



Understanding the Role of DNA Evidence in a Sexual Assault Investigation: Part 3

Understanding DNA Evidence: A Little Bit of History

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This training bulletin is the third in a [series](#) developed to explain the role of DNA evidence in a sexual assault investigation. As illustrated with the case example presented in the prior training bulletin, I think it is important to remember how recent the developments in DNA technology actually are. This will help us to appreciate just how far we've come, in such a short time, and to better understand why we currently face the challenges that we do. In this installment, I would like to provide some historical perspective on the use of DNA for law enforcement purposes, based primarily on information provided by Smith Alling Lane, a Professional Services Corporation in Governmental Affairs and Attorneys at Law.

Note: This series is adapted from a collection of articles originally appearing in *Sexual Assault Report* (Volume 14, Number 3), published by the Civic Research Institute, all rights reserved.

Introduction

The science of DNA as we know it only became available to law enforcement during the late 1980's. However, just because the technology became "available" at that point does not mean the average law enforcement agency had access to DNA analysis. This is like saying that we have the technology to go to the moon; we all know this does not necessarily mean that any of us will personally go to the moon during our lifetime.

Submission to CODIS

During the time period in which this case example took place, most states could only submit DNA profiles to the [Combined DNA Index System \(CODIS\)](#) for offenders who were convicted of the most violent crimes and for certain sexual assault offenses. In 1988, Colorado became the first state to enact laws requiring DNA reference standards to be collected from sex offenders. By 2000, only seven states had laws that allowed DNA reference standards to be collected from individuals convicted of all felonies. It wasn't until 1994 that Congress enacted the DNA Identification Act and CODIS was formally created. This is only 19 years ago – a very short period of time to implement the dramatic transformations in policy and practice that DNA technology has required.

Convicted Offenders

In 2000, Congress enacted the DNA Backlog Elimination Act, appropriating \$140 million for DNA resources. By 2005, 43 states had passed legislation authorizing the collection

of DNA reference standards from individuals convicted of all felonies.¹ Today, all 50 states as well as the federal government have laws requiring the collection of DNA samples from individuals convicted of certain crimes, according to the [National Institute of Justice](#).

Arrestee Database

Following a series of sexual assault homicides committed in Baton Rouge between 2001 and 2003, Louisiana passed legislation in 2005 to become one of the first states to allow DNA testing for individuals at the point of arrest – again, for all felonies but this time for some misdemeanors as well. This sparked a nationwide push for similar laws to test arrestees. In the same year, President Bush signed the DNA initiative known as the Debbie Smith Act, appropriating an additional billion dollars for DNA testing.

In September 2005, only one of the five states identified in this case example (California) allowed for DNA testing at the point of a felony arrest or indictment. Today, 28 states collect DNA from arrested offenders (National Institute of Justice, 2012). As a result, the case example we provided in the prior training bulletin might have unfolded very differently if it were to take place today.

Case Example

With the laws that are currently in place, investigators in Marana, Arizona would have been able to enter Selby's DNA profile in CODIS at the point of his arrest rather than his conviction. This is important because Selby was not convicted for that crime. He was acquitted by a Pima County jury, on the charges of attempted sexual assault, aggravated assault with a deadly weapon, false imprisonment, and kidnapping. He was only convicted for simple assault, a crime that did not make him eligible for inclusion in CODIS. As a result, his known DNA profile was not entered into CODIS, and it was not available for investigators in any of the subsequent cases, in order to link them together and to identify Selby in the subsequent assaults.

Even at the time, a forensic DNA profile could have been submitted to CODIS, based on the evidence collected in the case. However, the majority of law enforcement agencies across the country did not do this as a matter of routine practice, because of limited resources and/or a variety of other reasons.

Investigators in Oklahoma could not obtain a known reference standard from Selby before he fled their jurisdiction. As a result, Selby's DNA profile still could not have been entered into CODIS, even today, unless he was located and arrested. Similarly, the detectives in Nevada still would not be able to enter a DNA profile in the CODIS Convicted Offender Database today, based on evidence they collected from his

¹Information on the legislative history of DNA was drawn from: Schelberg, T. (2005, October 5). *Legislative establishment of comprehensive forensic DNA programs: Lessons learned from the United States and Europe*. Data presentation by Smith Alling Lane. Available from the author.

apartment – because they were unable to obtain a known reference standard or make an arrest. If they could have done so, it might have possibly prevented the subsequent assaults in San Diego, Tucson, and Colorado Springs.

Global Perspective

It is also important to understand that DNA has not just been an issue in the United States. In fact, the United Kingdom has led the world in its DNA reforms. In the United States, Virginia and Florida contributed greatly to our current understanding of the valuable use of DNA databases. These states were two of the first to collect DNA from all felons, and they demonstrated how many CODIS hits could be made based on non-violent crimes, such as forgery or drug offenses. The nature of the CODIS hits also confirmed how much crossover there is between violent, sexual, and non-violent offending. Based on the data, the power and value of DNA offender databases was revealed to the rest of the country and the world.

