



Physical Anthropology Section – 2005

H48 Resolving Commingling Issues In Mass Fatality Incident Investigations

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Attendees will gain an understanding of the forensic and ethical issues pertaining to commingled remains from mass fatality incidents. The concept of a triage station in the disaster morgue operation will be presented. Additional concerns, such as the decision to identify all remains or all victims and the impact of commingling on the notification of identification and release of remains to family members, are examined.

This presentation will impact the forensic community and/or humanity by providing the forensic community an understanding of the role of the triage process in managing mass fatality incidents.

Mass fatality incidents often expose human remains to a variety of factors causing fragmentation, thermal modification, and commingling. Resolving the complexities of identification and re-association of highly fragmented remains recovered from disasters requires not only the use of DNA technology but the application of certain management principles in morgue operations. Establishing a triage station to sort remains before processing by forensic specialists is an effective way to categorize remains based on their potential for identification and re-association. This paper examines the use of triage in resolving issues of commingling, identification, and remains re-association, and explores some issues related to next-of-kin considerations.

Identifying fragmented and commingled human remains from mass disasters involves both scientific methods and ethical considerations. The role of DNA technology gives forensic scientists powerful tools to identify and re-associate remains that would have been previously considered unidentifiable. However, the existence of these tools does not argue for their exhaustive application. Before the processing of remains, thought should be given to whether the focus will be on identifying all the victims or on identification of all remains. This decision is based on the degree of fragmentation, the family and public expectations, the quality and quantity of antemortem information, and the resources available. Complete or nearly complete remains (where the ratio of remains to victims is near 1:1) demand the identification of all remains because, in this case, it refers effectively to all victims. Typically, dental and fingerprint methods are used to identify whole remains and the process is completed fairly quickly and at relatively low cost.

In the case of high fragmentation, the number of remains per victim increases which influences decisions about the use of the limited resources of personnel, time, and funds. At the disaster site, fragmented remains are by definition commingled. Only remains connected by anatomical tissues are considered a single specimen. Proximity of remains cannot be used as a method of re-association; each remain must be examined on their own for identification.

In the morgue operation, developing and applying a probative index system allows triage personnel to systematically classify human remains according to their identification potential or investigative value. A categorization system relates the number of positive and presumptive identifying features to the potential for a DNA, dental, fingerprint, or medical identification. The probative index needs to be incident-specific, as factors such as availability and accuracy of antemortem information can impact the value of data.

Triage brings an additional benefit for understanding taphonomic processes related to the disaster. Because it is the only morgue section staffed by a multidisciplinary team, the triage station can be used to observe patterns in the types of remains as they relate to search areas. These patterns could suggest improper recovery techniques and thus assist in guiding search and recovery efforts. Effective triage serves as a communications link between search and recovery and the morgue, one that can minimize the potential for recovery-induced commingling. In addition, patterns may also help elucidate some aspects of incident causation.

Resolving the biological issues addresses only one part of the overall problem commingling represents. Commingling also impacts the family members of the victims, particularly in the areas of notification of identification and return of remains. Current practice dictates that family members of the deceased are allowed to choose when and how often they are contacted about the identification of remains. Because the DNA identification (and thus the re-association) often takes weeks or months, families often choose to be notified of the initial identification and then once again at the completion of the identification and re-association process. Families rarely choose to be notified each time a specimen is identified.

In nearly all recent aircraft accidents involving fragmented remains there have been remains that are unidentifiable, despite the liberal application of DNA technology. Often referred to as common tissue or group remains, they represent tissues potentially from all victims. Current practice dictates that the family members, as a group, decide upon the final disposition of these remains.



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