

Technical Working Group on Biological Evidence Preservation Project Briefing

American Academy of Forensic Science (AAFS)
Annual Meeting
Thursday, February 20, 2014

The State of Biological Evidence Preservation

“In order for qualified forensic science experts to testify competently about forensic evidence, they must first find the evidence in a usable state and properly preserve it.”

- NAS Report

What does your evidence room look like?

“Bad” Evidence Rooms



L

“Bad” Evidence Rooms



LAW

“Good” Evidence Rooms



LAW E

07/22

“Good” Evidence Rooms



Group Charge

To create best practices and guidance to ensure the integrity, prevent the loss, and reduce the premature destruction of biological evidence --
after collection through post-conviction proceedings.

TWG Members

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Taskforce for Wrongful Convictions,
New York State Bar Association

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Yvette Sanchez-Owens, Commanding
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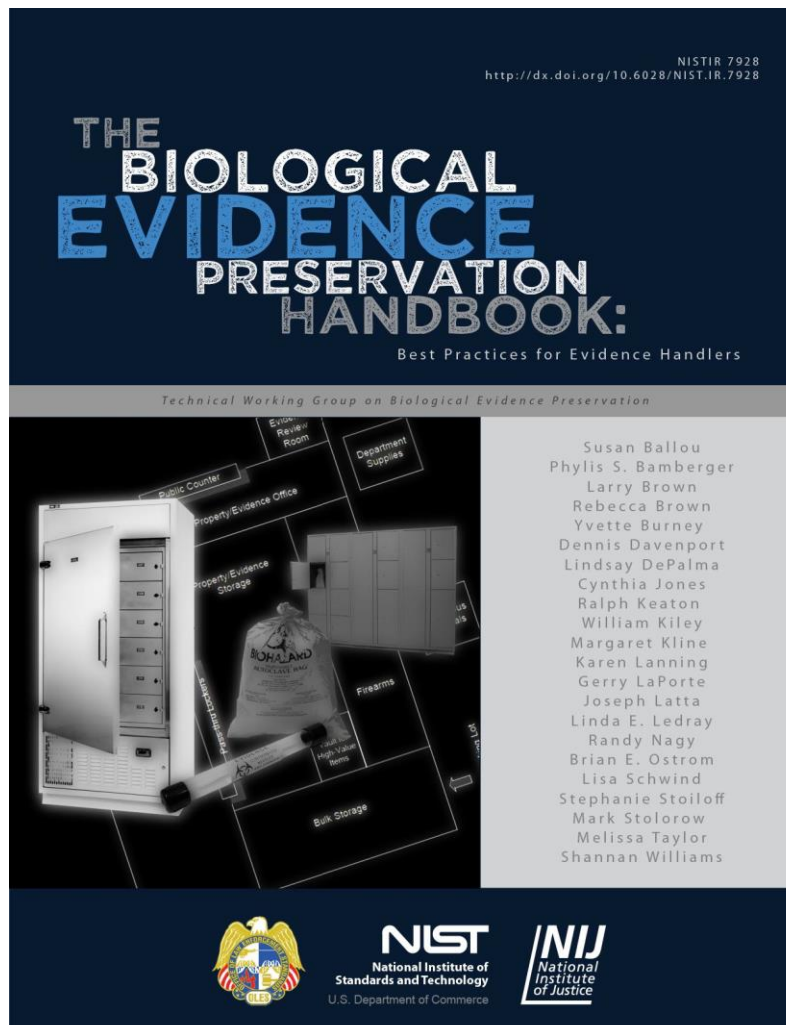
Stephanie Stoiloff, Commander,
Forensic Services Bureau, Miami-
Dade Police Department

Shannan Williams, Associate, Forensics
Program, NIST/OLES

Group Outputs

1. ***The Biological Evidence Preservation Handbook: Best Practices for Evidence Handlers*** (published in April 2013)
2. ***TWG Website:***
<http://www.nist.gov/oles/forensics/bioev.cfm>
3. ***Biological Evidence Preservation: Considerations for Policy Makers*** (To be released in Spring 2014)
4. ***RFID Technology in Forensic Evidence Management: Assessment of Barriers, Benefits, and Costs to Implementation*** (To be released in Spring 2014)

The Biological Evidence Preservation Handbook: Best Practices for Evidence Handlers



NISTIR 7928
<http://dx.doi.org/10.6028/NIST.IR.7928>

Published April 2013

Available at:

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Retaining Biological Evidence – Key Recommendations

I-1: All persons who have responsibility for the intake and/or storage and disposition of biological evidence should take online, in-classroom, or other forms of training on evidence management.

