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DNA & CRIME VICTIMS: What Victim Assistance Professionals Need to Know

As the use of DNA evidence in criminal trials grows, victim advocates and other professionals who work with crime victims are increasingly being called upon to help victims understand the process of DNA collection and its potential impact on their cases. This booklet aims to increase victim service providers' understanding of the use of DNA as forensic evidence and its implications for victims of crime. The ultimate goal is to make service providers more knowledgeable, comfortable, and confident when supporting victims in cases where DNA evidence is relevant.

1. What are typical sources of DNA evidence?

DNA evidence is found in biological material. Some of the most common types of material in which DNA can be found are blood, saliva, sweat, urine, skin tissue, and semen. DNA could potentially be found on a victim's body (including under fingernails), clothing, cigarette butts, drinking glasses, furniture, weapons, and ropes or any other item used to bind a victim. Anything a perpetrator touches could potentially have DNA evidence on it.

2. In what criminal cases is DNA evidence most often introduced at trial?

DNA evidence is most commonly used in cases of sexual assault, child sexual assault or sexual abuse, and homicide. However, it has the potential to be useful in any number of crimes, including home invasions, burglaries, drug offenses, abductions, assaults, and stalking cases.

3. What is CODIS, and what information does it contain?

The Combined DNA Index System, or CODIS, is a system of national, state, and local

databases managed by the FBI that allows crime laboratory personnel across the country to compare DNA profiles from known criminal offenders (and arrestees where applicable) with biological evidence from crime scenes. CODIS has proven crucial to solving crimes in which the offender's identity is unknown. CODIS can match crimes to each other, thereby identifying serial offenders.

CODIS can also match DNA profiles of unidentified human remains to DNA profiles from missing persons or their close family members to attempt to identify the remains. This section of the database is known as CODIS + mito. The missing persons information is indexed in a separate part of the database from the crime information. Each record in CODIS contains information about the lab that entered the profile, an identifier for the DNA specimen, and the results of the DNA testing or the DNA profile. Other than the DNA profile, CODIS does not contain any other information that identifies the source of the profile. In other words, the CODIS database does not contain names, dates of birth, Social Security numbers, or any other personal identifier. CODIS, which follows strict rules that protect individual privacy, does not contain DNA profiles of crime victims. (See Questions 7-9 for more information on victim DNA profiles.)

4. Who has access to the information in CODIS?

CODIS is not accessible to the general public or even most criminal justice professionals. Only the database administrator at the government laboratory and staff responsible for entering DNA profiles into CODIS have access to the DNA database at each level (local, state, and national).

5. What exactly is a DNA profile?

DNA profiles created for criminal justice purposes contain a certain set of identifiers or characteristics, which are found at specific points—called loci—on the DNA molecule. Information from 13 of these loci constitutes a DNA profile, and, much like a fingerprint, the features of DNA profiles can be compared to other DNA profiles for genetic matches or for exclusions, which eliminate individuals as contributors of DNA found at the crime scene. When the DNA profile is entered into the DNA database, it appears as a series of numbers and does not include information about physical traits such as race, age, or medical conditions.

6. Which offenders are required to contribute samples for the database?

All 50 states and the federal government require those convicted of sex offenses to submit a biological sample for DNA profiling. Most states require samples from all convicted felons, and some collect from arrestees (mostly for felonies). The federal government also authorizes collection of a DNA sample from anyone arrested on any federal charge. The general trend across the country is to expand the number and types of crimes qualifying for DNA collection, including the collection of DNA samples from arrestees.

7. Why do victims need to provide DNA samples?

Victims and others present at the crime scene may be asked by investigators to provide a DNA sample, called a “reference sample.” These samples are used to eliminate or include those individuals as contributors of DNA found at the crime scene. In sexual assault cases, reference samples will be needed from any individual the victim had consensual sex within the previous four days.

8. What happens to the DNA of a victim and other reference samples after they are collected? Do they go into the database?

