- US Committee for Refugees. World refugee survey 2002. Europe. Bosnia and Herzegovina. Available from: http://www.refugees.org/world/articles/wrs02_europe1.cfm#bosnia. Accessed: May 14, 2003.
- Ford P. Brain-drain dilemma for Bosnia. The Christian Science Monitor [serial online]. 2000 February 16. Available from: <http://csmweb2.emcweb.com/durable/2000/02/16/p6s1.htm>. Accessed: May 14, 2003.
- The Srebrenica Justice Campaign. Briefing paper on exhumations May 1998. Available from: <http://dSPACE.dial.pipex.com/srebrenica.justice/briefing.htm>. Accessed: April 7, 2003.
- Humanist Committee on Human Rights (HOM)/Linking Solidarity. Truth and reconciliation. Excuses for the truth – disappearances and their consequences. Requirements to 'truth and reconciliation'. Available from: http://www.linkingsolidarity.org/ls_engels/maneng77.htm. Accessed: April 6, 2003.
- Humanist Committee on Human Rights (HOM)/Linking Solidarity. Truth and reconciliation. Excuses for the truth – disappearances and their consequences. The ethical aspects of reconciliation. Available from: http://www.linkingsolidarity.org/ls_engels/maneng72.htm. Accessed: April 6, 2003.
- Summerfield D. The impact of war and atrocity of civilian populations: basic principles for NGO interventions and a critique of psychosocial trauma projects. Relief and rehabilitation network paper 14. London: Overseas Development Institute; 1996.
- Vollen L. All that remains: identifying the victims of the Srebrenica massacre. Human Rights Center: DNA and Human Rights [serial online]. Available from: <http://www.hrcberkeley.org/dna/allthatremains01.html>. Accessed: April 7, 2003.
- Humanist Committee on Human Rights (HOM)/Linking Solidarity. Truth and reconciliation. Excuses for the truth – disappearances and their consequences Threats to and protection of activists. Available from: http://www.linkingsolidarity.org/ls_engels/maneng81.htm. Accessed: April 3, 2003.
- Harvard University. Project on Justice in Times of Transition. Conference for Associations of Families of Miss-

- ing Persons in the Former Yugoslavia. December 11-13, 1997, Budapest, Hungary. Available from: <http://www.ksg.harvard.edu/justiceproject/icmpreport.htm>. Accessed: April 6, 2003.
- 22 Humanist Committee on Human Rights (HOM)/Linking Solidarity. Truth and reconciliation. Excuses for the truth – disappearances and their consequences. Threats, protection and prevention. Available from: http://www.linkingsolidarity.org/ls_engels/maneng4.htm. Accessed: April 6, 2003.
- 23 Summerfield D. War and mental health: a brief overview. *BMJ* 2000;321:232-5.
- 24 Linking solidarity. Publicity. Available from: http://www.linkingsolidarity.org/ls_engels/manen102.htm. Accessed: April 6, 2003.
- 25 Nesiah V. Overcoming tensions between family and judicial procedures. *International Review of the Red Cross* 2002;84(848):823-44.
- 26 Horton R. Croatia and Bosnia: the imprints of war – I. Consequences. *Lancet* 1999;353:2139-44.
- 27 Haglund WD, Connor M, Scott DD. Human remains. Exhumation process. The archaeology of contemporary mass graves. Available from: <http://www.icrc.org/them/issi.nsf>. Accessed: April 6, 2003.
- 28 Department of Health (US). Families and post mortems: a code of practice (draft for consultation). Available from: <http://www.doh.gov.uk/tissue/familiescode.pdf>. Accessed: April 6, 2003.
- 29 United Nations. Office of the High Commissioner for Human Rights. Geneva convention relative to the protection of civilian persons in time of war. Available from: <http://www.unhcr.ch/html/intlinst.htm>. Accessed: May 4, 2003.
- 30 United Nations. Office of the High Commissioner for Human Rights. Protocol additional to the Geneva Conventions of 12 August 1949, and relating to the protection of victims of international armed conflicts (Protocol I). Available from: <http://www.unhcr.ch/html/intlinst.htm>. Accessed: May 4, 2003.
- 31 Amnesty International. F.R.Y.: Vukovar war crime suspects must be surrendered to The Hague. Available from: <http://web.amnesty.org/library/Index/engEUR700612000?OpenDocument&of=COUNTRIES%5CYUGOSLAVIA?OpenDocument&of=COUNTRIES%5CYUGOSLAVIA>. Accessed: Apr 13, 2003.
- 32 Human Rights Chamber for Bosnia and Herzegovina. Human Rights Chamber Delivers 5 Decisions on Admissibility and Merits and 1 Decision on Further Remedies. Available at: http://www.hrc.ba/english/press_eng/pressEng/november02.pdf. Accessed: March 7, 2003.
- 33 Huffine E, Crews J, Kennedy B, Bomberger K, Zinbo A. Mass identification of persons missing from the breakup of the former Yugoslavia: structure, function, and role of the International Commission on Missing Persons. *Croat Med J* 2001;42:271-5.
- 34 Toole MJ, Galson S, Brady W. Are war and public health compatible? *Lancet* 1993;341:1193-6.
- 35 Hebrang A. Reorganization of the Croatian health care system. *Croat Med J* 1994;35:130-6.
- 36 Mann J, Drucker E, Tarantola D, McCabe MP. Bosnia: the war against public health. *Med Glob Surviv* 1994;1:130-46.
- 37 Horton R. Croatia and Bosnia: the imprints of war – II. Restoration. *Lancet* 1999;353:2223-8.
- 38 Lang S. Challenge of Goodness II: new humanitarian technology, developed in Croatia and Bosnia and Herzegovina in 1991-1995, and applied and evaluated in Kosovo 1999. *Croat Med J* 1999;40:438-45.
- 39 Humanist Committee on Human Rights (HOM)/Linking Solidarity. Truth and reconciliation. Excuses for the truth – disappearances and their consequences. Approaching sources of information. Available from: http://www.linkingsolidarity.org/ls_engels/maneng31.htm. Accessed: April 6, 2003.
- 40 Primorac D, Andelinović S, Definis-Gojanović M, Drmić I, Rezić B, Baden MM, et al. Identification of war victims from mass graves in Croatia, Bosnia, and Herzegovina by use of standard forensic methods and DNA typing. *J Forensic Sci* 1996;41:891-4.
- 41 Alonso A, Andelinović S, Martin P, Sutlović D, Erceg I, Huffine E, et al. DNA typing from skeletal remains: evaluation of multiplex and megaplex STR systems on DNA isolated from bone and teeth samples. *Croat Med J* 2001;42:260-6.
- 42 Gabriel NM, Calloway DC, Reynolds R, Primorac D. Human identification by analysis of mtDNA sequence-specific oligonucleotide probe system. *Croat Med J* 2003;44:293-8.
- 43 Amnesty International. Forensic medicine and ethics: a workshop on the application of forensic skills to the detection and documentation of human rights violations. AI index: ACT 75/12/99. Available from: <http://web.amnesty.org/library/Index/engACT750121999>. Accessed: May 7, 2003.
- 44 Aries P. The hour of our death. Reissue ed. New York (NY): Oxford University Press; 1991.
- 45 The Retained Organs Commission (UK). A consultation document on unclaimed and unidentifiable organs and tissue. A possible regulatory framework. London: UK Department of Health, the Retained Organs Commission; 2002.
- 46 Dorfman A. [A poem with no title]. Available from: http://www.linkingsolidarity.org/ls_engels/maneng5.htm. Accessed: May 5, 2003.
- 47 Sassoli M, Tougas M. The ICRC and the missing. *International Review of the Red Cross* 2002;84:727-50.
- 48 Nesiah V. Overcoming tensions between family and judicial procedures. *International Review of the Red Cross* 2002;84:823-44.