I-2: Prior to a property and evidence custodian accepting biological evidence, it should be clearly marked and labeled by the submitter as biological evidence, allowing it to be tracked within the evidence management system and stored appropriately from intake through disposition.

Retaining Biological Evidence – Key Recommendations

Table I-2: Summary of Biological Evidence Retention Guidelines for Crime Categories

Crime Categories (NIBRS*)	CASE STATUS			
	Open†	Charges Filed	Adjudicated	Unfounded/Refused/Denied/No Further Investigation
Homicide Offenses	Retain indefinitely	Retain indefinitely	At a minimum, retain for the length of incarceration‡	Dispose of upon receipt of authorization§
Sexual Offenses	At a minimum, retain for the length of the statute of limitations§	Retain pending adjudication§	At minimum, retain for the length of incarceration‡	Dispose of upon receipt of authorization§
Assault Offenses, Kidnapping/Abduction, Robbery			Dispose of upon receipt of authorization§	
All Other Group A & B Offenses				

* The Federal Bureau of Investigation’s National Incident-Based Reporting System (NIBRS) classifies 22 types of offenses as Group “A” crimes and 11 types of lesser offenses as Group “B” crimes. Table I-2 uses the NIBRS crime categories.

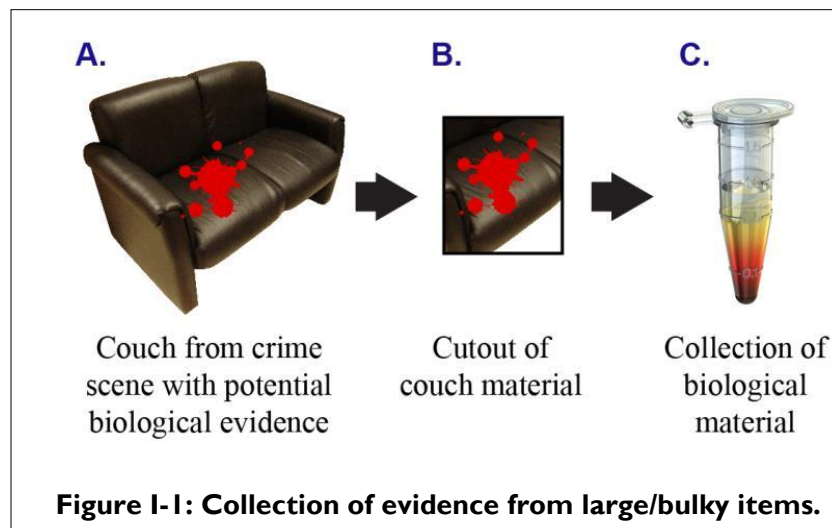
† Cases in which someone was found not guilty after criminal proceedings and additional suspects have not yet been identified or charged should follow the same guidance as open cases.

‡ Statutes regarding the disposition of biological evidence from homicide, sexual offenses, and other crime categories vary from state to state. Almost all states that have statutes require that such evidence be held for the period of incarceration; a few states require that the evidence be held for the period of probation, parole, or registration as a sex offender. Custodians should check their state statutes. Written authorization for disposal should be obtained from the assigned case investigator. (Note: If the assigned investigator is no longer employed by the agency, a designated investigator should give written approval.)

§ Section V provides further guidance regarding the disposition process.

Retaining Biological Evidence – Key Recommendations

I-3: Property and evidence custodians should consult with investigators, laboratory analysts, and, when appropriate, prosecutors to determine whether only representative sample(s) should be retained in situations in which samples are too large or too costly to store. Property and evidence custodians, investigators, laboratory analysts, and prosecutors should discuss situations in which prosecutors should be consulted. These decisions should not be made exclusively by property and evidence custodians.