The victim’s DNA profile is used only for comparison purposes to distinguish it from the DNA profile of the perpetrator. Victims’ DNA profiles and other DNA profiles taken for exclusion (such as those from the victim’s consensual sex partner) are NOT uploaded into CODIS.

There currently is no uniformity regarding what labs do with victim and reference samples after testing. Some government labs do retain victims’ and other reference samples indefinitely. Many return the sample to the law enforcement agency that submitted it for testing, but retain the digitalized DNA profile. In many instances, the evidence becomes the property of the jurisdiction investigating the case.

9. Is a victim’s name attached to his or her DNA during the testing process? What if a victim is acquainted with people who work in the lab—how is his or her privacy protected?

Yes, the victim’s name is part of the case file, and the original sample will be labeled

with his or her name and case number. Laboratories have rigid confidentiality rules. Strict federal laws prohibit the disclosure of this information for purposes other than law enforcement or prosecution.

10. Will the victim’s personal items with potential DNA evidence (e.g., clothing) be returned? If so, when?

Whether personal items collected during the investigation will be returned depends on several factors. In some cases, the items may be kept indefinitely because state law may require that evidence used to convict a defendant be available until a specific time after the sentence is imposed, completion of the sentence, exoneration, or execution. Conversely, some jurisdictions may require prompt return of a victim’s items after approval by the prosecutor if they are no longer needed for evidentiary purposes. In some cases, a photograph of the evidence may be used so that the items may be given back to the victim. Victims should be aware that items that are returned may have been damaged during the DNA testing process.

11. How long after a crime can DNA evidence be collected, and how long after it is collected is it still good for testing?

In general, once a body fluid dries to form a stain, the DNA is stable and, thus, can be analyzed over time. However, due to the adverse impact of various environmental conditions (mainly heat and humidity), biological material should be collected for use as evidence as soon as possible. In sexual assault cases, it is important to obtain evidence samples from the victim as soon as possible after the incident, preferably within 12-24 hours. Federal guidelines for sexual assault nurse examiners state that evidence in sexual assault cases should be collected within 72 hours, though some programs are expanding that deadline to 96 hours due to advances in DNA technology. With appropriate storage, DNA evidence collected properly and in a timely manner can be analyzed after the passage of any amount of time.

12. What assurance is there that DNA samples are being handled properly throughout the collection, testing, and storage processes, especially as they are transported from one place to another?

Biological evidence is often identified and collected by one person, transported by someone else, accepted at the storage unit by a different person, and then stored by yet another. This “chain of custody” begins with the first law enforcement officer

to have contact with the evidence at a crime scene. Every individual who then has physical contact with the evidence must be documented. Individuals responsible for handling evidence receive training on ensuring that the chain of custody is maintained. Documentation of the chain of custody is crucial to the credibility of the evidence in court. It is, of course, possible for human error to occur at any point in the chain.

13. I am working with a victim who reported a crime, but there has been no effort to collect DNA evidence. Why not?

DNA evidence may not be available or useful in every case. If a perpetrator takes certain precautions, he or she could leave behind little or no trace of biological material that could include DNA. The crime scene may have been contaminated so that forensic evidence no longer exists or is not usable. In some cases, such as an acquaintance rape where consent is used as a defense, DNA results may not be helpful for proving guilt. (See Question 2 for criminal cases in which DNA evidence is most often used.) The availability of other evidence in certain cases may make DNA analysis unnecessary. In some cases, investigators may simply lack training or resources for DNA collection and testing, although significant efforts have been made by the federal government in the past few years to provide such training. A lack of resources for testing should not prohibit DNA collection: financial support for analyzing DNA evidence is available through the federal government.¹

14. Why does my jurisdiction limit the number of items per case that can be sent for DNA testing?

Most jurisdictions face a substantial backlog of forensic DNA evidence awaiting analysis. Some jurisdictions have chosen to respond to this problem by limiting the number of items that can be submitted for testing because they simply lack resources to perform numerous tests for each case. Limiting the number of items that can be sent for testing helps to conserve resources and not compound the DNA evidence backlog. Investigators should be trained sufficiently to prioritize evidence and submit the items that are most likely to contain some type of biological material for DNA testing.

