



Focus on Forensics

DECEMBER 2016

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SPECIAL POINTS OF INTEREST:

- Learn about the passage of SB 63 and what it means to survivors and law enforcement
- Explore why hair examinations and comparisons are performed
- Understand why victim GSR kits aren't analyzed

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SB 63 - The SAFE Act

Sexual assault kit backlogs have been in the national news for several years and Kentucky is included in those states working to address the problem. Senate Bill 63 passed unanimously in both the Senate and the House and was signed by Gov. Matt Bevin on April 8, 2016. This bill is aimed at tackling the sexual assault kit backlog in Kentucky and preventing such a backlog from occurring again. The provisions of this bill impact not only the laboratory that is responsible for testing the kits but also law enforcement agencies, hospitals and sexual assault programs throughout the Commonwealth. This article highlights the major requirements of the bill that will impact the agencies responsible for these kits.

A 2015 report by the state auditor estimated that there are approximately 3300 untested sexual assault kits across the state. In the April Focus on Forensics newsletter it was announced that the laboratory had received grant money to have those kits analyzed and testing is currently underway at a contract laboratory. The focus is now on preventing kits from falling through the cracks in the future and making sure every kit needing analysis is submitted to the laboratory in a timely manner.

Survivor's rights played an integral part in the drafting of this legislation. Anyone who is a victim of sexual assault has the right to an examination free of charge and it is their decision whether law enforcement will be notified. If a victim chooses to file a report then the hospital must notify law enforcement within 24 hours. If the victim decides not to report at that time the medical facility must store the kit for at least one year. Safeguards also needed to be put into place so victims can be assured they will be notified throughout the entire process. The law was written to ensure that the victim will have information about the process and be notified every step of the way.

In regards to law enforcement officers, the law focused on officer training in an effort to better prepare officers for sexual assault investigations. Beginning January 1, 2017 any law enforcement basic training course in Kentucky will include at least 8 hours of training relevant to sexual assault. Also beginning January 1st, the Kentucky Law Enforcement Council will establish a 40 hour sexual assault investigation training course. By January 1, 2019 each agency will have officers trained in this course with the number of officers determined by the size of the agency as follows:

5 or fewer officers – 1 trained officer

5-30 officers – 2 trained officers

30 officers or more – 4 trained officers

Additional requirements for law enforcement include having a written policy and procedures manual in place by January 1, 2017 that will define the responsibilities of the agency in regards to the new law. Those responsibilities include the following: an agency must take a kit into custody within five days of being notified by the hospital that a kit is available for retrieval, if the incident occurred outside an agency's jurisdiction that kit will be transferred to the appropriate investigating agency within 10 days, and the kit will be transferred to the KSP laboratory within 30 days of receipt by the agency.

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Hair Examination & Comparison: Why??

You may have noticed that hair comparisons have been in the news a lot lately. The reason is the FBI, the Department of Justice, the Innocence Project, and the NACDL recently conducted a review of FBI cases involving microscopic hair comparison evidence prior to the advent of DNA testing. The review found that most of the FBI examiners exceeded the limits of the science of hair comparison in their testimony. “It is important to note that microscopic hair comparison analysis is a valid scientific technique still conducted by the FBI Laboratory. The science of microscopic hair comparisons [was] not the subject of the review.”¹ (See *FBI/DOJ Microscopic Hair Comparison Analysis Review*¹ and *FBI Testimony on Microscopic Hair Analysis Contained Errors...* on www.fbi.gov for further information.)

The Kentucky State Police Central Forensic Laboratory continues to perform microscopic hair comparison analysis. Let’s examine “why” we do the things we do in hair analysis. When an association is made between a hair standard and an unknown hair, our laboratory reports state that “the microscopic comparison of hair does not constitute a positive means of identification.” This statement is included in our testimony.

Why do we perform hair examinations and comparison?