Packaging and Storing Biological Evidence – Key Recommendations

III-1: In tandem with state or local legislatures, managers in law enforcement and relevant stakeholders should advocate for additional resources and funding to ensure the integrity of biological evidence through prioritizing the packaging, storage, maintenance, and security of the evidence in their jurisdictions.

III-3: Each law enforcement agency should develop a protocol for standardizing evidence packaging materials and customizing shelving to allow for more efficient retrieval of evidence stored in property rooms.

III-5: Each law enforcement agency should have a policy and procedure for the storage of biological evidence.

Short-Term Storage Conditions

Type of Evidence	Frozen	Refrigerated	Temperature Controlled	Room Temperature
Liquid Blood	Never	Best	Less than 24 hours	
Urine	Best	Less than 24 hours		
Dry Biological Stained Item			Best	Acceptable
Wet Bloody Items (if cannot be dried)	Best	Acceptable	Less than 24 hours	
Bones	Acceptable		Acceptable	Acceptable
Hair			Best	Acceptable
Swabs with Biological Material		Best (wet)	Best (dried)	
Vaginal Smears			Best	
Feces	Best			
Buccal Swabs			Best	Less than 24 hours

<http://www.nist.gov/oles/forensics/upload/Works-Cited-doc-BioEvidence-Handbook.pdf>

Long-Term Storage Conditions

Type of Evidence	Frozen	Refrigerated	Temperature Controlled	Room Temperature
Liquid Blood	Never	Best		
Urine	Best			
Dry Biological Stained Items			Best	
Bones			Best	
Hair			Best	Acceptable
Swabs with Biological Material			Best (dried)	
Vaginal Smears			Best	
Feces	Best			
Buccal Swabs			Best	
DNA Extracts	Best (liquid)	Acceptable (liquid)	Acceptable (dried)	

<http://www.nist.gov/oles/forensics/upload/Works-Cited-doc-BioEvidence-Handbook.pdf>

To Freeze or Not to Freeze Biological Evidence

TWG did not to recommend that all biological evidence be frozen for the following reasons:

- 1. Scientific research and current trends in DNA analysis.** Studies have demonstrated the highly stable nature of DNA and technology has become more sensitive, enabling analyses of smaller amounts of DNA.
- 2. Evidence is often held in multiple locations throughout it's lifecycle.** This makes it extremely difficult to maintain the evidence in a constant frozen state and scientific evidence shows that thawing and re-freezing biological evidence degrades the DNA and hinders analysis.
- 3. Lengthy retention times required by legislation make freezing all biological evidence types extremely costly.** Given the marginal benefits and potentially destructive nature of freezing and thawing cycles, the cost of freezing for indefinite periods of time may be an unnecessary expense for resource strapped jurisdictions.

Tracking and Chain of Custody – Key Recommendations

IV-3: Yearly inventories should be conducted to verify that the evidence in the property room is present and in its specified location.

IV-5: Each agency must develop an identification system so that each item of evidence has a unique identifier. Evidence items created from analysis or separated from the original evidence item should be documented to show the linkage between it and its parent.

IV-11: Jurisdictions should work to assess and improve communications regarding forensic evidence by developing consistent procedures and packaging guidelines and by integrating evidence-tracking systems across locations.