¹ For more information, see www.dna.gov.

15. Why can it take so long to analyze the DNA sample? Why are some cases a higher priority than others? How do I explain to a victim that her case is a lower priority than someone else's?

Testing delays are understandably very frustrating for victims. Though explaining lab priorities may not alleviate a victim's frustration and anger, a victim deserves to know why it is taking so long to test evidence in the case. From a purely practical perspective, crime labs often operate in a triage fashion because there is continually a large amount of evidence waiting to be analyzed and limited lab personnel to perform the tests. Cases that are going to court receive priority for testing because the results are time sensitive, and a case may be dismissed if the evidence is not ready. Cases in which the DNA test is needed to include or exclude a known individual as a suspect in a crime are generally handled next. Cases in which there is no suspect generally receive the lowest priority.

16. What does it mean if the DNA does not match the suspect? What if it does?

If DNA from biological material taken from a crime scene matches the DNA profile of a suspect, it shows, with high probability, that the suspect contributed the biological material at the crime scene. If the DNA does not match the suspect, it means that the suspect did not leave the biological material that was found at the crime scene. In either case, DNA is only part of the evidence. A lack of DNA match does not necessarily mean that the suspect is innocent, and a DNA match alone does not prove that the suspect committed the crime. Most crimes are, in fact, prosecuted without DNA evidence, and even when there is a DNA match, other evidence is generally needed to prove the case (despite the impression given by popular television shows). Besides resulting in a match or exclusion, DNA analysis can also yield inconclusive results, for example, if the sample has been contaminated or degraded or if it is insufficient to yield a reportable result.

17. How reliable is DNA testing?

DNA testing is considered highly reliable in identifying individuals. Although more than 99 percent of DNA is the same in all people, there is sufficient variation in the remaining 1 percent to permit human identification. Indeed, scientists use much less than 1 percent of a person's DNA (approximately one ten-thousandth of 1 percent)

to create a DNA profile. They look for matches based on small repeating units of DNA sequences at a number of different locations on the person's genome (all genetic information of an organism). When a certain number of these sequences match, the results can supply proof beyond a reasonable doubt that the person is the source of the biological material. The probability that another person selected at random from the general population has the same DNA profile is extremely low. Identical twins share the same DNA, so their DNA profiles would match perfectly.

18. How much does DNA testing cost, and who pays for it?

The cost of DNA testing varies widely depending on a number of factors. A rough estimate for a rape case that includes one victim and one unknown suspect is \$1,000. Cases with a number of suspects and numerous items to be tested require more labor and more chemicals for testing, thus increasing the costs. The entity responsible for paying for the tests varies from jurisdiction to jurisdiction. In some places, a law enforcement agency or prosecutor's office pays for DNA testing. In some jurisdictions, special funds have been created to pay for DNA testing. Forensic examinations for the collection of DNA evidence can often be paid for through a state's victim compensation fund.

19. What is the difference between mitochondrial DNA and "regular" or nuclear DNA? When is each kind used in testing?

Nuclear DNA is located in the cell nucleus. Mitochondrial DNA (mtDNA) is found in the cell's mitochondria. Both are used in DNA testing. Mitochondrial DNA is inherited only from the mother; thus, siblings with the same mother share the same mtDNA. They also share the same mtDNA as their mother's maternal relatives. Mitochondrial DNA is not as powerful in making identifications as nuclear DNA. However, it is less susceptible to damage from heat and other environmental conditions and is found in higher concentrations in older biological materials, such as bones, hair, and teeth, that no longer contain cell nuclei. For this reason, mitochondrial DNA is advantageous for identifying human remains. Mitochondrial DNA is being used with increasing regularity in missing persons cases because reference samples can be provided by a maternal relative of the missing person.