- We can determine if the material is a hair
- We can determine if the hair is human or animal
- We can often determine the area of the body the hair came from, which may be significant to the case
- We can determine if a hair exhibits characteristics of being naturally shed or forcibly removed
- We can determine if the hair is crushed, impacted, burned, or singed
- In violent crimes, it is usually the victim who is shedding his/her hairs the most; therefore, most hairs found at the scene or on the victim will often be his/her own. This can number in the hundreds! Hair comparison allows us to be more effective in analyzing the evidence that is probative.
- We can determine which roots are suitable for further testing by nuclear DNA
- We can determine which hairs are most probative for mitochondrial DNA testing through comparisons to standards
- Microscopic hair comparison and DNA testing are complementary techniques

We understand the nature of trace evidence transfer, and thus when association of hair may or may not be probative

Why is collection time important?

If someone wants to change their looks, what do they often do? They change their hair! This is one of the reasons why it is important to collect hair standards from victims and suspects at the time an offense occurs. The lapse of time can affect the results of a hair examination.

- Hair analysis is often performed once other routes of DNA analysis are exhausted. Because of the amount of testing and time that biological exams can take, the case may not be considered for hair analysis until a year or more after the offense occurs.

Over the course of time, the hair standards of either the victim or the suspect may change, due to:

Treatment

Balding

“Going gray”

Environmental conditions (such as sun-bleaching or a lack of sun-bleaching because the individual has been incarcerated)

- Collecting the hair standard as soon as possible after the offense will prevent time differences from becoming a factor in the hair comparison exam.

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SB 63 continued

The law enforcement agency must also have a process for notifying the victim about the progress of testing, if a DNA profile is found, if there is a DNA match to other DNA samples, and if the evidence is to be destroyed.

The law now mandates how quickly that kit will be analyzed once it is received by the KSP Forensic laboratory. By July 1, 2018 the laboratory is required to have the average turnaround time for sexual assault kits to be less than 90 days. By July 1, 2020, that turnaround time is to be less than 60 days.

The laboratory was given 4.5 million in funding for equipment and personnel which is already being spent to help provide the laboratory with the resources it needs to meet these deadlines. The Kentucky State Police will be tracking data about the number of kits submitted to law enforcement agencies and to the lab and the number of those kits tested.

New rules also apply to the retention of sexual assault kits so that every victim has an opportunity to have their kit tested. Evidence collected as a result of a sexual assault examination CANNOT be destroyed unless specific criteria are met. No evidence suitable for DNA testing can be destroyed prior to trial unless the evidence has been in custody over 50 years. Or if the evidence has been in custody over 10 years and the prosecution has determined that the defendant will not be tried then it could possibly be destroyed. However contacting the prosecutor before destroying any evidence is the best practice to make sure kits have been tested if needed before destruction.

Any sexual assault kits which have not been subjected to examination shall be submitted to the KSP laboratory by January 1, 2017. If your agency has sexual assault kits that are needing analysis or you are not sure if they have been submitted in the past contact Sally Edwards or Whitney Collins to confirm what should be done with the kits. Their contact information can be found on page 7.

The illustration to the right highlights the major impacts the law will have for all agencies.

A complete summary of the statutory provisions of the law can be found on page 4.

SAFE Act

Comprehensive Sexual Assault Forensic Evidence Reform

After a 2015 report by the state Auditor found more than 3,000 untested sexual assault kits in the Commonwealth, the 2016 Kentucky General Assembly passed a law that seeks to prevent a backlog of untested kits from ever happening again.

Key Elements of the New Law

Requires All Kits be Submitted and Tested

24 Hours Hospitals must report a kit to law enforcement

5 days Law enforcement must retrieve the kit

30 days Law enforcement must submit the kit to the lab

Lab must reduce average time for testing kits
90 days by 2018
60 days by 2020

More Training, Policies for Law Enforcement

Prohibits destruction of kits

Mandates process for notifying victims about kit progress

SART Committee to help develop victim-centered, evidence-based model policies

Other Key Elements of the SAFE ACT

Establishes SANE-ready designation

CHFS will certify hospitals with SANE nurse on call 24/7, provide list of SANE-ready hospitals to EMS

Increases Reporting

Calls for collection of data related to sexual assault in Kentucky and analysis of costs of these crimes

Continued from Page 3 SB 63—The Safe Act

STATUTORY PROVISIONS (SUMMARY OF PERTINENT KRS & KAR)