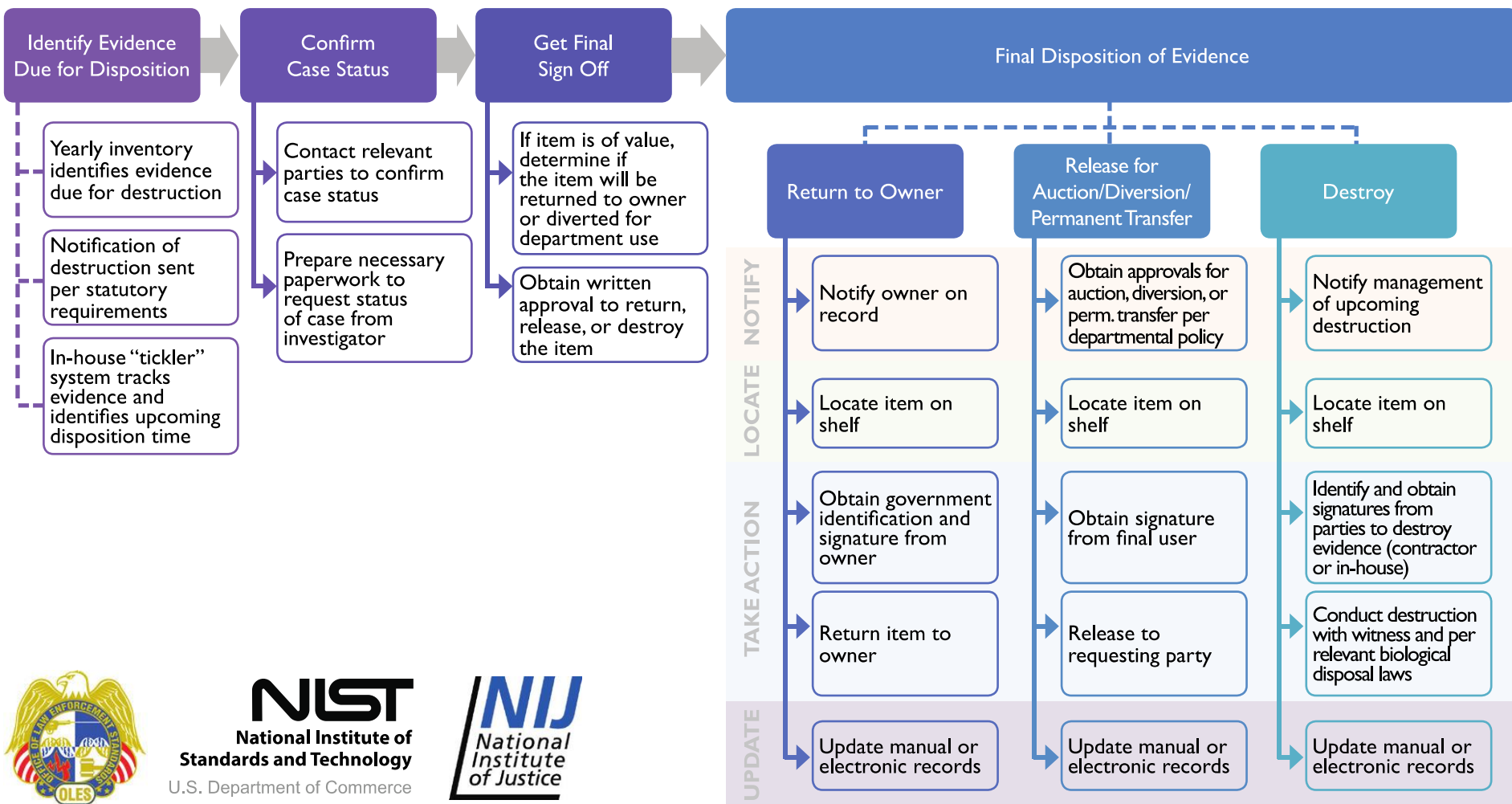
Biological Evidence Disposition – Key Recommendations

V-1: Case status reviews should be conducted at least once a year to determine eligibility for disposition of evidence containing biological evidence.

V-2: Each agency should designate those authorized to sign off on the disposition of biological evidence within a jurisdiction.

V-4: An evidence disposition process should be part of each agency's policy and procedures.

