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Standard for Personal Identification in Forensic Anthropology

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410 North 21st Street
Colorado Springs, CO 80904

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Foreword

This document was developed to provide guidance to forensic anthropologists who assist with the process of personal identification. While the legal determination of a personal identification, signified by placing an individual's name on a death certificate, is the purview of the medicolegal authority, forensic anthropologists are consulted to assist in this process. Forensic anthropologists contribute to a personal identification through scientific identification methods or by providing corroborative evidence from skeletal analyses.

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This document was revised, prepared, and finalized as a standard by the Anthropology Consensus Body of the AAFS Standards Board. The draft of this standard was developed by the Anthropology Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science.

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, asb@aafs.org or 401 N 21st Street, Colorado Springs, CO 80904.

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Keywords: *forensic anthropology, personal identification, scientific identification, biological profile*

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Standard for Personal Identification in Forensic Anthropology

1 Scope

This standard provides approaches for establishing a personal identification in forensic anthropology using both scientific identification methods and contributory anthropological findings.

This standard does not address identification of living individuals.

2 Normative References

There are no normative reference documents.

3 Terms and Definitions

For purposes of this document, the following definitions apply.

3.1
anomaly
A ~~skeletal~~ deviation from ~~normal; typically~~typical skeletal anatomy; often nonlethal or nondisruptive to function; it may or may not have clinical or forensic significance.

3.2
biological profile
The description of an individual's estimated age, sex, ancestry/population affinity, and living stature derived from an anthropological (skeletal) analysis.

3.3
comparative medical imaging
An identification technique involving the direct comparison of antemortem and postmortem medical imaging to include radiographs, computed tomography (CT), magnetic resonance imaging (MRI) and other modalities.

3.4
facial approximation
An investigative technique combining anatomical knowledge, artistic capability, and forensic anthropological evidence to render an estimate of an individual's facial appearance in life.

3.5
pathological condition
Skeletal abnormality resulting from disease processes.

3.6
personal effects
Property, including clothing, jewelry, wallets, and other items found near/associated with an individual.

3.7
personal identification
The association of a set of remains to a known individual.

3.8
scientific identification
The process of systematically comparing antemortem and postmortem biological data to facilitate a personal identification.

3.9
skull-photo superimposition
An ~~exclusionary~~ technique involving the superimposition of a facial photograph or video of a known individual with an unidentified skull.

3.10
surgical implants
Devices or tissues that are surgically placed.

4 Requirements

4.1 General

Forensic anthropology practitioners contribute to personal identification in two ways. The first is through scientific identification methods. The second is through methods that contribute to an identification by including or excluding possible candidates (such as use of the biological profile).

The practitioner shall record, document, and describe observations and data used in the process ~~of identification.~~ All documentation should be of sufficient detail to allow for independent review and interpretation.

When ~~appropriate,~~ forensic ~~anthropology practitioners shall consult other~~anthropologists are presented with identification data that are either insufficient for or beyond the scope of anthropological assessment, experts including odontologists, pathologists, radiologists, or other imaging experts shall be consulted and/or cases shall be referred.

4.2 Procedure

4.2.1 Methods of Scientific Identification

4.2.1.1 General

The goal of scientific identification methods is to systematically establish the consistency of antemortem and postmortem data in sufficient detail to conclude that they are ~~from the same individual to the reasonable exclusion of other possibilities~~or are not from the same individual. Analysts should consider possible internal and external sources of bias and establish a process to mitigate these influences prior to conducting scientific identifications.

4.2.1.2 Comparative Medical Imaging

Identification by comparative medical imaging shall use antemortem imaging from the medical/dental records of the suspected decedent, and postmortem imaging that simulate the

clinical imaging in scope and projection. ~~The practitioner shall perform a comparison, looking for consistencies and inconsistencies in the imaging, for example:~~The forensic anthropologist should examine the postmortem radiographs separately from the antemortem radiographs prior to making the comparison between them.

The practitioner performs a comparison, looking for consistencies and inconsistencies in the available imaging. A comparison should involve the following: examine one set of imaging (antemortem or postmortem) independently; note features/characteristics that may be useful for comparison; examine second set of imaging; record consistencies and inconsistencies between the sets of imaging that will be used for reporting. Examples of features/characteristics that may be useful for comparison may include:

— bone morphology (e.g., vertebral spinous process, paranasal sinuses, osteophytes);

— trabecular patterns;

— skeletal anomalies and pathological conditions;

— orientation and placement of foreign materials, including bullets, shrapnel, surgical implants, or intervention materials such as sutures or sternotomy wires;

— dental features, including morphology, restorations, pathological conditions, or missing teeth.

The antemortem and postmortem imaging shall correspond with sufficient detail to conclude that they are from the same individual with no ~~unexplainable differences. There is no~~differences that cannot be explained by variation in imaging angulation, postmortem artifact, and/or changes (i.e. developmental, degenerative, medical/dental interventions) that occurred between the antemortem and postmortem imaging.