KRS 15.440, sexual assault investigation policy shall include the following requirements:

1. Evidence collected as a result of an examination performed under KRS 216B.400 is required to be taken into custody within five (5) days of notice from the collecting facility.
2. Evidence received from a collecting facility relating to an incident which occurred outside the jurisdiction of the department shall be transmitted to a department with jurisdiction within ten (10) days of receipt by the department.
3. Evidence retrieved from a collecting facility shall be transmitted to the Kentucky State Police Forensic Laboratory within thirty (30) days of its receipt by the department.
4. A suspect standard, if available, shall be transmitted to the Kentucky State Police Forensic Laboratory with the evidence received from the collecting facility.
5. A process for notifying victims from whom evidence was collected of the progress of testing, whether testing resulted in a match to other DNA samples, and if the evidence is to be destroyed. The notice may be delayed until a suspect is apprehended or the office of the Commonwealth's attorney consents to the notification. Disclosure of the suspect's identity is not required.

KRS 17.175 (3)(a)

The department shall analyze and classify all sexual assault evidence collection kits it receives.

KRS 216B.400

(9) No charge shall be made to the victim for sexual assault examinations by the hospital, the sexual assault examination facility, the physician, the pharmacist, the health department, the sexual assault nurse examiner, other qualified medical professional, the victim's insurance carrier, or the Commonwealth.

(10)(a) Each victim shall have the right to determine whether a report or other notification shall be made to law enforcement. No victim shall be denied an examination because the victim chooses not to file a police report, cooperate with law enforcement, or otherwise participate in the criminal justice system.

502 KAR 12:010

Section 2(2)(b)(1) The examination facility shall not contact law enforcement or release any information to law enforcement without the victim's authorization.

502 KAR 20:020 Detection of Deception Examiners

Section 4 (2) An examination shall not be requested, required, or conducted of a sex crime victim as a condition for proceeding with the investigation of the crime.

Hair Examination & Comparison: Why?? Continued from page 2

Why do we need 30 pulled hairs?

Human hairs can vary widely over the head and pubic areas in color, shape, length, and other features. A person with brown hair, for example, can have 4 or 5 different shades of brown on their head. Collecting 30 hairs from all parts of the area allows us to see the range of features of that person's hair.

- Hairs need to be collected from all different areas of the sampled region. For example, a head hair standard should consist of hairs from the front, back, sides, and top of the head.
- Roots need to be included, as important microscopic characteristics are present in the root area.

Many hairs found at crime scenes have naturally-shed roots; it is therefore important to include this type of hair in the collected standard. These hairs can be obtained by gently pulling on a mass of hair or "combing" the fingers through the hair to obtain those that are ready to fall out.

Why do we need a victim standard?

- In violent crimes, it is usually the victim who will be shedding his/her hairs the most; therefore, most hairs found at the scene or on the victim will often be his/her own. We are therefore looking for hairs that "don't belong"

In cases with no known suspect, we can use these hairs that "don't belong," in conjunction with DNA, to try to develop a profile from the suspect.

Why do we need a suspect standard?

- When contact occurs between a victim and suspect, a transfer of hair from the suspect may occur. If the suspect is known, we need to know the characteristics of his/her hair standard, in order to see if any associations can be made.

Overlapping hair characteristics between a suspect and a victim may be encountered in casework. This means a hair may have microscopic characteristics that fall into the range of both the suspect and victim standards. Without a suspect's hair standard, we have no way to determine this, and further testing may not be pursued on that hair.

Why do we need a victim pubic standard collected at autopsy, even when no sexual assault has occurred?

- We often encounter pubic hair when examining the victim's clothing for suspect hairs. If no victim standard is provided, we have no way of determining if this hair could be from the victim him/herself. Secondary transfer of pubic hair may occur from a suspect in non-sexual assault cases, such as when a weapon is concealed in that area. A victim pubic hair standard is required for comparison.

If a hair examination is requested in a homicide case, the victim's hair standards must be collected at the autopsy!

FAQ's

Q: What is the difference between a "net" weight and a "gross" weight?

