OSAC REVIEW / SPRING-SUMMER 2025 (OSAC = Organization of Scientific Area Committees)

NAME OSAC UPDATE #20: ANSI/ASB Best Practice Recommendation 094, 1st Edition, 2021

Postmortem Impression Recovery, Guidance and Best Practices for Disaster Victim Identification

This best practice recommendation was drafted by the Medicolegal Death Investigation Disaster Victim Identification Subcommittee of OSAC. It completed the standards development process in the Disaster Victim Identification Consensus body of the AAFS Standards Board (ASB). As a best practice document, these are vetted recommendations but not requirements.

(Like all OSAC developed Standards, Best Practices, and Guides, these are voluntary and separate from NAME standards and accreditation.)

This is a brief summary of *ANSI/ASB Postmortem Impression Guidance and Best Practices for Disaster Victim Identification*, and as such may leave out or misinterpret important details. **See link to full document (below)**. Also the AAFS has developed checklists to supplement ASB documents. The link to the checklist is copied below. (This particular checklist is basically a recap of the entire document in outline form.)

As part of the standards development process, this standard was subject to an open comments period with adjudication. This is a link to the received comments and adjudication:

https://www.nist.gov/document/ansiasb-bpr-094-comment-adjudication

Value: Useful in ensuring that friction ridge (fingerprints, palms, soles) impression recovery is optimized. While this document was created specifically for disaster victim identification, many of its principles and techniques are applicable to daily use in a medical examiner's office, especially when obtaining impressions in decedents with extensive trauma, burns, or exhibiting decomposition. This guide would be a good general training document, as well as part of a mass fatality plan. The flowchart on

page 9 (Annex A) could be posted in the morgue in areas where fingerprints are obtained.

Foreword:

Friction ridge analysis is a rapid, reliable, and cost-effective means of identification. Many databases have been expanded to include palm prints and supplemental prints. In a mass fatality setting, potential fingerprint identifications can be presented to an identification board for reconciliation. Best Practices for submission of impressions for automated searching is available in another document (previously reviewed as part of this series): ANSI/ASB Best Practice Recommendation 007, Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System Databases (AFIS).

Postmortem Impression Collection:

- Recommends using a "clean station" for things such as an administrative work area and PPE, and a "Dirty station" where impressions are obtained, and there are tools/equipment for reconditioning the remains.
- Preliminary information to be obtained includes the circumstances surrounding the death and remains recovery, whether antemortem records are available, applicable laws in the jurisdiction, and any mutual agreements among practitioners about things such as labeling and methods used.
- Locating, cleaning, and inspecting skin with friction ridges:
    - Sort through tissues to identify all useable friction ridge skin
    - Cleaning can be done using soap and warm water
    - Inspect and identify any damage
    - With extreme rigor it may be necessary to sever the flexor tendons or remove hands, or fingers (if no other options are available)
    - Photograph before using any methodology that might destroy skin
- Recondition damaged skin:
    - Injections can be used for macerated/decomposed skin
    - Use degloved skin, dried, and placed over an examiner's finger

    - The boiling technique, submerging the hand in boiling water for 5-10 seconds to elevate ridge detail, or using a sponge soaked in heated water.
- Charred/burned skin:
    - Sever the flexor tendons if hands are clenched
    - Break off outer skin at the tips of the fingers, attempt to print dermal skin
    - Can attempt the boiling technique as a last resort
- Mummification:
    - Use a solution of sodium hydroxide and sodium bicarbonate, to rehydrate, requires 6-12 hours or more.
    - Sodium hydroxide can be used to rehydrate but is more destructive than the combined solution (above), requires a few hours with close monitoring.
    - Detergent rehydration can take hours or days.

Methods to Record Postmortem Impressions:

- Biometric Scanning Device—great variation in capability, and ease of use. Many scanners require electrostatic connectivity produced by a living individual and therefore don't work well on deceased individuals.
- Powder and adhesive lifter technique
- Photography: capture 1:1 images at 90°
- Casting techniques
- Ink/paper: Can be difficult postmortem due to rigidity, and the supine examination position since palms/fingers tend to be down

Postmortem Footprints:

In high energy crashes and fire scenes the skin on the feet may provide the best protected friction ridges. Antemortem footprint records are rarely available, but it is possible to process items of evidence or the floors of a person's residence to obtain them. (Automated searching of footprints is typically unavailable.) However; if the hands and fingers have severe degradation and other means of identification such as dental comparison seem unlikely, it is advisable to obtain footprints.

Record Retention:

- All hard copies should ultimately go to the medicolegal authority with jurisdiction
- Best practice is to retain a digital copy, at a minimum of 500ppi in a lossless file format

See Annex A---Postmortem Recovery Workflow

Full Document:

https://www.aafs.org/asb-standard/postmortem-impression-recovery-guidance-and-best-practices-disaster-victim

Checklist:

https://www.aafs.org/research-resources-featured-standards-resources-and-training/checklists