Received: April 17, 2003

Accepted: May 15, 2003

Correspondence to:

Erin D. Williams
Executive Director
Foundation for Genetic Medicine, Inc.
Reston, Virginia, USA
ewilliams@geneticmedicine.org

Questions and Issues Involved in Exhuming and Identifying Bodies from Mass Graves. Even in situations in which survivors and recovery teams are ideally cared for, numerous issues may arise around the exhumation and identification process. These may be technical, pragmatic, ethical, social, and/or legal in nature. This section of the article describes many of these issues, and proposes resulting questions. Answers to those questions, while outside the scope of this paper, warrant future attention.

Locating and Exhuming Bodies. Examples and Issues. From Dust to Dust: Ethical and Practical Issues Involved in the Location, Exhumation, and Identification of Bodies from Mass Graves. Erin D. Williams, John D. Crews CMJ 2003; 44: 251-258. Full Text - PDF. Forensic Science.

Quantitative Polymerase Chain Reaction-based Assay for Estimating DNA Yield Extracted from Domestic Cat Specimens. Development of a Quality, High Throughput DNA Analysis Procedure for Skeletal Samples to Assist with the Identification of Victims from the World Trade Center Attacks. Mitchell M. Holland, Christopher A. Cave, Charity A. Holland, Todd W. Bille CMJ 2003; 44: 264-272. Full Text - PDF.

Specific Quantification of Human Genomes from Low Copy Number DNA Samples in Forensic and Ancient DNA Studies. For centuries, dead bodies have been wrapped in shrouds, placed inside coffins, buried below ground, or cremated. Soon, residents of Washington state will have another option: To turn a loved ones' remains into composted soil for use in the garden. The new rule, which allows for "the contained, accelerated conversion of human remains into soil" will go into effect in May 2020, the first of its kind in the US. The news is exciting for a startup called Recompose, which aims to provide consumers with a body-composing service as an alternative to cremation (by far the most popular death ritual practiced in Washington today). In order to accelerate the natural decomposition process, Recompose plans to put corpses into steel vessels, where they'll stay for a month. We all know, gender inequality has been persisting in the west for the last at least 2000 years. And, while the cost of living has been rising steadily in the first 50 years after WWII in industrialized countries, it has been rather stagnant over the last couple of decades. To the contrary, in some cases - US, Europe - a rather deflationary trend has appeared. A clear sign for it, is negative interest rates in many industrialized countries. So, the NYT is trying to make you believe what isn't - all to justify their "prediction" of a massive population reduction; to make you get used to the diabolical covid-plan - and perhaps to sow just a little bit of fear.