A: A "net" weight refers to the weight of a substance without any packaging (i.e. – just the green plant material after it has been removed from a knotted plastic bag.) A "gross" weight refers to the weight of a substance AND its container (i.e. – the green plant material and the plastic bag containing it). As a general rule, the weights reported on KSP lab reports of items that are TESTED are reported as a net weight. Items NOT tested, in most instances, are reported as a gross weight.

What's New at the Lab?

New Casework Sections

As the Forensic Biology and Toxicology sections at the Central Laboratory have grown over the years to be the largest sections at the laboratory, the decision was made to divide the sections based on the types of cases each section would handle. In Toxicology one section is now devoted to analysis for drug arrests and is supervised by Brandon Standifer. Ryan Johnson's toxicology section concentrates on DUI arrests, job screening and R&D. For Forensic Biology there is now a Serology section which will screen evidence for bodily fluids and perform sampling to pass on to DNA and is supervised by Sally Edwards. The new Property Crimes section will focus on burglaries, robberies and arson cases and is supervised by Sabrina Christian. Whitney Collins-Fouts will now be supervising the Violent Crimes section which will focus on sexual assaults, murder and other violent offenses. In allowing each section to focus on one particular type of analysis this should help analysts improve efficiency, aid in reducing backlogs and improve turn around times for cases. Contact information for all supervisors at the laboratory can be found on page 7.

New Serologists

Sara Tillery, Erica Fite, Gavin Hall, Lauren Wickline, Windy Allman, Corey Newsome and Taylor Hare have all successfully completed serology training this year. All of these analysts are already making a huge difference in the case backlog by effectively and efficiently contacting officers and working cases to ensure they are ready for DNA analysis. All have shown that they are willing and able to go above and beyond for the job. Sally Edwards, supervisor of the Serology section is incredibly proud of each of them for their contribution to this agency. Additionally, Nechelle Burns along with a majority of the forensic biology casework analysts at the Central Laboratory have helped tremendously with training these new analysts and assisting with working on the serology case backlog. The training process is a meticulous, thorough process that could not happen without these analysts.

Why aren't GSR-SEM kits analyzed on victims of a gunshot wound?

It is the policy of the Kentucky State Police Central Forensic Laboratory to not routinely conduct gunshot residue analysis on GSR-SEM kits collected from victims of a gunshot wound. It is not uncommon to find gunshot residue particles on victims.

Gunshot residue particles can follow the path of the bullet, therefore it's not unusual to find GSR on a victim shot at relatively close range. Gunshot residue analysis cannot tell you if the subject is a victim of a suicide, homicide, or accidental shooting. **NO test is going to tell you WHO shot the gun!**

Most other laboratories do not analyze victim kits as well. We want to provide the best services possible. The new GSR analysis can be very time consuming. Therefore, we want to make sure the evidence we do analyze will actually have probative value to a case.

A victim kit may be analyzed if the case information indicates the victim was shot through a barrier (i.e. door, wall, car door) or if the distance between the victim and the shooter was sixty (60) feet or greater. These are instances when a victim's hands may be relatively free of gunshot residue if they have not recently discharged a firearm or handled an object with gunshot residue on it.

The case acceptance policy for GSR-SEM kits can be found in the Kentucky State Police Physical Evidence Collection Guide, which is located on the KSP public website (www.kentuckystatepolice.org).

Laboratory Management

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Laboratory phone numbers and contact info

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Southeastern Laboratory, 606-877-1464

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Eastern Laboratory, 606-929-9142

Larry Boggs, Laboratory Director (larry.boggs@ky.gov)

Central Laboratory, 502-564-5230 or 800-326-4879

Central Laboratory Section Supervisors:

Matthew Clements, Firearms/Toolmark Supervisor (matthew.clements@ky.gov)

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SUGGESTIONS WELCOME!!

Please contact regina.wells@ky.gov with comments or suggestions.

QUICK LINKS

[KSP Lab website \(previous newsletters\)](#)

[Physical Evidence Collection Guide](#)

[Combined DNA Index System \(CODIS\)](#)

Scientific Working Groups...

[SWGAM \(DNA\)](#)

[SWGUN \(Firearms\)](#)