We all want to live in safer communities – in a safer world. I believe this is becoming a reality, thanks to the advances in DNA technology. To demonstrate, I would like to return to some of the data provided by Smith Alling Lane.² As of 2005, 32 countries (representing 30% of the world's population) had passed – and implemented – laws creating DNA databases which then included an estimated 25 million offender samples worldwide. By 2015, it has been estimated that countries representing 60% of the world's population will have implemented such legislation, which will mean that databases will potentially include 100 million DNA samples from around the globe.

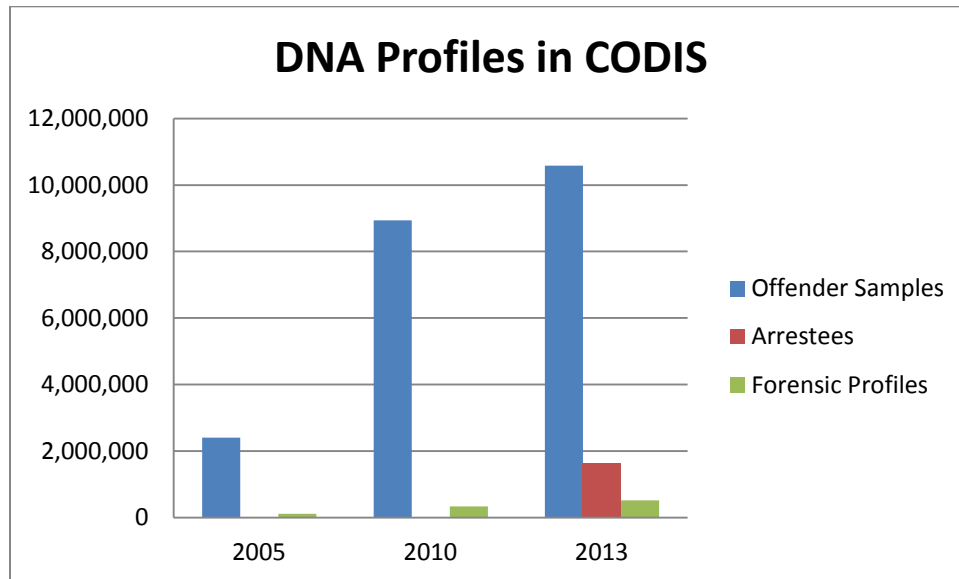
In the United States alone, it is estimated that hit rates will increase from 10% to 70% – when DNA samples are taken from all arrestees, rather than simply collecting them from sex offenders and other violent offenders. To illustrate, in 2005, the UK had a 60% hit rate. If they had 5,000 stranger rapes with no evidence except for DNA, this means that 3,000 of these cases could be solved by DNA. These numbers demonstrate the staggering benefits of mature DNA offender databases. As a result of the findings and public support, President Obama announced his support for such efforts by pushing for new federal legislation to promote arrestee testing.

Progress So Far

Again, it is important to understand the progress that we have made – and continue to make. In September 2005, there were 2.4 million offender samples and 114,000 crime scene samples available. Five years later this increased to over 8,939,031 offender profiles and 337,988 forensic profiles. As of September 2013, just eight years later, the [National DNA Index \(NDIS\)](#) contained over 10,581,700 offender profiles, 1,641,400 arrestee profiles, and 514,700 forensic profiles. Clearly, the number of DNA profiles

² Information on the global perspective on DNA is drawn from: Schelberg, T. (2010, June 15-16). *Forensic DNA Databases: A Global Update*. Data presentation by Smith Alling Lane. Available from the author.

from convicted offenders has increased dramatically since 2005, and the number of arrestee profiles appears to be taking the same path. Yet the number of forensic DNA profiles developed from evidence continues to lag (see chart below). This suggests that we need continued training for law enforcement on the many sources of forensic evidence that can be submitted to crime labs for analysis.



Future Promise

DNA databases even produce benefits beyond solving crimes. Perhaps most important, the databases help to prevent future crimes, by identifying offenders as early as possible. Law enforcement agencies can also solve more crimes, while spending less money. This is always an important goal, but especially critical during the current economic climate. To date, CODIS has produced over 226,000 hits, assisting in more than 213,500 investigations (according to the [FBI](#)).

In addition, DNA databases can help to exonerate those who are innocent yet charged with crimes. In the U.S. alone, there have been 311 post-conviction DNA exonerations, according to the [Innocence Project](#).

The cost-benefit analysis of DNA testing is hard to calculate, or even imagine, if you are the victim of a crime, an individual who is wrongly accused, or a loved one of the victim or the accused. However, as a veteran of law enforcement, I have long dreamed of living in a world where offenders are held accountable, the innocent are exonerated, and victims are offered justice and healing. It is exciting for me to see where we are today and to realize that the future is only that much more promising. In fact, that future promise is where we will turn our attention in the next training bulletin -- the final one in the series -- where we will chart a course for reform and offer best practice recommendations.

References

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