Currently, there are no widely accepted established minimum number of points of concordance or a threshold for the quality of consistencies necessary to support the findings. Existing data on morphological variation across populations is insufficient for statistical statements of the strength of identification to be calculated in most cases. The number of points of concordance may vary depending on the region of the skeleton being evaluated or foreign materials being compared.

4.2.1.3 Serial Numbers on Surgical Implants

Identification using surgical implants shall involve comparing the manufacturer's unique serial numbers on the device to available antemortem information, including: medical records, local/national registries, or manufacturer databases. It is important to note that some surgical implants may only contain a lot number which is not unique to an individual and thus may only be useful in narrowing the search or as one of multiple lines of evidence (see 4.2.2.4).

4.2.2 Anthropological Findings Contributing to Identification

4.2.2.1 General

The data and records produced by forensic anthropology practitioners can contribute to a more comprehensive form of personal identification made by the appropriate medicolegal authority (via a preponderance of evidence) or can lead to likely candidates for an identification comparison.

These approaches are not sufficient for an identification alone, but may be used as one of multiple lines of evidence to support a personal identification.

4.2.2.2 Biological Profile

The biological profile can be compared to documented information or databases of missing persons. Based ~~on congruence with~~upon consistencies or inconsistencies between the biological profile~~, individuals~~ and missing persons information, candidates for identification may be included or excluded from further consideration. A biological profile consistent with documented information about the presumptive individual can provide corroborative evidence ~~of~~to support a personal identification~~. An~~; however, it shall not be used in isolation as a basis for personal identification ~~shall not be made from this information alone~~.

4.2.2.3 Potentially Individualizing Features

~~Individualizing~~Potentially individualizing features~~, including~~ are skeletal or dental characteristics that may assist with the identification of the individual should antemortem records and/or imaging become available that can support an inclusion or exclusion of a potential identification. These characteristics may include but are not limited to pathological conditions, anomalies ~~and antemortem lesions (fractures, lytic lesions, etc.) may also be useful for identification. Based on congruence with antemortem records, individuals may be included or excluded from futher consideration. Individualizing,~~ and antemortem trauma. Potentially individualizing features consistent with the documented information about the presumptive individual can provide corroborative evidence of identification. ~~An~~These features shall not be used in isolation as a basis for personal identification ~~shall not be made from this information alone.~~if no antemortem imaging is available. If the antemortem medical records are sufficient for comparative medical imaging, refer to 4.2.1.2.

4.2.2.4 Lot Numbers on Surgical Implants

Lot numbers are assigned to identify a particular group, shipment, or lot of material from a manufacturer and are thus not unique to an individual. Since registries may not provide adequate information to associate the surgical implement with a particular individual, lot numbers may provide corroborative information but shall not be used in isolation to support a personal identification~~. An identification shall not be made from this information alone~~.

4.2.2.5 Skull-photo Superimposition

Skull-photo superimposition (e.g., photographic or video) may also be useful for identification in limited circumstances. Congruence between structures visible in both the antemortem image and the skull can provide corroborative evidence of identification. An identification shall not be made from this information alone.

4.2.3 Considerations and Adjustments

4.2.3.1 Personal Effects and Other Evidence

Information obtained from physical evidence and personal effects that are associated with human remains may contribute to the location of potential associations, or support a personal identification. Analysts should consider possible internal and external sources of bias and establish a process to mitigate these influences prior to conducting analyses.

4.2.3.2 Facial Approximation

The practice of facial approximation is intended to capture public attention in regard to a case, and to suggest persons to whom the remains might belong when all other scientific leads have been exhausted. Facial approximation shall not be used as a means of personal identification.

4.2.3.3 Individualizing Features

Consideration of individualizing features should take into account the populational frequencies of particular skeletal features, if known. The temporal interval between the records shall also be considered and assessed in the context of the comparison.

4.2.3.4 Medical Records

Medical records in the absence of medical imaging should not be used as a single line of evidence for an identification as they are not necessarily accurate, current, or comprehensive representations of an individual's medical or dental history.

4.2.3.5 Databases

Forensic anthropology practitioners with appropriate authority and access should contribute the results of their analyses of unidentified individuals to relevant databases of missing and unidentified persons, or provide the information to an agency that does have authority and access (e.g., NamUs, NCIC).

4.2.4 Reporting

The content of the report shall include a summary of the methods and comparative findings used to form an opinion regarding identification. The supporting documentation for the report shall allow for independent replication and verification of the work performed and the conclusions drawn. Documentation of observations shall include a written description and when available, supporting images (e.g., photographic, radiological, sketches, and/or diagrams). When scientific identification methods (see 4.2.1) are used, opinions and/or recommendations can include identification, exclusion, and inconclusive. When anthropological findings contributing to a personal identification (see 4.2.2) are used, opinions can include consistent with, inconsistent with, and inconclusive.

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