Biological Evidence Disposition – Key Recommendations



Group Outputs

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Biological Evidence Preservation: Considerations for Policy Makers

Purpose of Providing Legislative Guidance

- Law compels compliance more than guidelines/best practices alone
- Statutory requirements elevates the importance of proper handling among various holders of evidence
- Legislation addresses consequences for denial of access

Audience

- Policy makers, law enforcement management, property and evidence management

Release Date

- Spring 2014

Biological Evidence Preservation: Considerations for Policy Makers

Topics Covered

- State Taskforces/Commissions
- Biological Evidence Definition
- Retention Guidelines: Crime Categories and Automatic vs. Qualified
- Management
- Early Disposition
- Ramifications for Denial of Access

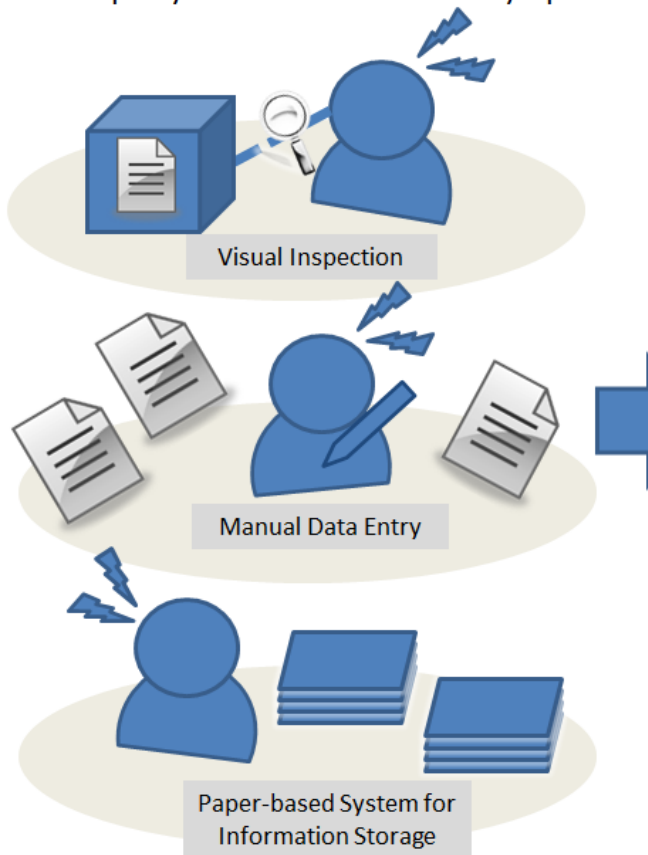
***Guidance is informed by in depth analysis of current legislation in 43 states and the District of Columbia**

Group Outputs

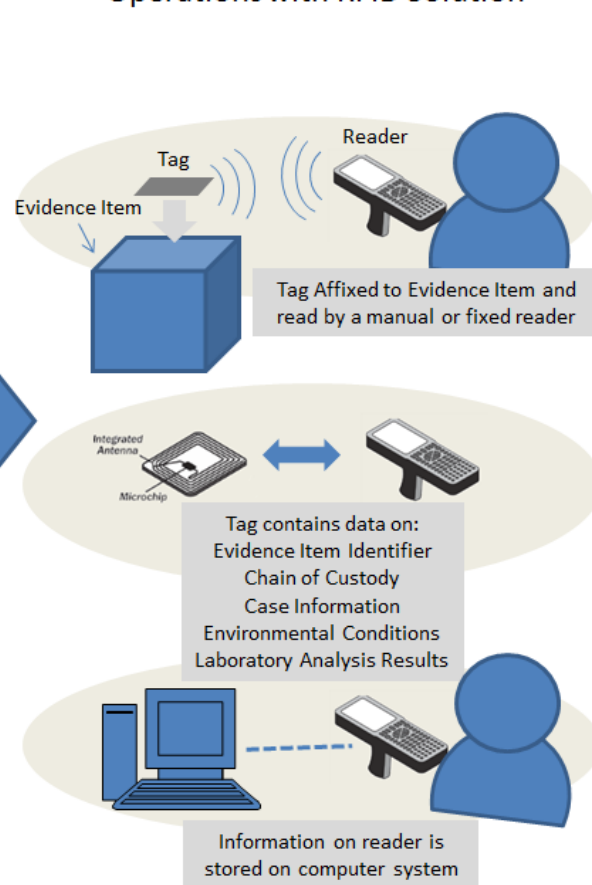
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Automated Identification Technology (AIT) in Forensic Evidence Management

Current Property and Evidence Inventory Operations



Operations with RFID Solution



Questions?

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