20. What are the implications of taking DNA from all arrestees? Why is this controversial?

Opponents of collecting DNA from all arrestees argue that taking DNA from those not yet convicted of a crime violates their civil liberties. They also argue that certain groups of people may be wrongly arrested and, thus, wrongly included in the DNA database. These might include victims of domestic violence wrongly arrested for violence committed in self-defense. Others argue that such collection will exacerbate DNA backlogs because of the huge number of samples to be tested. States are already struggling to keep up with the increase in testing that has resulted from laws requiring collection from all convicted felons.

Proponents of collecting DNA from all arrestees argue that the process is similar to fingerprinting, which is already routinely done for all arrestees. Proponents also point to data showing that most individuals who commit crimes are repeat offenders, and while they may be arrested for the crime, many avoid conviction. From a crime prevention perspective, stopping repeat offenders will save countless victims and families much suffering. A Chicago area study documented 22 murders and 30 rapes that could have been prevented had the perpetrator's DNA been taken at a previous arrest.² Virginia, one of the first states to start collecting DNA profiles from arrestees and uploading these profiles into CODIS, has solved 288 crimes (59 sex crimes) through links to arrestees.

21. How are decisions made about which cases merit post-conviction testing, and how is the victim informed of that process?

In some cases in which a request has been made for post-conviction testing, the defense counsel and prosecutors may agree that DNA testing is appropriate. In other cases, a judge may be asked to decide whether the test should be granted. Requests for post-conviction testing are considered based on several factors, including applicable state laws, whether DNA testing was conducted at the time of the trial, the potential evidentiary value of a new DNA test, any other evidence available such as eyewitness accounts, and what the original plea in the case was.

2 Congressional Record—Senate, July 29, 2005, S9528-S9531.

22. How can I support a victim when post-conviction DNA testing exonerates her convicted offender?

When previously convicted offenders are exonerated, victims of those crimes grapple with a whole host of concerns and emotions. A victim whose identification of the offender was a key piece of evidence that led to conviction may feel a sense of guilt and regret. Safety is often a significant concern for victims at this time. A victim may fear retaliation by the wrongfully convicted person. Victims may also be afraid because they now know that the true perpetrator is still at large. Conversely, regardless of the outcome of DNA testing or other evidence, the victim may remain convinced that the exonerated person was in fact the true perpetrator, and therefore, feel anger, fear, or outrage at the person's release.

Victims should be approached with sensitivity about the stress and hardship the exoneration will undoubtedly place on them and their families. To best meet individual victims' needs, each case should be examined by the law enforcement officer and victim advocate to determine the most appropriate setting for the first contact. Privacy may be an important factor, especially if the victimization occurred under circumstances that may now be embarrassing or otherwise uncomfortable to the victim.

Advocates can assist victims with safety planning and dealing with the media. Advocates should also prepare victims for the possibility that law enforcement and prosecutors may reopen their search for the real offender. If this occurs, it could mean a victim will be asked to provide a new blood sample and possibly endure a new trial. It is helpful for victims to receive as much information as possible about the process.

23. What type of quality assurance measures are in place at DNA labs?

The FBI, which manages CODIS, requires all labs participating in the national database to comply with national DNA quality assurance standards and to be accredited in order to upload DNA profiles into the system. These standards cover different factors that affect quality, including training of personnel, the physical environment in which the tests are done, the equipment used, and the handling of the items being analyzed. Accreditation is an assessment by an impartial agency that a lab is in compliance with performance standards. Government labs are required to undergo periodic accrediting and auditing. Private labs that perform DNA testing for the

government (often to help reduce the DNA backlog) must follow the same quality assurance standards.

24. Is DNA evidence eliminating the need for victim/witness testimony and other types of evidence?

No. While DNA evidence is a powerful tool for law enforcement officers and prosecutors because it can place a suspect at the scene of a crime, eyewitness identification, victim input, proof of intent, and other evidence is still crucial to building a case against a suspect.

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